

**PENERAPAN ALGORITMA BORUVKA METODE
CONTRACTED GRAPH DALAM MENENTUKAN *MINIMUM
SPANNING TREE***

(Studi Kasus: PDAM Gunungkidul wilayah Wiladeg dan Tunggul)

Skripsi

Untuk memenuhi sebagian persyaratan
mencapai derajat Sarjana S-1

Program Studi Matematika



diajukan oleh

**DANI NUR AFANDI
12610019**

Kepada

**PROGRAM STUDI MATEMATIKA
FAKULTAS SAINS DAN TEKNOLOGI
UIN SUNAN KALIJAGA
YOGYAKARTA
2017**



SURAT PERSETUJUAN SKRIPSI/TUGAS AKHIR

Hal : SURAT PERSETUJUAN SKRIPSI/TUGAS AKHIR

Lamp : -

Kepada

Yth. Dekan Fakultas Sains dan Teknologi

UIN Sunan Kalijaga Yogyakarta

di Yogyakarta

Assalamu'alaikum wr. wb.

Setelah membaca, meneliti, memberikan petunjuk dan mengoreksi serta mengadakan perbaikan seperlunya, maka kami selaku pembimbing berpendapat bahwa skripsi Saudara:

Nama : Dani Nur Afandi

NIM : 12610019

Judul Skripsi : Penerapan Algoritma Boruvka metode *Contracted Graph* dalam Menentukan *Minimum Spanning Tree* (Studi Kasus: PDAM Gunungkidul wilayah Wiladeg dan Tunggul)

sudah dapat diajukan kembali kepada Program Studi Matematika Fakultas Sains dan Teknologi UIN Sunan Kalijaga Yogyakarta sebagai salah satu syarat untuk memperoleh gelar Sarjana Strata Satu dalam bidang Matematika.

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Wassalamu'alaikum wr. wb.

Yogyakarta, 31 Juli 2017

Pembimbing

Noor Saif Muhammad Musaffi, S. Si., M.Sc.

NIP. 19820617 200912 1 005



KEMENTERIAN AGAMA
UNIVERSITAS ISLAM NEGERI SUNAN KALIJAGA
FAKULTAS SAINS DAN TEKNOLOGI

Jl. Marsda Adisucipto Telp. (0274) 540971 Fax. (0274) 519739 Yogyakarta 55281

PENGESAHAN TUGAS AKHIR

Nomor : B-1400/Un.02/DST/PP.00.9/08/2017

Tugas Akhir dengan judul : Penerapan Algoritma Boruvka Metode Contracted Graph dalam Menentukan Minimum Spanning Tree

yang dipersiapkan dan disusun oleh:

Nama : DANI NUR AFANDI
Nomor Induk Mahasiswa : 12610019
Telah diujikan pada : Senin, 07 Agustus 2017
Nilai ujian Tugas Akhir : A

dinyatakan telah diterima oleh Fakultas Sains dan Teknologi UIN Sunan Kalijaga Yogyakarta

TIM UJIAN TUGAS AKHIR

Ketua Sidang

Noor Saif Muhammad Mussafi, S.Si., M.Sc
NIP. 19820617 200912 1 005

Penguji I

Malahayati, S.Si., M.Sc
NIP. 19840412 201101 2 010

Penguji II

Sugiyanto, S.Si., M.Si
NIP. 19800505 200801 1 028

Yogyakarta, 07 Agustus 2017

UIN Sunan Kalijaga

Fakultas Sains dan Teknologi

DEKAN



Murtono, M.Si
NIP. 19691212 200003 1 001

SURAT PERNYATAAN KEASLIAN

Yang bertanda tangan di bawah ini:

Nama : Dani Nur Afandi

NIM : 12610019

Program Studi : Matematika

Fakultas : Sains dan Teknologi

Dengan ini menyatakan bahwa isi skripsi ini tidak terdapat karya yang pernah diajukan untuk memperoleh gelar sarjana di suatu Perguruan Tinggi dan sesungguhnya skripsi ini merupakan hasil pekerjaan penulis sendiri sepanjang pengetahuan penulis, bukan duplikasi atau saduran dari karya orang lain kecuali bagian tertentu yang penulis ambil sebagai bahan acuan. Apabila terbukti pernyataan ini tidak benar, sepenuhnya menjadi tanggung jawab penulis.

Yogyakarta, 31 Juli 2017

Yang Menyatakan

METERAI
TEMPEL

0717DAEF481736917

6000
ENAM RIBURUPAH

Dani Nur Afandi

NIM.12610019

MOTTO

*"Hidup untuk memberi sebanyak-banyaknya,
bukan untuk menerima sebanyak-banyaknya"*

STATE ISLAMIC UNIVERSITY
SUNAN KALIJAGA
YOGYAKARTA

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SUNAN KALIJAGA
YOGYAKARTA

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PENERAPAN ALGORITMA BORUVKA METODE *CONTRACTED GRAPH* DALAM MENENTUKAN *MINIMUM SPANNING TREE*

(Studi Kasus: PDAM Gunungkidul wilayah Wiladeg dan Tunggul)

Oleh :
Dani Nur Afandi
12610019

ABSTRAK

Kabupaten Gunungkidul merupakan salah satu Kabupaten di Provinsi Daerah Istimewa Yogyakarta yang terletak di bagian selatan. Sebagian besar masyarakatnya memanfaatkan air yang disediakan oleh Perusahaan Daerah Air Minum (PDAM) Tirta Handayani Gunungkidul. Tugas dari PDAM adalah menyediakan dan mendistribusikan air bagi warga masyarakat yang membutuhkan. Dalam hal pendistribusian air, jaringan pipa yang efisien sangat diperlukan, yaitu di mana setiap pelanggan yang membutuhkan air dapat terlayani dengan baik, namun dengan biaya pembangunan dan perawatan pipa saluran air yang minimal.

Permasalahan pengotimalan jaringan pipa PDAM Gunungkidul, khususnya di wilayah Wiladeg dan Tunggul merupakan masalah pencarian *Minimum Spanning Tree* (MST). Data jaringan pipa tersebut digambarkan dalam suatu graf berbobot tak berarah di mana setiap simpulnya merepresentasikan cabang jaringan pipa, dan sisinya merepresentasikan panjang pipa antar cabang tersebut. Selanjutnya dicari MST menggunakan Algoritma Boruvka metode *Contracted Graph*, yaitu dengan memilih sisi yang berbobot minimum dari setiap simpul, selanjutnya simpul yang terhubung oleh sisi terpilih tersebut dikerutkan (*contract*). Langkah tersebut dilakukan secara berulang-ulang hingga tersisa satu simpul pada graf tersebut. Gabungan sisi-sisi berbobot minimum tersebut merupakan MST. Pencarian MST dilakukan dengan cara perhitungan manual maupun dengan program komputer berbasis Matlab R2013a.

Ditemukan total panjang pipa efisien yaitu 33.539 meter, lebih kecil dari total panjang pipa awal yaitu 36.815 meter. Sehingga dapat disimpulkan bahwa Algoritma Boruvka metode *Contracted Graph* dapat digunakan sebagai alternatif solusi optimal pada jaringan pipa PDAM.

Kata Kunci: Algoritma Boruvka, *Contracted Graph*, MATLAB, *Minimum Spanning Tree* (MST), PDAM Tirta Handayani Gunungkidul.

BAB I

PENDAHULUAN

A. Latar Belakang Masalah

Teori graf adalah salah satu cabang ilmu matematika yang sudah ada sejak lama dan memiliki segi terapan di banyak bidang ilmu pengetahuan dan teknologi informasi. Graf membahas tentang model matematika untuk menganalisa banyak masalah konkret yang terjadi di dunia nyata. Beberapa masalah yang terdapat pada bidang fisika, kimia, ilmu komunikasi, komputasi, genetika, psikologi, sosiologi, maupun ilmu bahasa, itu semua dapat diformulasikan sebagai masalah di teori graf. Begitu juga beberapa cabang matematika seperti teori grup, teori matriks, probabilitas, maupun topologi, hubungannya sangat dekat dengan teori graf.

Teori graf membahas banyak konsep, salah satu diantaranya adalah konsep pohon (*tree*). *Tree* merupakan salah satu materi penting dalam teori graf, mengingat penerapannya yang luas, khususnya pada ilmu komputer. Definisi *tree* secara formal adalah graf tanpa *cycle* (R. Balakrishnan & K. Rangathan, 2012). Beberapa topik yang dibahas dalam *tree* adalah kasus Pohon Keputusan (*Decision Tree*), *Travelling Salesman Problem (TSP)*, Penjadwalan, dan juga *Minimum Spanning Tree (MST)*.

Minimum Spanning Tree atau pohon perentang minimum dari suatu graf terhubung berbobot adalah pohon perentang yang memiliki jumlah bobot terkecil dari sisi-sisinya (Kenneth H. Rosen, 2012). Untuk menentukan *Minimum Spanning Tree* dari suatu graf, kita dapat menggunakan beberapa algoritma diantaranya yaitu

Algoritma Prim, Algoritma Kruskal, Algoritma *Reverse Delete*, Algoritma Boruvka, maupun algoritma-algoritma penentuan *Minimum Spanning Tree* yang lain.

Banyak aplikasi dari *Minimum Spanning Tree* pada kehidupan nyata. Beberapa aplikasi tersebut antara lain pencarian jarak terpendek suatu rute perjalanan, efektifitas pemasangan jaringan kabel telepon, efektifitas pemasangan jaringan kabel listrik, efektifitas pemasangan jaringan pipa PDAM, dan masih banyak lagi.

Permasalahan *Minimum Spanning Tree* sederhana bisa diselesaikan dengan melakukan perhitungan manual. Namun pada kasus yang besar dan kompleks, perhitungan manual akan sulit dilakukan karena akan memakan waktu yang relatif lama. Oleh sebab itu, dibutuhkan suatu program komputer yang dapat melakukan perhitungan nilai *minumum spanning tree* dengan cepat dan akurat.

PDAM Gunungkidul sebagai penyedia air bersih bagi masyarakat Gunungkidul bertugas menyediakan dan mendistribusikan air dari PDAM pusat menuju rumah-rumah warga masyarakat Gunungkidul yang membutuhkan. PDAM mendistribusikan air dengan menggunakan pipa saluran air. Sebagian besar pipa saluran air menggunakan bahan besi, sehingga dibutuhkan biaya yang sangat besar untuk membeli material beserta pemasangannya. Maka dari itu dibutuhkan jaringan pipa yang efisien. Di mana setiap daerah yang membutuhkan air dari PDAM dapat terlayani dengan baik, tetapi dengan biaya pembuatan pipa saluran air yang minimal.

Penelitian ini akan membahas mengenai Algoritma Boruvka metode *Contracted Graph* sebagai algoritma pencari *Minimum Spanning Tree* dan penerapannya pada jaringan pipa distribusi air PDAM yang bertujuan untuk ditemukannya rancangan jaringan pipa yang efisien sebagai pertimbangan pembaharuan jaringan pipa PDAM di kemudian hari. Berdasarkan latar belakang di atas, maka peneliti mengambil judul penelitian “Penerapan Algoritma Boruvka Metode *Contracted Graph* dalam Menentukan *Minimum Spanning Tree* (Studi Kasus: PDAM Gunungkidul)”.

B. Batasan Masalah

Pembatasan masalah perlu dilakukan dengan tujuan agar pokok permasalahan yang diteliti tidak keluar dari yang sudah ditentukan. Batasan-batasan masalah yang diberikan dalam penelitian ini yaitu:

1. Graf yang digunakan merupakan graf berbobot tak berarah.
2. Bobot sisi diperoleh dari panjang pipa antar titik yang diamati.
3. Optimisasi difokuskan pada panjang jalur pipa.
4. Seluruh pipa mempunyai panjang yang berbeda satu sama lain.
5. Diameter pipa yang berkorelasi dengan debit air diabaikan.
6. Jaringan pipa yang dihitung hanya sampai pada pipa transmisi dan pipa distribusi, sehingga tidak langsung sampai ke konsumen.
7. Simpul graf merepresentasikan cabang dari jaringan pipa dan ujung pipa distribusi (yang selanjutnya dihubungkan ke jaringan pipa sambungan rumah), dan sisi graf merepresentasikan pipa.

C. Rumusan Masalah

Berdasarkan latar belakang yang telah diuraikan, maka masalah yang akan dikaji pada penelitian ini adalah:

1. Bagaimana konsep dan cara kerja Algoritma Boruvka Metode *Contracted Graph* dalam menentukan *Minimum Spanning Tree*?
2. Bagaimana penerapan Algoritma Boruvka Metode *Contracted Graph* dalam menentukan *Minimum Spanning Tree* pada jaringan pipa PDAM Gunungkidul?

D. Tujuan Penelitian

Berdasarkan rumusan masalah diatas, maka tujuan dari penelitian ini adalah:

1. Mengetahui konsep dan cara kerja Algoritma Boruvka Metode *Contracted Graph* dalam menentukan *Minimum Spanning Tree*.
2. Menerapkan Algoritma Boruvka Metode *Contracted Graph* dalam menentukan *Minimum Spanning Tree* pada jaringan pipa PDAM Gunungkidul.

E. Manfaat Penelitian

Manfaat Penelitian bagi mahasiswa yaitu mengetahui tentang Algoritma Boruvka Metode *Contracted Graph* dalam menentukan *Minimum Spanning Tree* dan implementasinya di kehidupan nyata. Sedangkan manfaat penelitian bagi praktisi, hal ini digunakan sebagai bahan pertimbangan pengambilan keputusan dalam pembaharuan jaringan pipa PDAM Gunungkidul yang lebih efisien.

F. Tinjauan Pustaka

Tinjauan pustaka skripsi ini terdiri dari beberapa jurnal dan skripsi sebagai referensi pelengkap guna menunjang kelengkapan penelitian.

Adapun penelitian sebelumnya yang berhubungan dengan penelitian skripsi ini dapat diklasifikasikan sebagai berikut:

Tabel 1.1: Kajian Pustaka

NO	Nama Peneliti	Judul Penelitian	Hasil Penelitian
1	Yvette (I-Ting) Tsai	<i>A Randomized Algorithm to Find Minimum Spanning Tree</i>	Penelitian ini membahas tentang konsep, cara kerja dan efektifitas Algoritma Random untuk penyelesaian <i>Minimum Spanning Tree</i> . Di dalamnya disimpulkan bahwa Algoritma Random lebih unggul dalam hal kecepatan proses (<i>running time</i>) dari pada Algoritma Prim, Algoritma Kruskal, dan Algoritma Boruvka.
2	Dwi Satio Nugroho	Penerapan Algoritma <i>Reverse Delete</i> Dalam Menentukan <i>Minimum Spanning Tree</i> Obyek Wisata di Kota Yogyakarta	Penelitian ini membahas konsep dan cara kerja Algoritma <i>Reverse Delete</i> dalam menentukan <i>Minimum Spanning Tree</i> untuk mengoptimalkan waktu perjalanan antar obyek wisata yang

			dipengaruhi oleh waktu tunggu pada <i>traffic light</i> di persimpangan jalan.
3	Najib Ubaidillah	Pengujian Optimalisasi Jaringan Kabel <i>Fiber Optic</i> di Universitas Islam Indonesia menggunakan <i>Minimum Spanning Tree</i>	Penelitian ini membahas aplikasi <i>Minimum Spanning Tree</i> pada Jaringan Kabel <i>Fiber Optic</i> di Universitas Islam Indonesia menggunakan Algoritma Prim, Kruskal, Boruvka dan Solin.
4	Cahyo Pramono	Aplikasi Algoritma Boruvka pada Jaringan Pipa Distribusi Air Bersih PDAM Tirta Dharma di Kecamatan Sewon Bantul	Penelitian ini membahas konsep dan cara kerja algoritma Boruvka dalam menentukan <i>Minimum Spanning tree</i> dan penerapannya pada jaringan pipa PDAM Tirta Dharma di Kecamatan Sewon Bantul beserta pembuatan program komputer menggunakan software MATLAB.
5	Dani Nur Afandi	Penerapan Algoritma Boruvka Metode <i>Contracted Graph</i> Dalam Menentukan	Penelitian ini membahas konsep dan cara kerja algoritma Boruvka dengan Metode

		<i>Minimum Spanning Tree</i> (Studi Kasus: PDAM Gunungkidul)	<i>Contracted Graph</i> dalam menentukan <i>Minimum Spanning tree</i> dan penerapannya pada efisiensi jaringan pipa PDAM Gunungkidul beserta pembuatan program komputer berbasis MATLAB yang berlaku umum tanpa batasan jumlah sisi dan simpul.
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Tinjauan pustaka penelitian ini terdiri dari jurnal dan skripsi penelitian sebelumnya. Terdapat persamaan dan perbedaan antara penelitian ini dengan penelitian-penelitian sebelumnya. Persamaan penelitian ini dengan penelitian karya Yvette (I-Ting) Tsai, Dwi Satio Nugroho, Najib Ubaidillah, dan Cahyo Pramono adalah sama-sama membahas tentang penyelesaian *Minimum Spanning Tree*. Persamaan selanjutnya antara penelitian ini dengan penelitian Dwi Satio Nugroho dan Cahyo Pramono adalah tentang penerapan *Minimum Spanning Tree* di dunia nyata, dan pembuatan program aplikasi berbasis MATLAB. Sedangkan perbedaan penelitian ini dengan keempat penelitian tersebut adalah Algoritma Boruvka Metode *Contracted Graph* sebagai algoritma tunggal yang dibahas pada penelitian ini, sedangkan penelitian karya Yvette (I-Ting) Tsai dan Najib Ubaidillah membahas Algoritma Boruvka sebagai salah satu dari beberapa algoritma pencari *Minimum Spanning Tree*, penelitian karya Dwi Satio Nugroho tidak membahas tentang Algoritma Boruvka, dan karya Cahyo Pramono yang membahas Algoritma

Boruvka metode *Blue Tree*. Selanjutnya pada penelitian ini akan dibuat program komputer menggunakan software MATLAB, di mana dari keempat penelitian tersebut hanya karya Dwi Satio Nugroho dan Cahyo Pramono Cahyo Pramono yang melakukan hal yang sama. Selain itu, program aplikasi yang dibuat merupakan aplikasi pengembangan dari program-program sebelumnya. Maka dari itu, penelitian ini adalah pengembangan dari penelitian-penelitian sebelumnya.



G. Sistematika Penulisan

Sistematika penyusunan skripsi ini adalah sebagai berikut:

BAB I Pendahuluan

Bab ini berisi latar belakang masalah, batasan masalah, rumusan masalah, tujuan penelitian, manfaat penelitian, tinjauan pustaka, sistematika penulisan, dan metode penelitian.

BAB II : Landasan Teori

Bab ini membahas mengenai teori-teori yang berkaitan dengan graf, algoritma, Algoritma Boruvka Metode *Contracted Graph* dan bahasa pemrograman MATLAB.

BAB III : Pembahasan

Pada bab ini akan dijelaskan konsep dan cara kerja dari Algoritma Boruvka Metode *Contracted Graph* serta penerapannya dalam menentukan *Minimum Spanning Tree* pada jaringan pipa PDAM Gunungkidul wilayah Wiladeg dan Tunggul. Di samping itu akan dibuat program Algoritma Boruvka menggunakan *software* MATLAB R2013a.

BAB IV : Penutup

Bab ini menguraikan kesimpulan dan saran dari pokok bahasan.

H. Metode Penelitian

Pada penelitian ini metode dan langkah-langkah yang digunakan adalah sebagai berikut:

a. Jenis Penelitian

Jenis penelitian ini adalah penelitian kualitatif.

b. Rancangan Penelitian

Rancangan penelitian ini menggunakan dua teknik dalam pengumpulan data yaitu:

1. Studi Literatur, yaitu membahas dan menjabarkan serta mengaitkan konsep-konsep yang sudah ada di dalam sumber pustaka.
2. Studi Lapangan, yaitu dengan meneliti langsung jaringan pipa PDAM Gunungkidul wilayah Wiladeg dan Tunggul sehingga didapat jaringan pipa yang efisien.

c. Tempat Penelitian

Penelitian dilakukan di Perusahaan Daerah Air Minum (PDAM) Pusat Kabupaten Gunungkidul.

d. Sumber Data

Sumber data yang digunakan dalam penelitian ini adalah sebagai berikut:

1. Data primer, berupa data jaringan pipa pendistribusian air dari PDAM Pusat Kabupaten Gunungkidul.

2. Data sekunder, berupa data profil PDAM Gunungkidul, data penelitian-penelitian sebelumnya, dan data sekunder lain yang dibutuhkan dalam penelitian ini.

e. Teknik Pengumpulan Data

- a. Dokumentasi, yaitu dengan mengumpulkan dokumen dan arsip-arsip perusahaan yang dibutuhkan dalam penelitian ini.
- b. Wawancara, yaitu dilakukan dengan mengajukan pertanyaan kepada seseorang yang dianggap paling tahu tentang subjek yang diteliti.
- c. *Focus Group Discussion* (FGD), merupakan bentuk kegiatan pengumpulan data melalui wawancara kelompok yang beranggotakan *stakeholder* dan orang-orang yang berkompeten dalam bidang yang bersangkutan dengan penelitian ini.

f. Metode Analisa

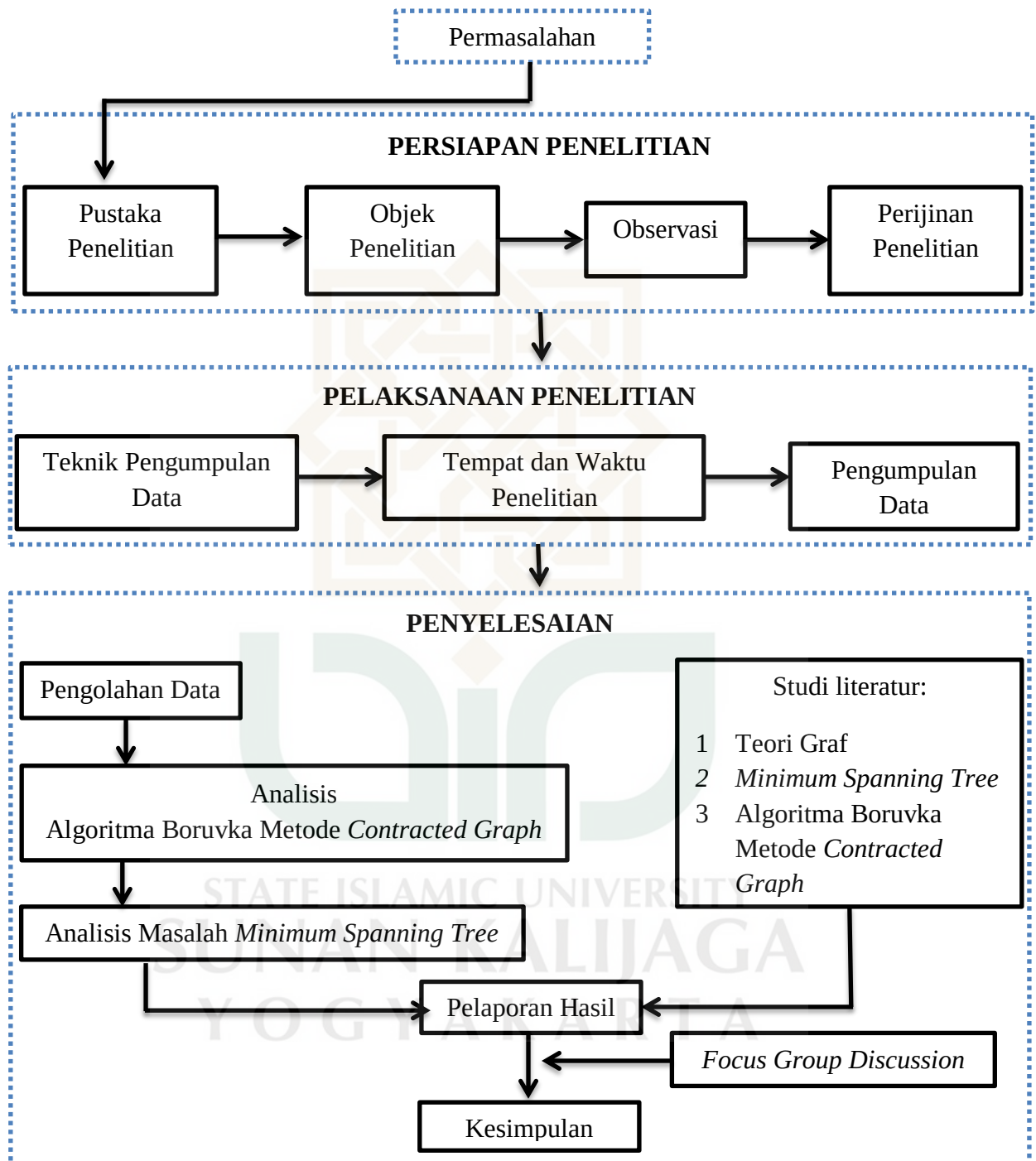
Data awal dirubah bentuk datanya yang semula berbentuk peta yang berisi data titik-titik yang diteliti dan panjang pipa antar titik, menjadi bentuk graf berbobot (graf awal), agar bisa dianalisa kemudian. Selanjutnya graf tersebut dianalisa dengan mencari *Minimum Spanning Tree* menggunakan Algoritma Boruvka Metode *Contracted Graph*. Setelah didapat *Minimum Spanning Tree* (graf baru), kemudian dihitung bobot total dari seluruh bobot sisinya. Selanjutnya dinilai apakah nilai bobot total graf baru lebih sedikit dari pada nilai bobot total graf awal. Jika nilai bobot total graf baru lebih sedikit, maka graf baru terbukti lebih efisien, sehingga dapat digunakan sebagai pertimbangan dalam hal pembaharuan jaringan pipa PDAM Gunungkidul di kemudian hari.

g. Variabel Penelitian

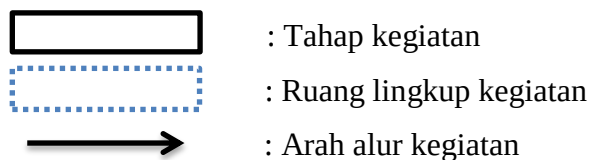
Variabel yang digunakan dalam penelitian ini terdiri dari dua variabel yaitu variabel bebas dan variabel terikat. Variabel bebas dalam penelitian ini adalah Algoritma Boruvka sebagai algoritma pencari *Minimum Spanning Tree*. Variabel terikat dalam penelitian ini adalah panjang pipa pendistribusian air PDAM Gunungkidul.



h. Alur Penelitian



Keterangan gambar:



Gambar 1.1 Alur Penelitian

BAB IV

PENUTUP

A. Kesimpulan

Berdasarkan pembahasan pencarian *Minimum Spanning Tree* pada pipa PDAM Gunungkidul wilayah Wiladeg dan Tunggul dengan Algoritma Boruvka metode *Contracted Graph*, dapat diambil kesimpulan adalah sebagai berikut:

1. Konsep dari Algoritma Boruvka metode *Contracted Graph* adalah memilih sisi yang berbobot minimum dari setiap simpul. Selanjutnya simpul yang terhubung oleh sisi terpilih tersebut dikerutkan (*contract*). Setelah itu langkah pemilihan sisi berbobot minimum dan pengerutan simpul dilakukan secara berulang-ulang hingga tersisa satu simpul pada graf tersebut. Gabungan sisi-sisi berbobot minimum tersebut merupakan *Minimum Spanning Tree*.
2. Cara kerja pencarian *Minimum Spanning Tree* dari suatu graf menggunakan Algoritma Boruvka metode *Contracted Graph* yaitu dimulai dari sebuah himpunan kosong T dan himpunan komponen ($Comp$) yang mana setiap simpul menjadi anggota dari $Comp$. Oleh karena itu, jumlah anggota awal dari $Comp$ adalah jumlah simpul di graf G . Selanjutnya pilih sisi dengan bobot minimum dari setiap komponen ke komponen lain yang terhubung dengannya. Masukkan sisi-sisi berbobot minimum tersebut ke T . Selanjutnya dilakukan pengerutan komponen di $Comp$ sesuai dengan sisi-sisi berbobot minimum di T . Ulangi langkah-langkah tersebut jika jumlah anggota $Comp$ tidak sama dengan satu ($\neq 1$). Berhenti jika jumlah anggota

Comp sama dengan satu ($= 1$). Selanjutnya gabungan sisi-sisi berbobot minimum tersebut merupakan *Minimum Spanning Tree* yang dihasilkan.

3. Setelah dilakukan analisa pada jaringan pipa PDAM Gunungkidul wilayah Wiladeg dan Tunggul menggunakan Algoritma Boruvka metode *Contracted Graph*, baik secara manual maupun program komputer berbasis Matlab, maka didapat *Minimum Spanning Tree*-nya dengan total panjang pipa 33539 meter, 3276 meter lebih pendek dari panjang total jaringan pipa graf awal (*Wit*) yaitu 36815 meter. Maka dapat disimpulkan bahwa Algoritma Boruvka metode *Contracted Graph* dapat menemukan solusi yang optimal pada jaringan pipa PDAM yang telah di analisa.

B. Saran

Berdasarkan pada penelitian yang telah dilakukan, maka terdapat beberapa saran sebagai berikut:

1. Data yang digunakan dari jaringan pipa PDAM Gunungkidul dalam penelitian ini hanya sebagian kecil tempat yaitu wilayah Wiladeg dan Tunggul, diharapkan penelitian kedepannya menggunakan data jaringan pipa wilayah yang lebih luas, sehingga manfaat yang didapat lebih luas.
2. Pada batasan masalah, penelitian ini hanya menggunakan data panjang pipa yang dihitung. Diharapkan pada penelitian selanjutnya untuk menambahkan parameter yang lain seperti debit air, diameter pipa dan lain sebagainya.
3. Program komputer yang telah peneliti buat, bagian proses input data graf umum masih belum bisa menampilkan iterasi secara lengkap. Diharapkan

pada penelitian selanjutnya program komputer yang dibuat dapat menampilkan setiap iterasi secara terperinci.

4. Program komputer yang digunakan pada penelitian ini adalah program Matlab, diharapkan pada penelitian selanjutnya menggunakan program aplikasi yang lain seperti Visual Basic, C++, dan lain sebagainya.



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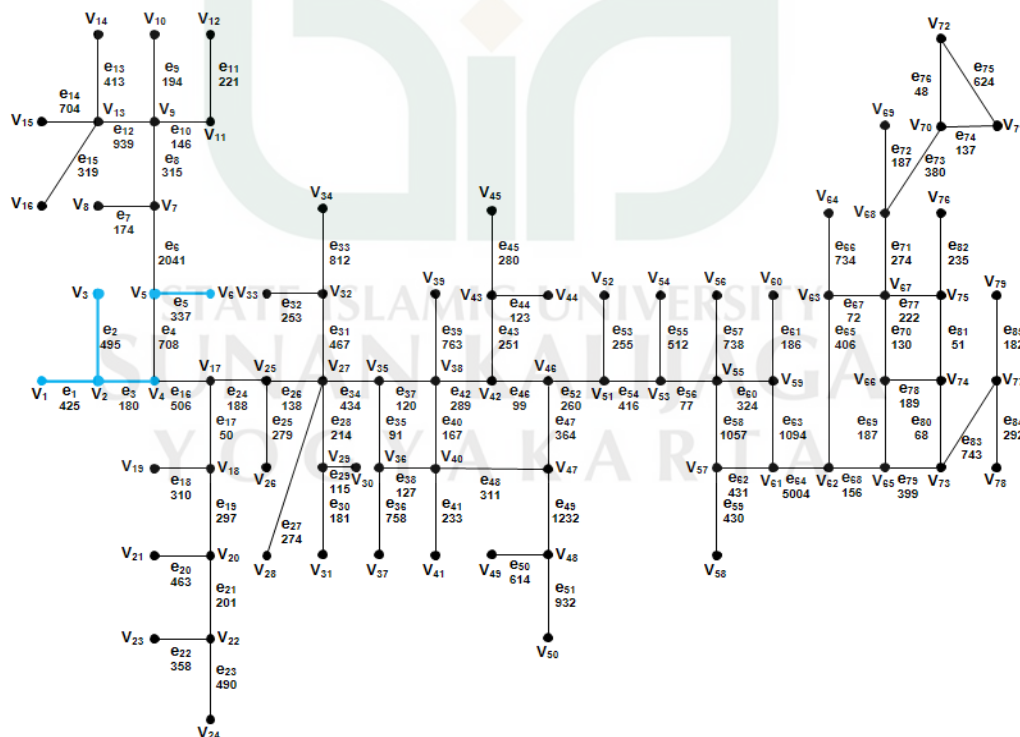
Lampiran 1

Iterasi-6 sampai dengan Iterasi-78

Algoritma Boruvka Metode *Contracted Graph*

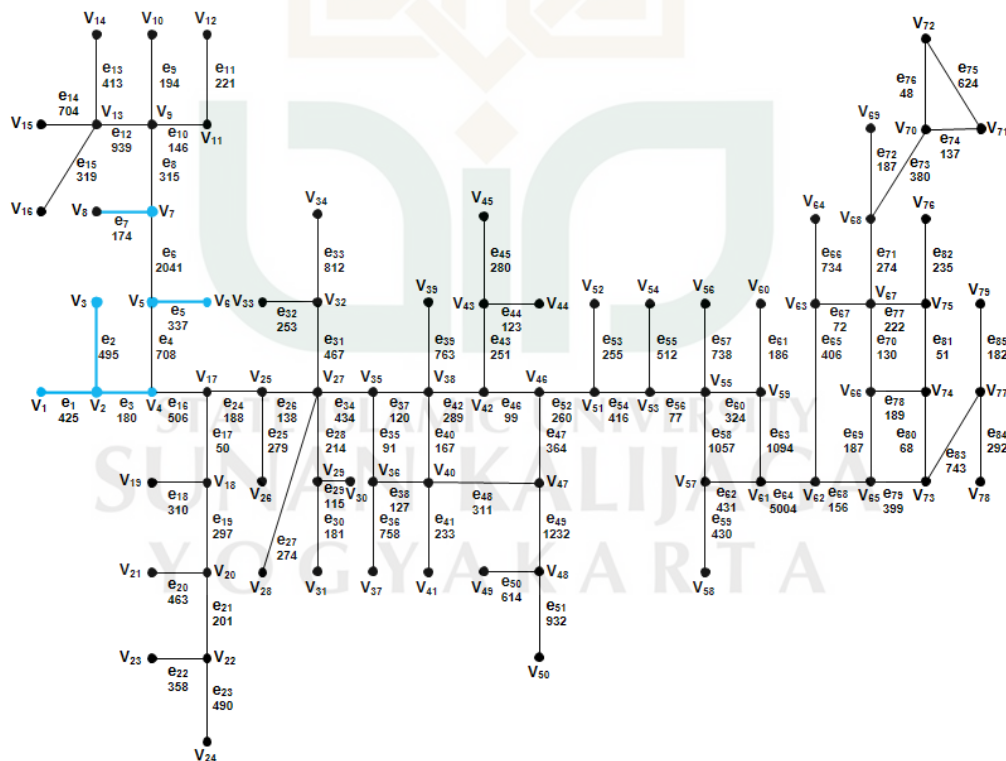
Iterasi-6 : Komponen v_6 hanya bersisian dengan sisi e_5 (337), maka dipilih sisi e_5 sebagai sisi berbobot minimum.

T	e_1, e_3, e_2, e_5
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



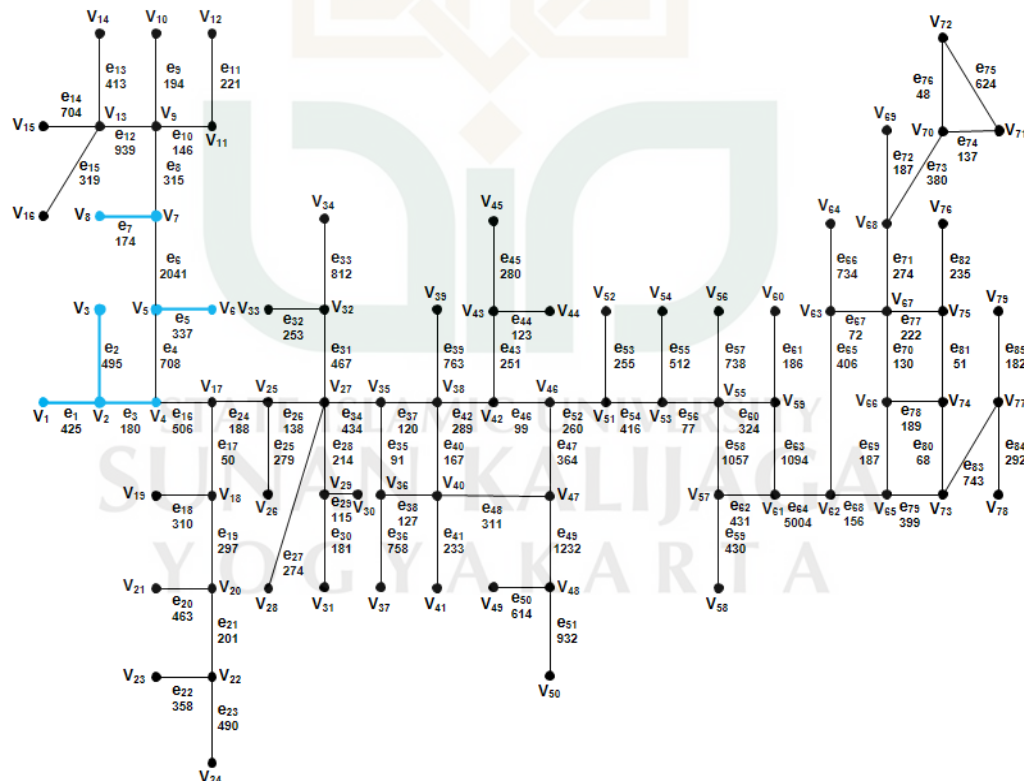
Iterasi-7 : Komponen v_7 bersisian dengan sisi e_6 (2041), e_7 (174), dan e_8 (315), maka dipilih sisi e_7 sebagai sisi berbobot minimum.

T	e_1, e_3, e_2, e_5, e_7
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



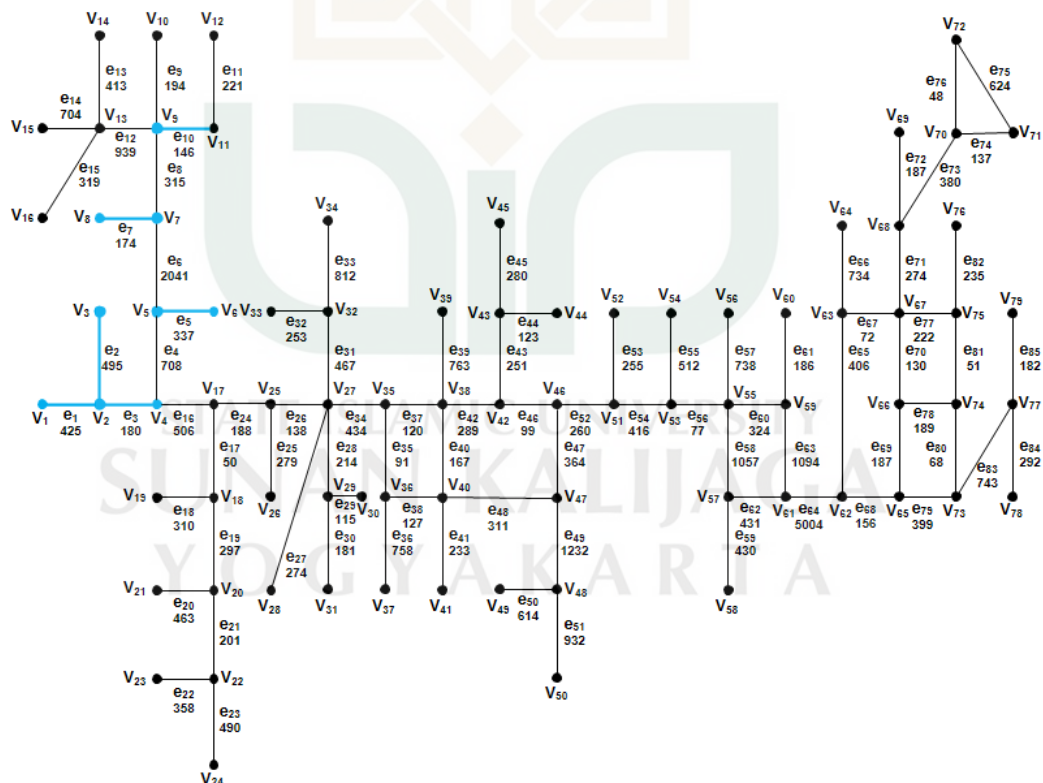
Iterasi-8 : Komponen v_8 hanya bersisian dengan sisi e_7 (174), maka dipilih sisi e_7 sebagai sisi berbobot minimum.

T	e_1, e_3, e_2, e_5, e_7
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



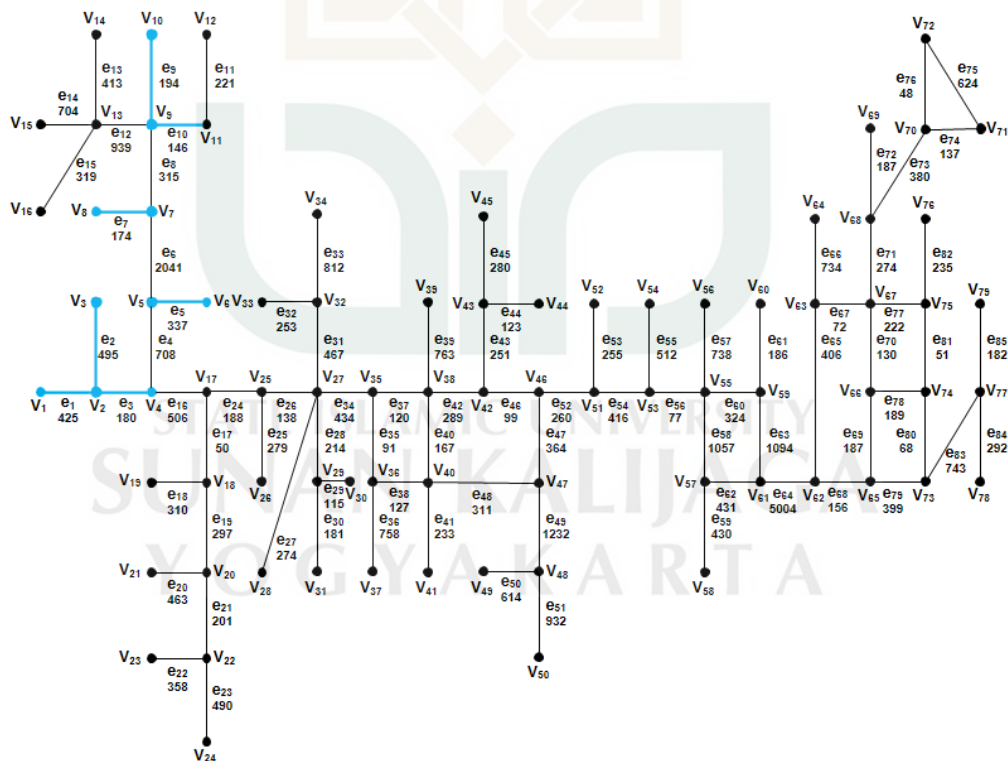
Iterasi-9 : Komponen v_9 bersisian dengan sisi e_8 (315), e_9 (194), e_{10} (146), dan e_{12} (939),
maka dipilih sisi e_{10} sebagai sisi berbobot minimum.

<i>T</i>	$e_1, e_3, e_2, e_5, e_7, e_{10}$
<i>Comp</i>	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



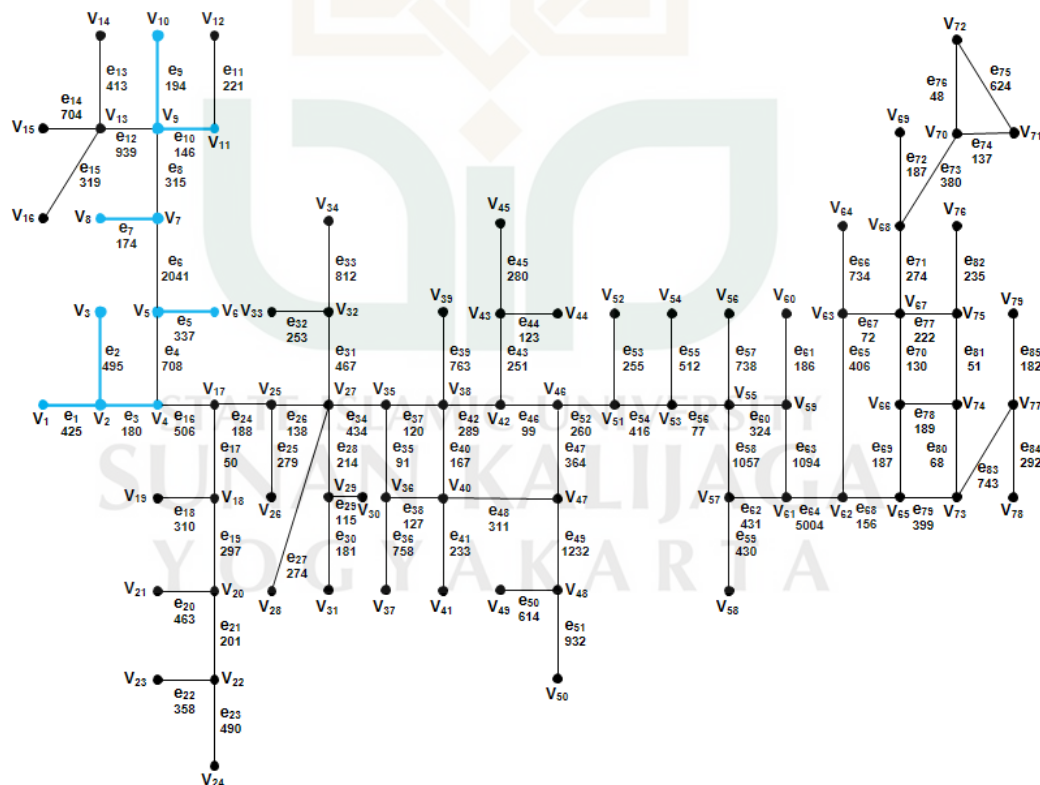
Iterasi-10 : Komponen v_{10} hanya bersisian dengan sisi e_9 (194), maka dipilih sisi e_9 sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



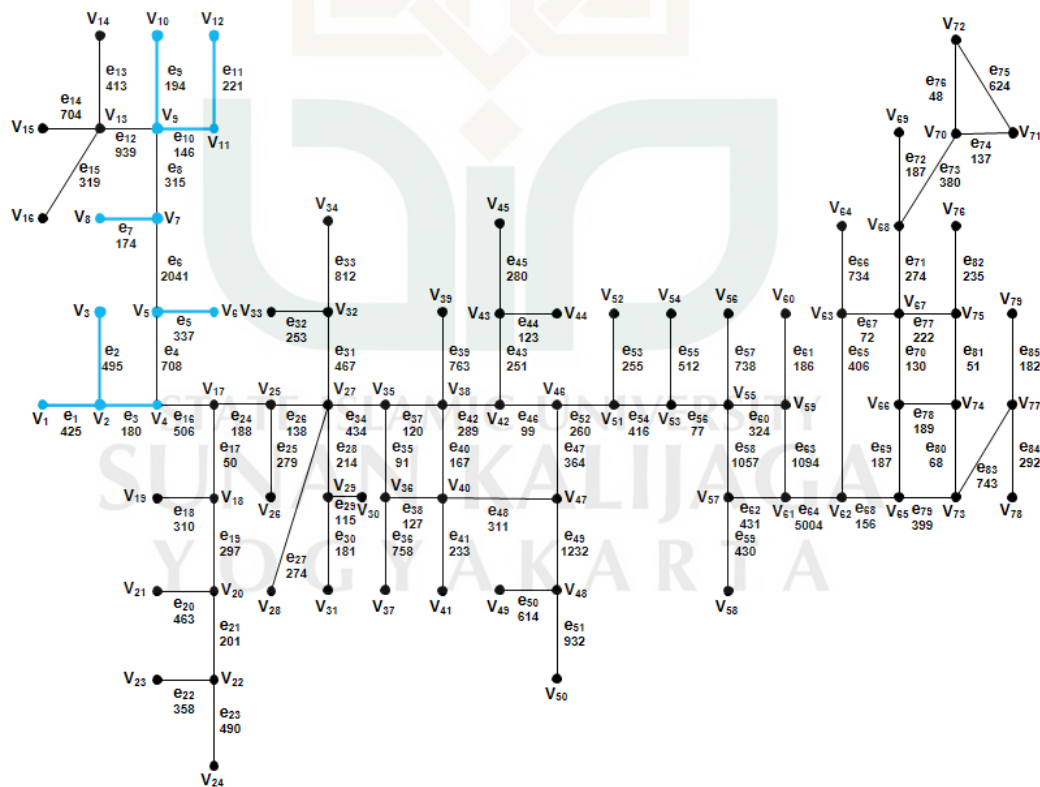
Iterasi-11 : Komponen v_{11} bersisian dengan sisi e_{10} (146), dan e_{11} (221), maka dipilih sisi e_{10} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



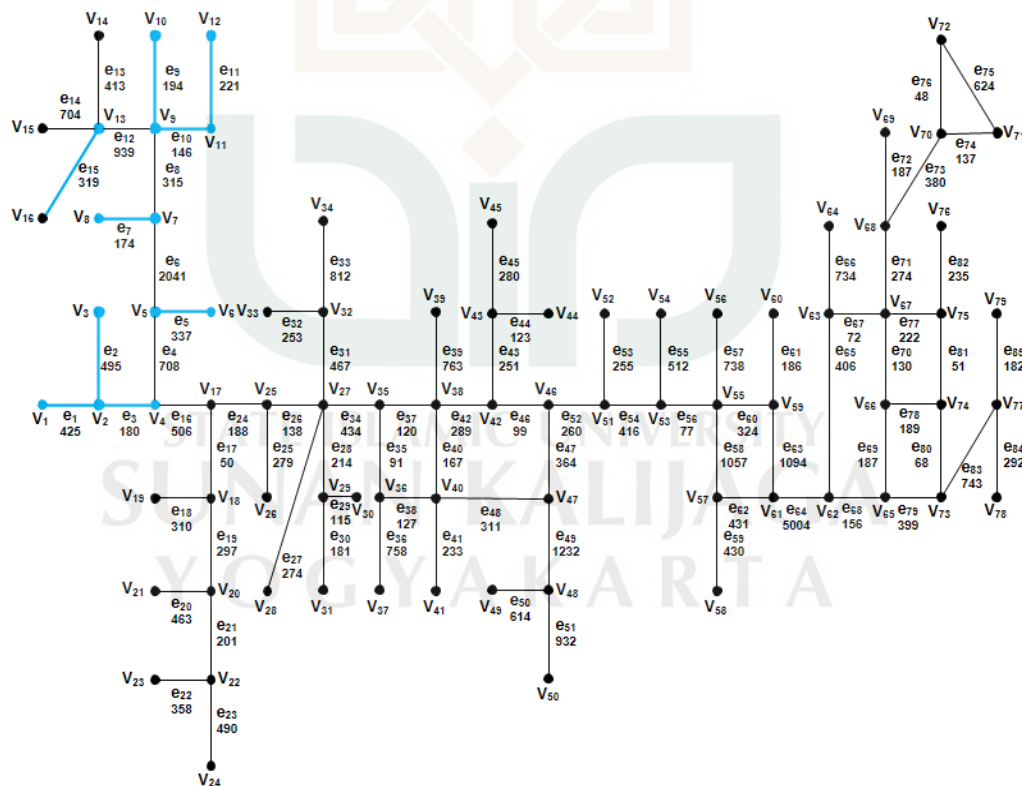
Iterasi-12 : Komponen v_{12} hanya bersisian dengan sisi e_{11} (221), maka dipilih sisi e_{11} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



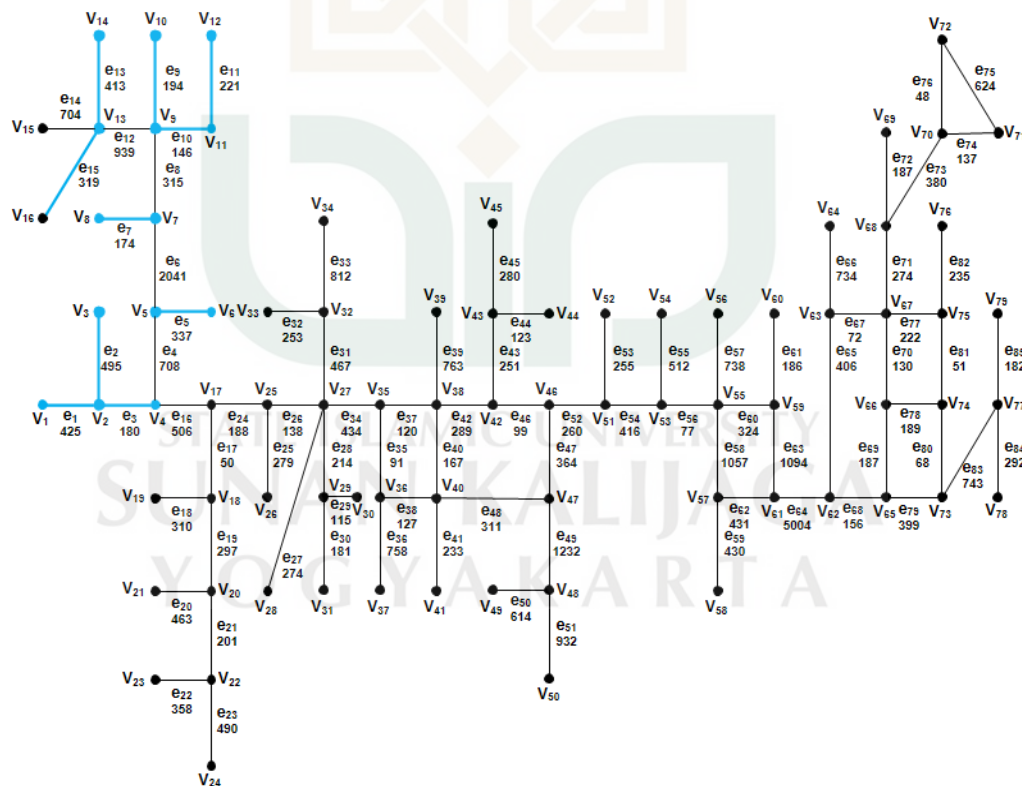
Iterasi-13 : Komponen v_{13} bersisian dengan sisi e_{12} (939), e_{13} (413), e_{14} (704), dan e_{15} (319),
maka dipilih sisi e_{15} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



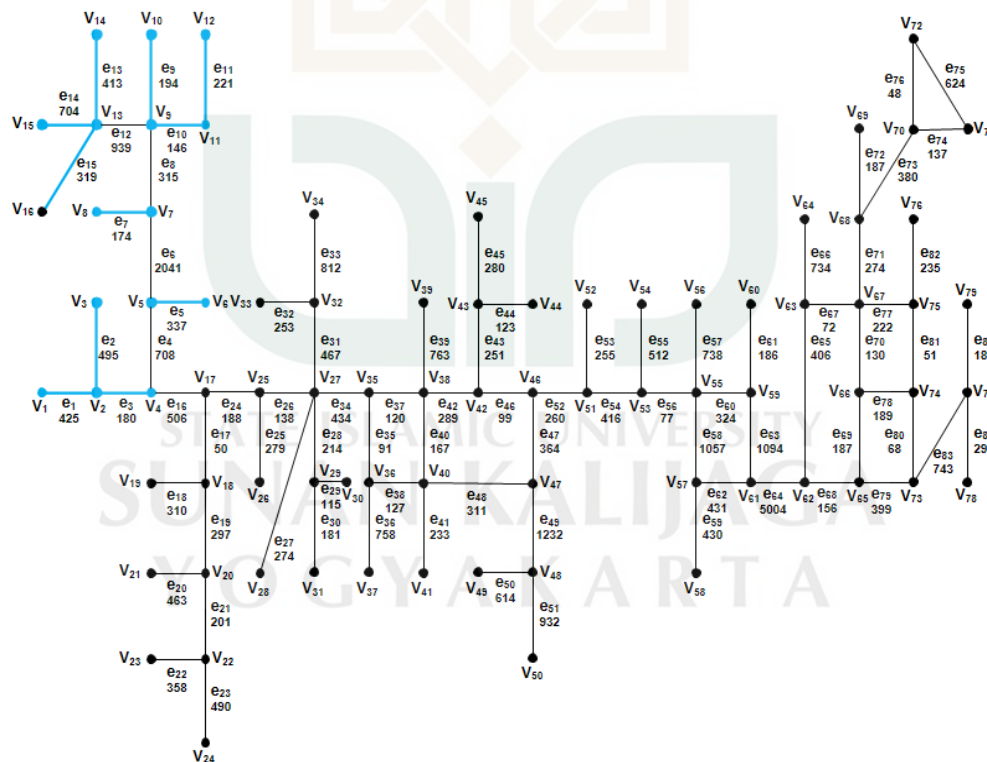
Iterasi-14 : Komponen v_{14} hanya bersisian dengan sisi e_{13} (413), maka dipilih sisi e_{13} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



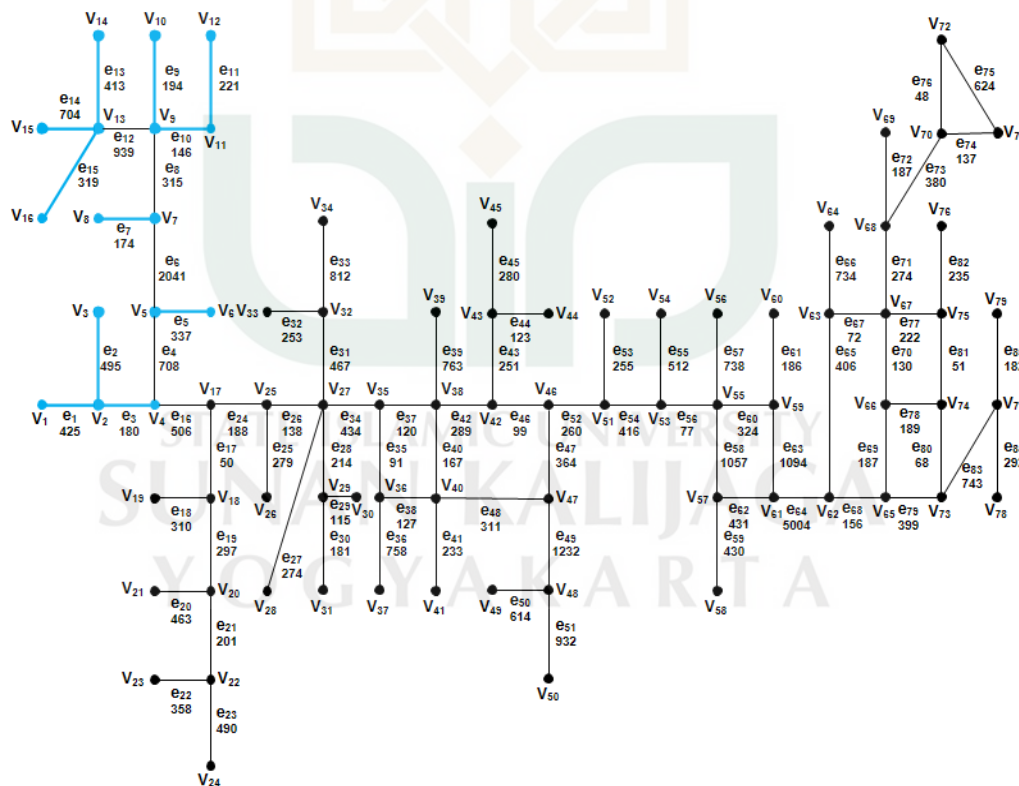
Iterasi-15 : Komponen v_{15} hanya bersisian dengan sisi e_{14} (704), maka dipilih sisi e_{14} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



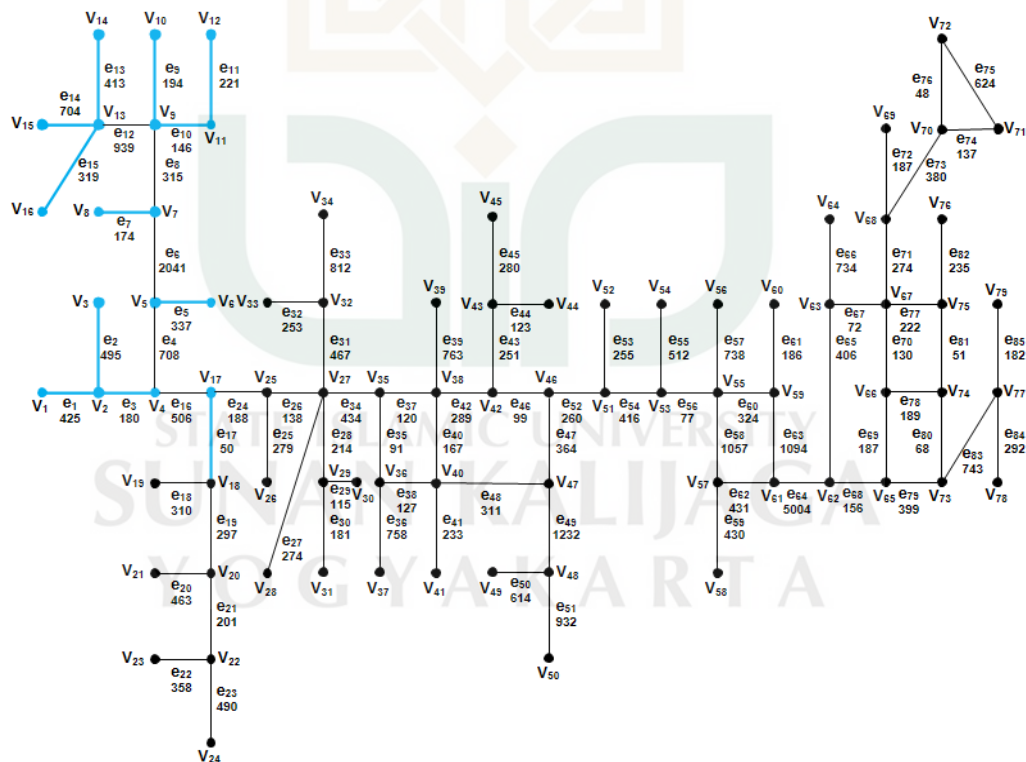
Iterasi-16 : Komponen v_{16} hanya bersisian dengan sisi e_{15} (319), maka dipilih sisi e_{15} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



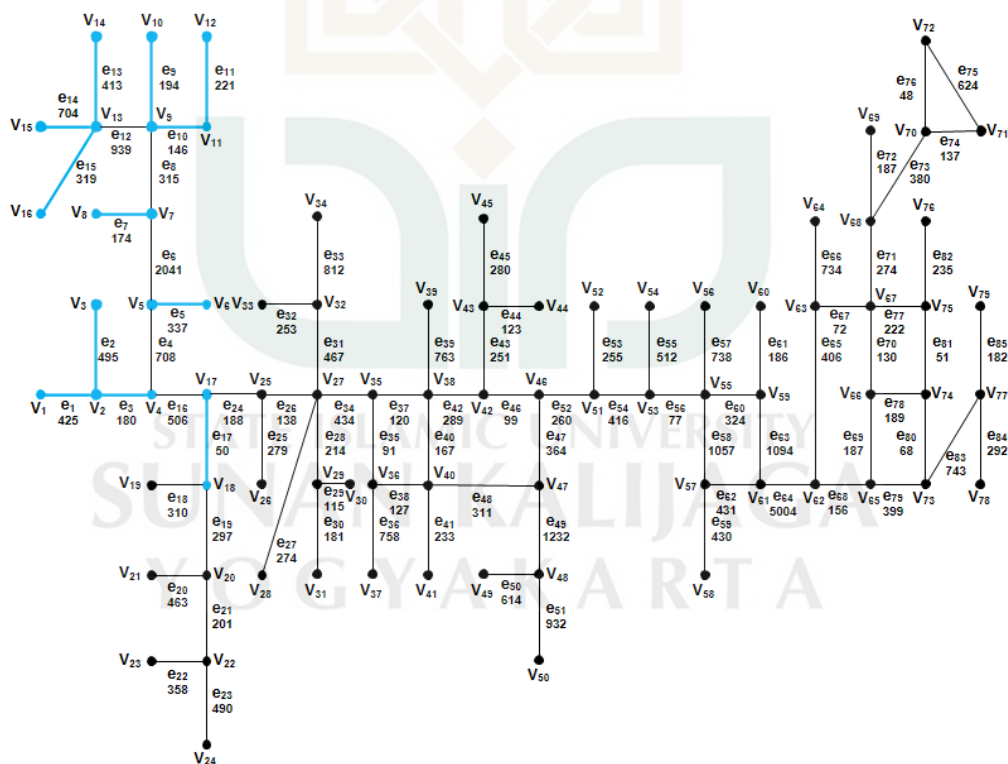
Iterasi-17 : Komponen v_{17} bersisian dengan sisi e_{16} (506), e_{17} (50), dan e_{24} (188), maka dipilih sisi e_{17} sebagai sisi berbobot minimum.

<i>T</i>	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}$
<i>Comp</i>	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



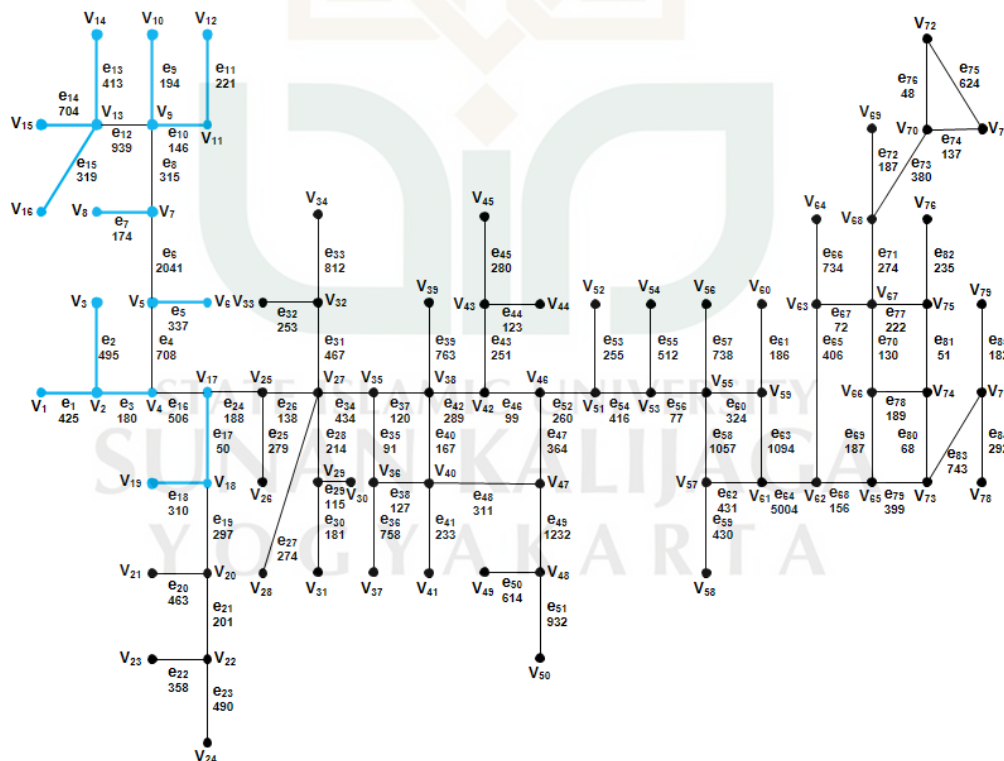
Iterasi-18 : Komponen v_{18} bersisian dengan sisi e_{17} (50), e_{18} (310), dan e_{19} (297), maka dipilih sisi e_{17} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



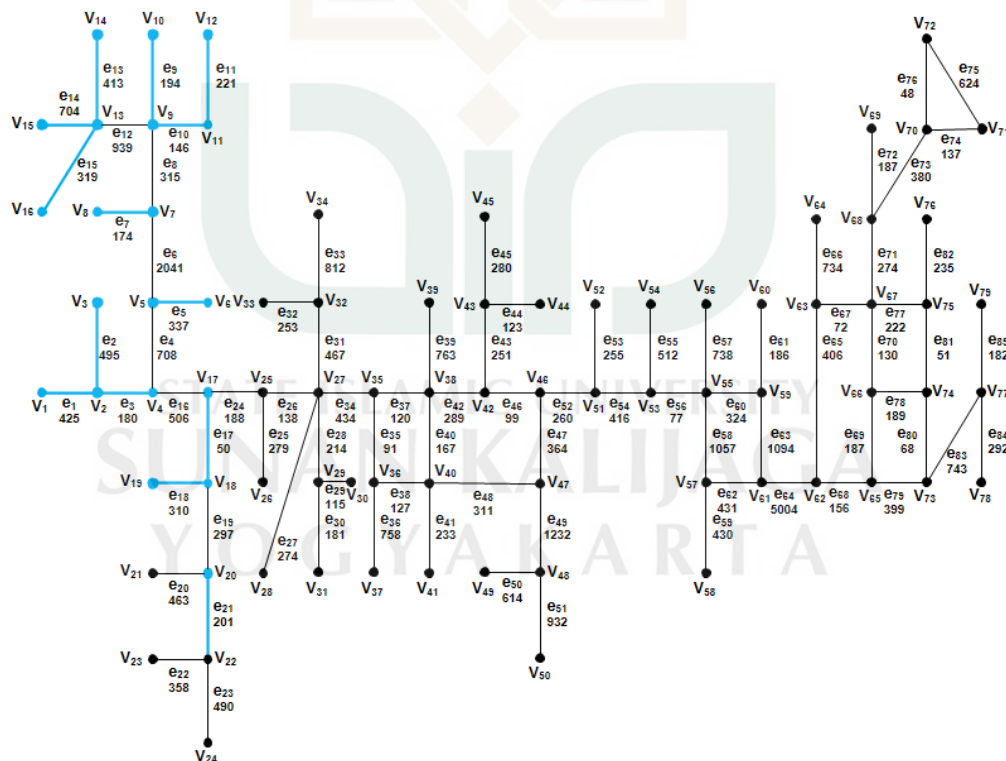
Iterasi-19 : Komponen v_{19} hanya bersisian dengan sisi e_{18} (310), maka dipilih sisi e_{18} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



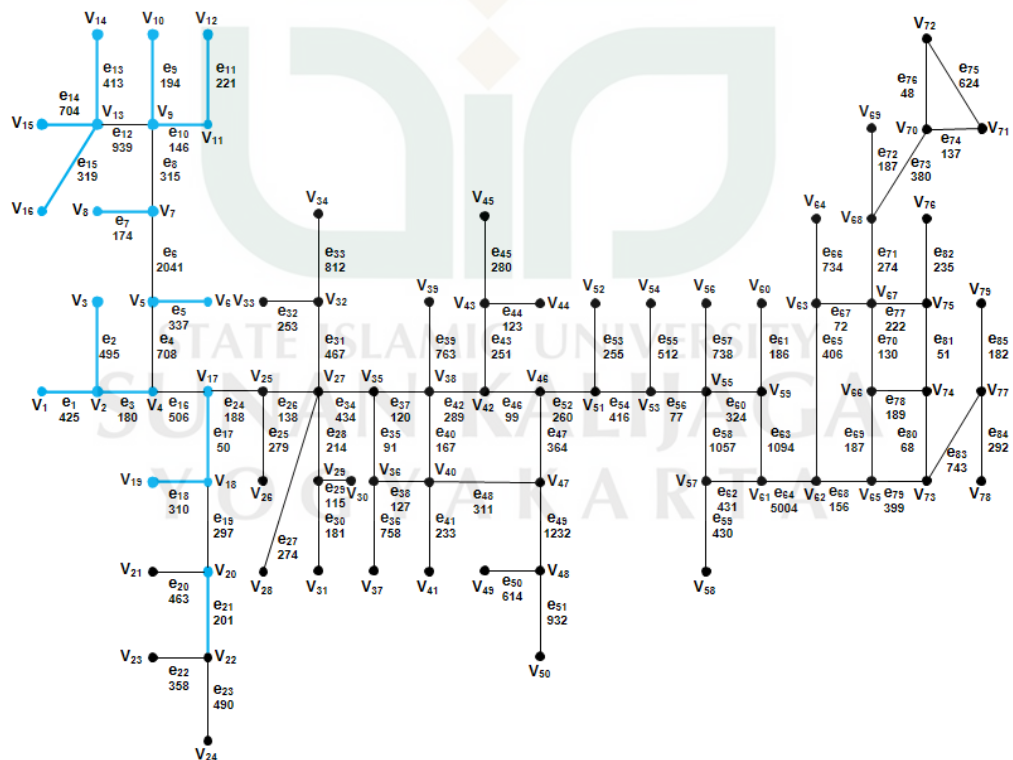
Iterasi-20 : Komponen v_{20} bersisian dengan sisi e_{19} (297), e_{20} (463), dan e_{21} (201), maka dipilih sisi e_{21} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



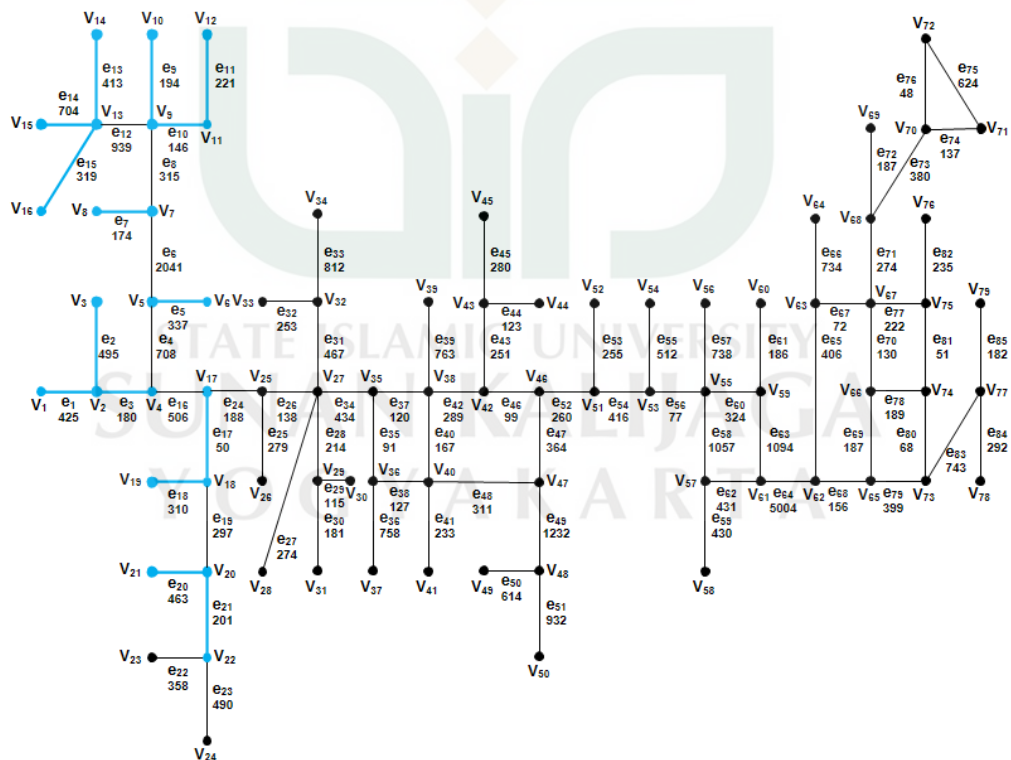
Iterasi-21 : Komponen v_{21} hanya bersisian dengan sisi e_{20} (463), maka dipilih sisi e_{20} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



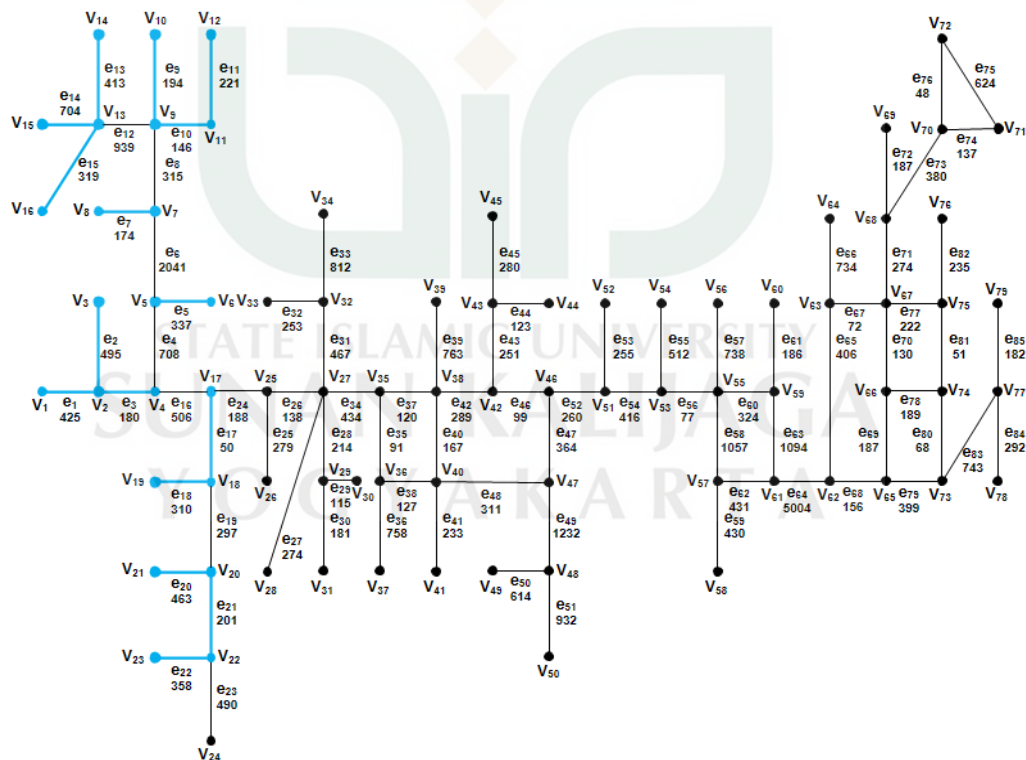
Iterasi-22 : Komponen v_{22} bersisian dengan sisi e_{21} (201), e_{22} (358), dan e_{23} (490),
maka dipilih sisi e_{21} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



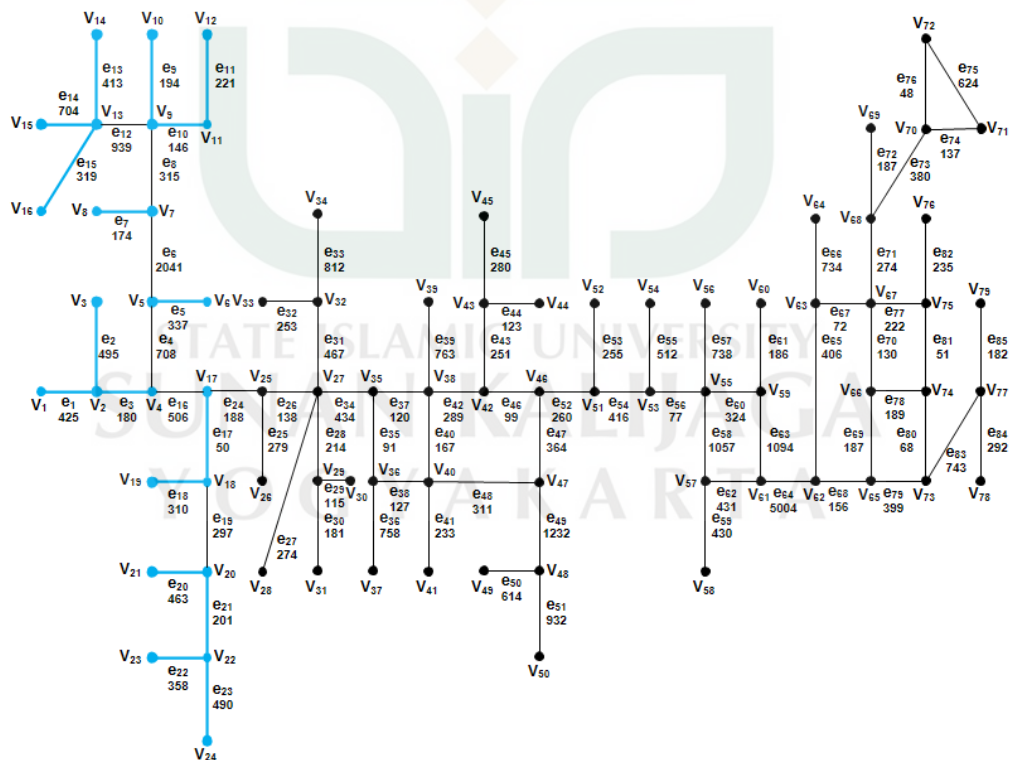
Iterasi-23 : Komponen v_{23} hanya bersisian dengan sisi e_{22} (358), maka dipilih sisi e_{22} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



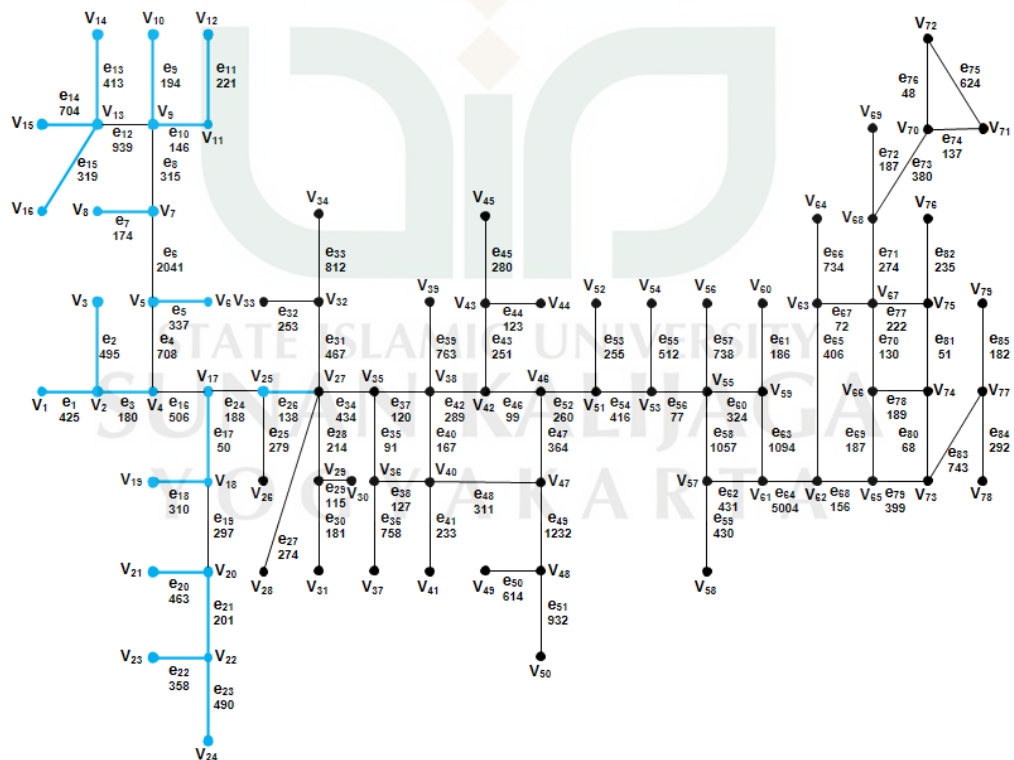
Iterasi-24 : Komponen v_{24} hanya bersisian dengan sisi e_{23} (490), maka dipilih sisi e_{23} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



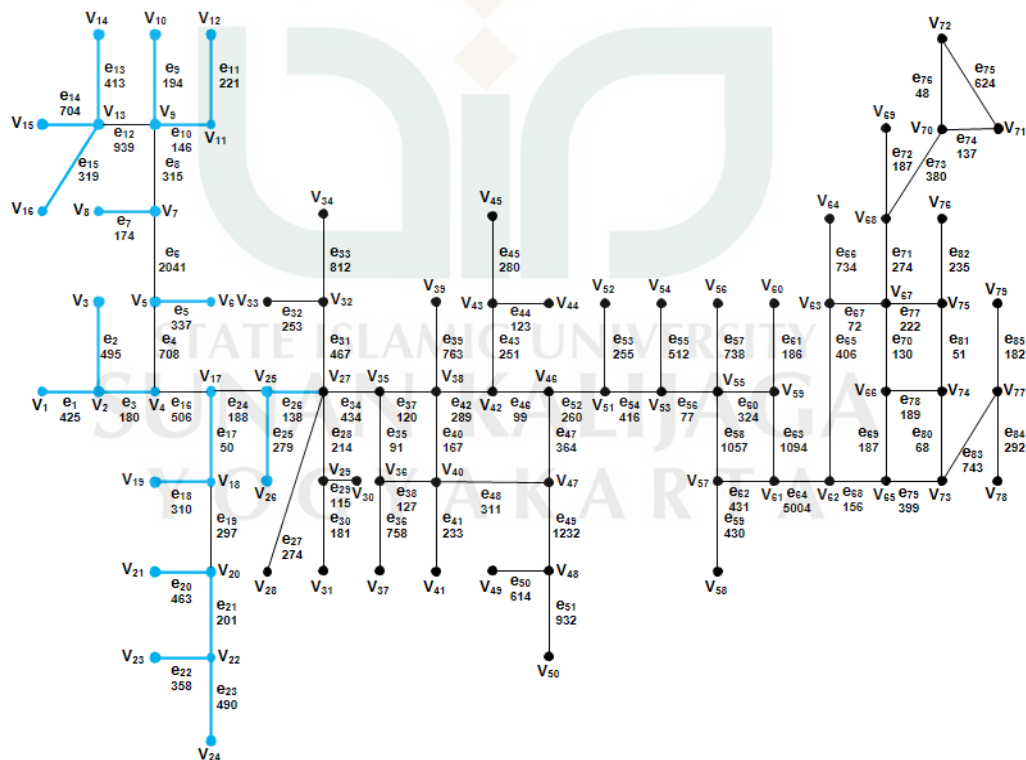
Iterasi-25 : Komponen v_{25} bersisian dengan sisi e_{24} (188), e_{25} (279), dan e_{26} (138),
maka dipilih sisi e_{26} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



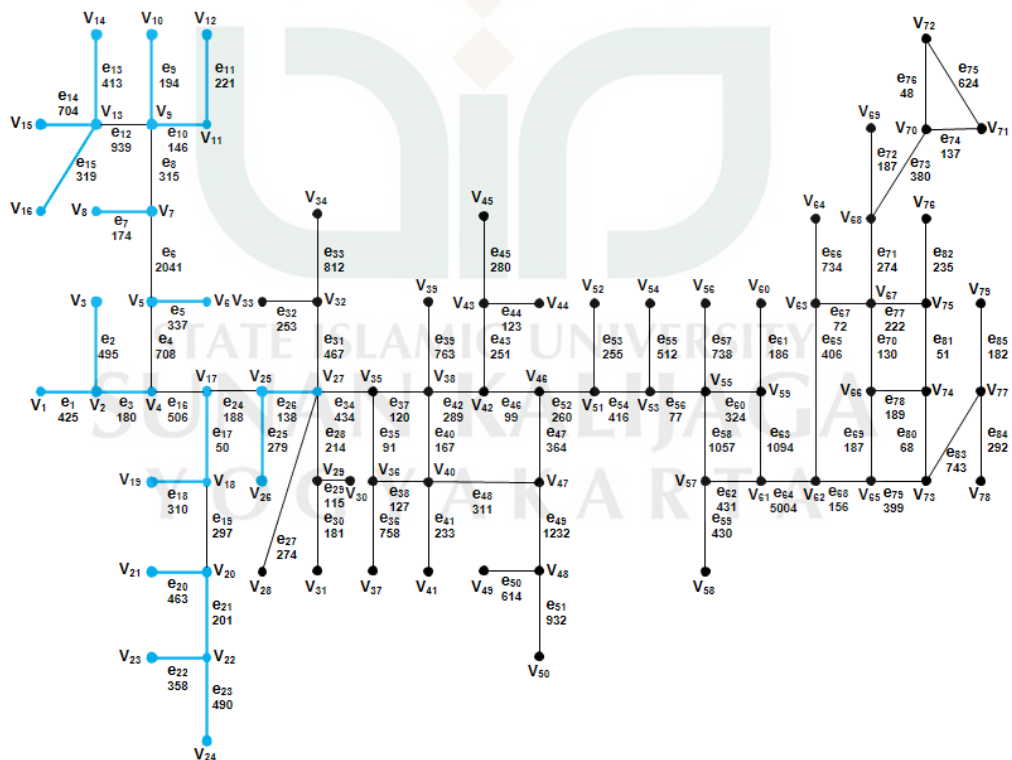
Iterasi-26 : Komponen v_{26} hanya bersisian dengan sisi e_{25} (279), maka dipilih sisi e_{25} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



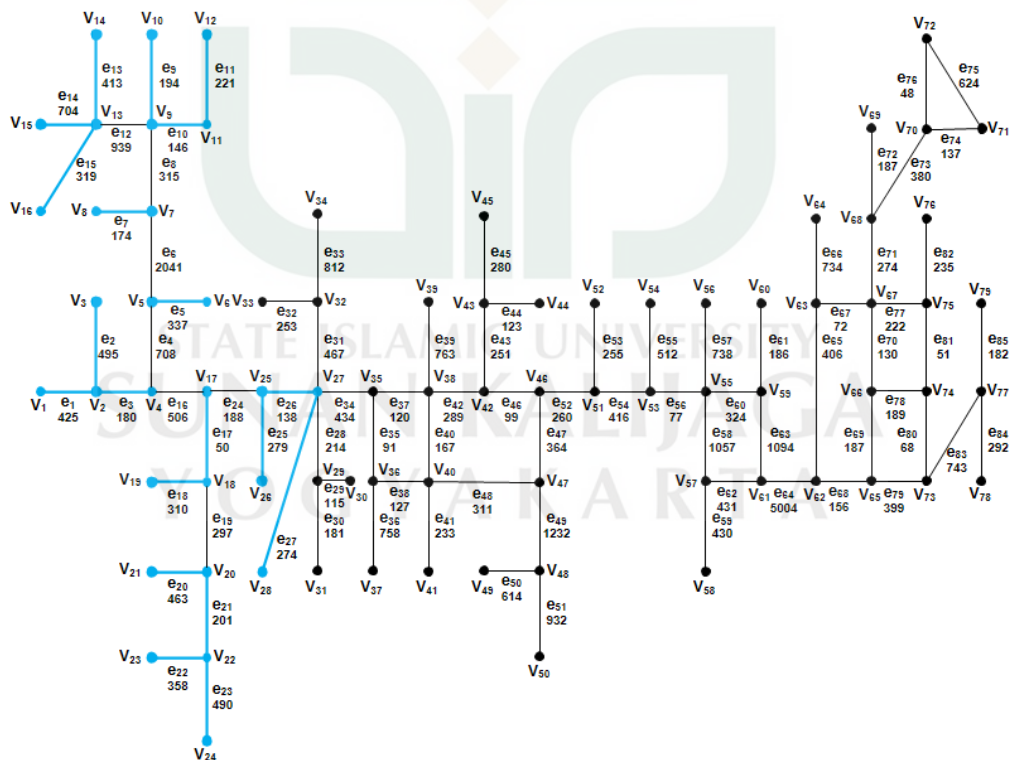
Iterasi-27 : Komponen v_{27} bersisian dengan sisi e_{26} (138), e_{27} (274), e_{28} (214), e_{31} (467), dan e_{34} (434), maka dipilih sisi e_{26} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



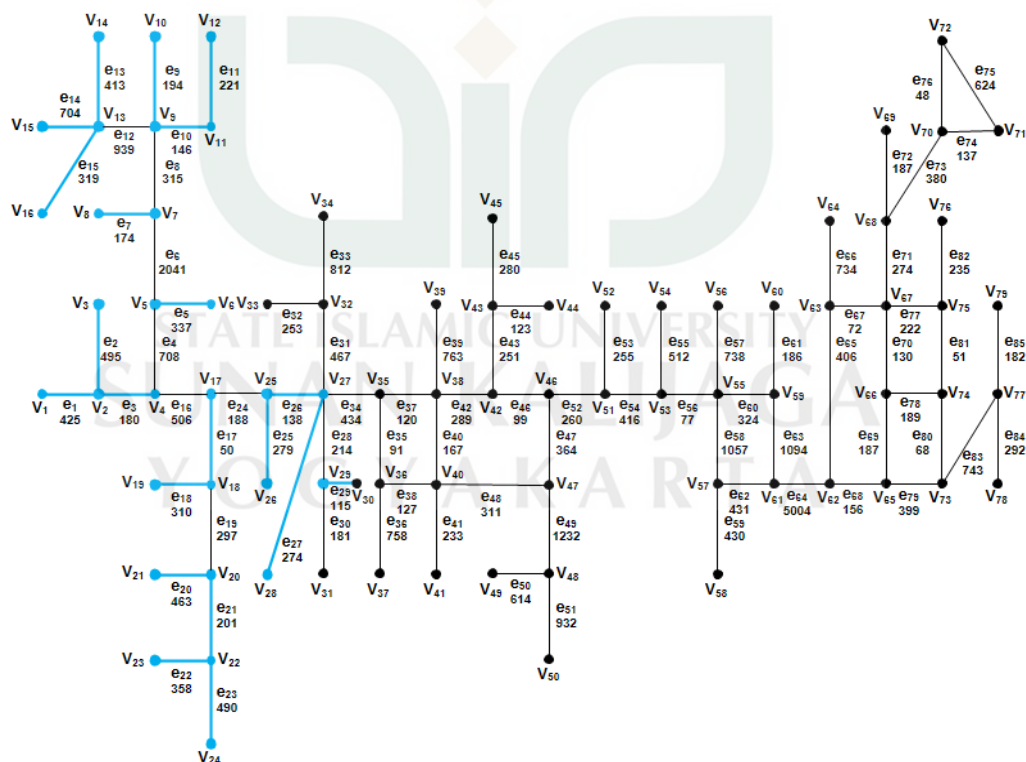
Iterasi-28 : Komponen v_{28} hanya bersisian dengan sisi e_{27} (274), maka dipilih sisi e_{27} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



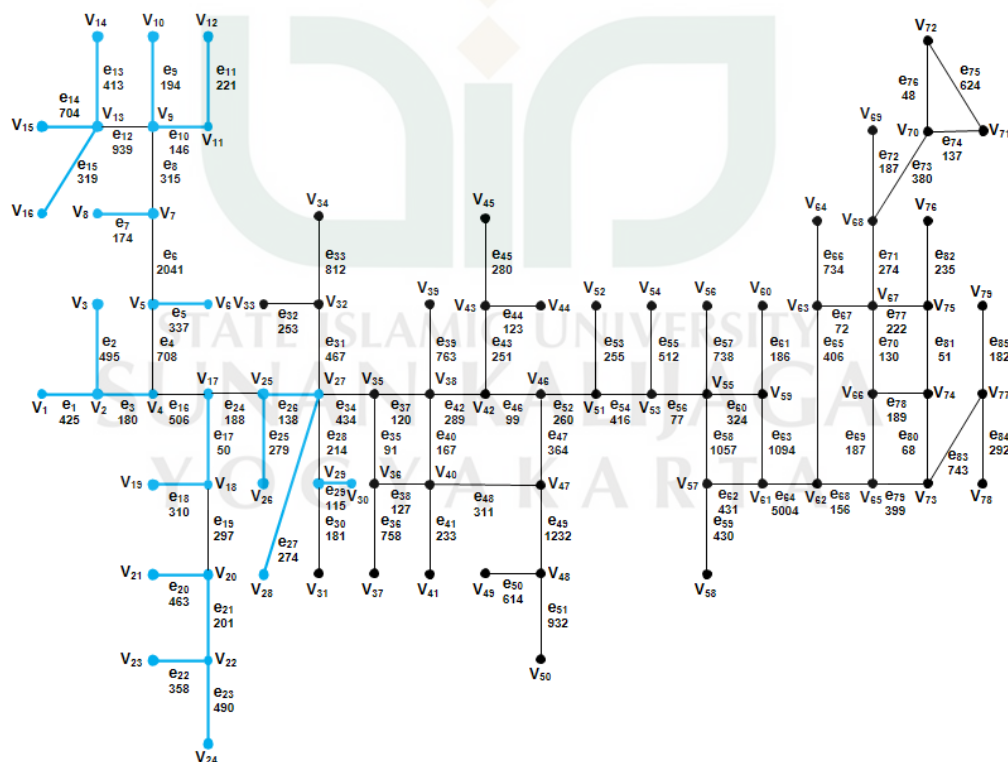
Iterasi-29 : Komponen v_{29} bersisian dengan sisi e_{28} (214), e_{29} (115), dan e_{30} (181),
maka dipilih sisi e_{29} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27},$ e_{29}
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



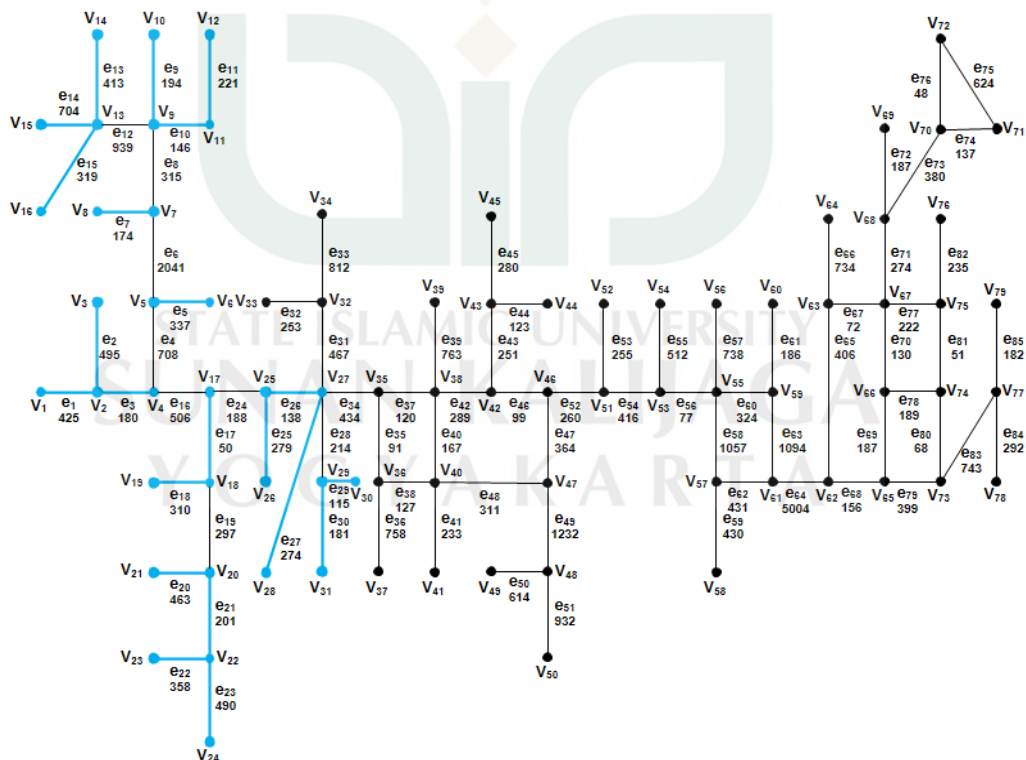
Iterasi-30 : Komponen v_{30} hanya bersisian dengan sisi e_{29} (115), maka dipilih sisi e_{29} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



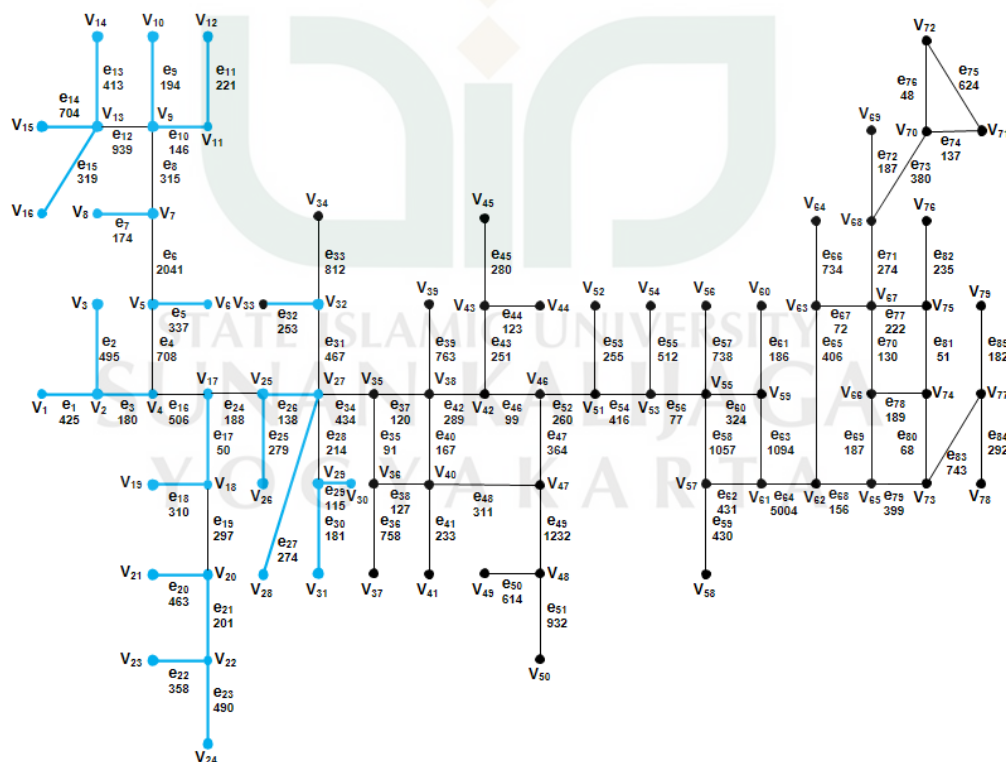
Iterasi-31 : Komponen v_{31} hanya bersisian dengan sisi e_{30} (181), maka dipilih sisi e_{30} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



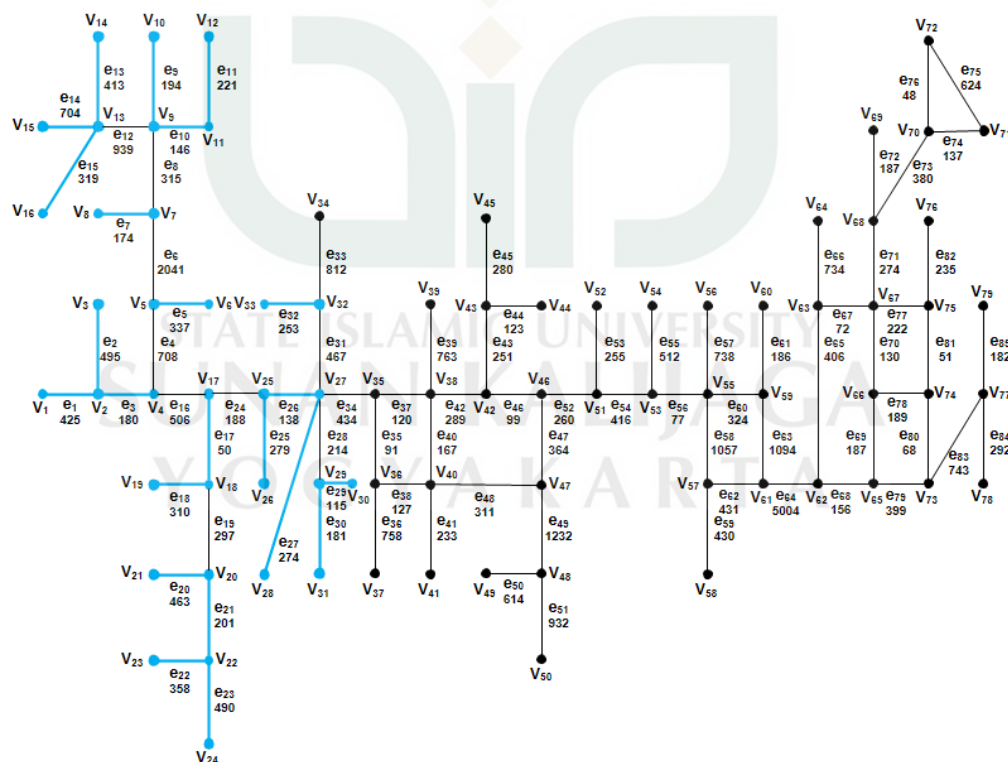
Iterasi-32 : Komponen v_{32} bersisian dengan sisi e_{31} (467), e_{32} (253), dan e_{33} (812), maka dipilih sisi e_{32} sebagai sisi berbobot minimum.

<i>T</i>	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}$
<i>Comp</i>	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



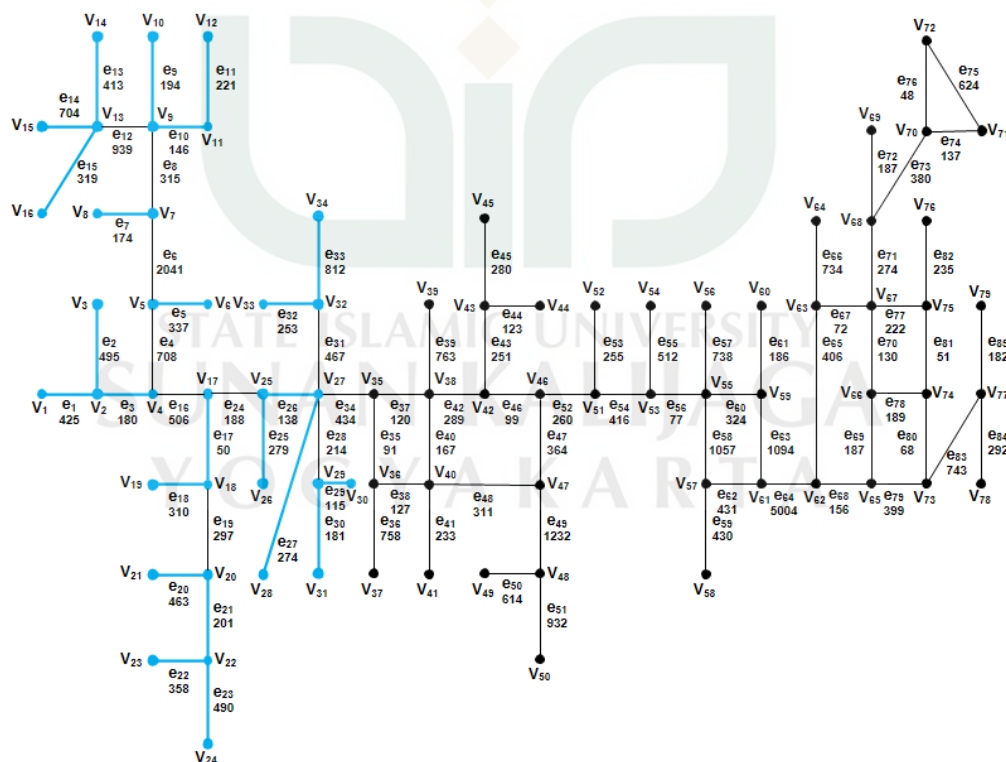
Iterasi-33 : Komponen v_{33} hanya bersisian dengan sisi e_{32} (253), maka dipilih sisi e_{32} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



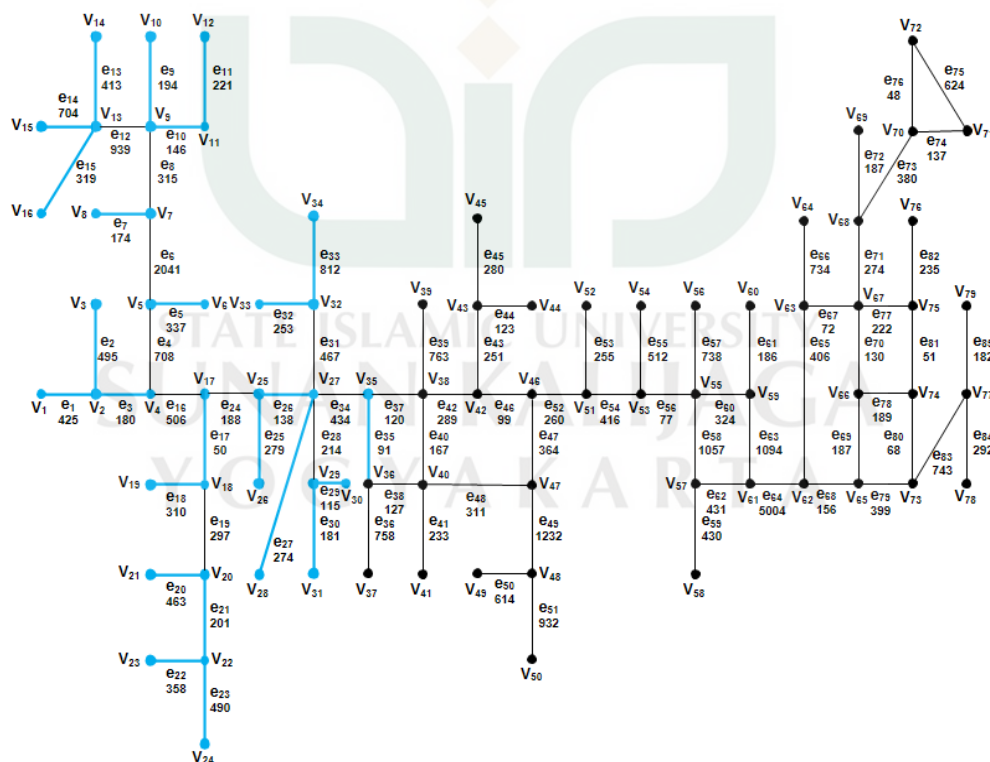
Iterasi-34 : Komponen v_{34} hanya bersisian dengan sisi e_{33} (812), maka dipilih sisi e_{33} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



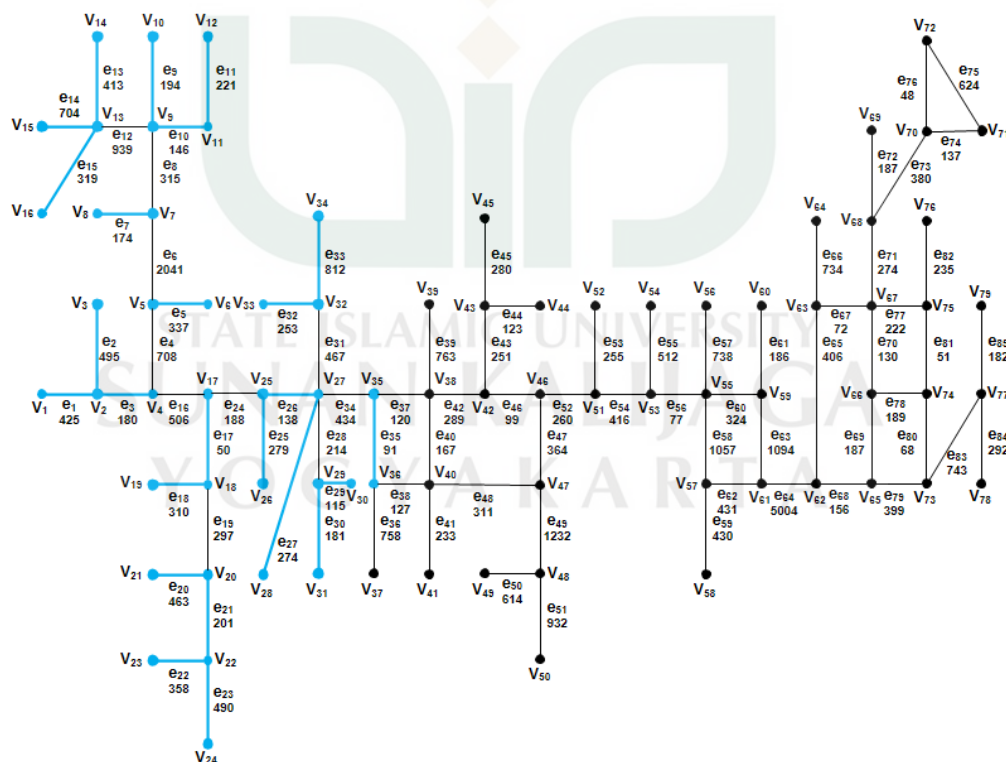
Iterasi-35 : Komponen v_{35} bersisian dengan sisi e_{34} (434), e_{35} (91), dan e_{37} (120), maka dipilih sisi e_{35} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



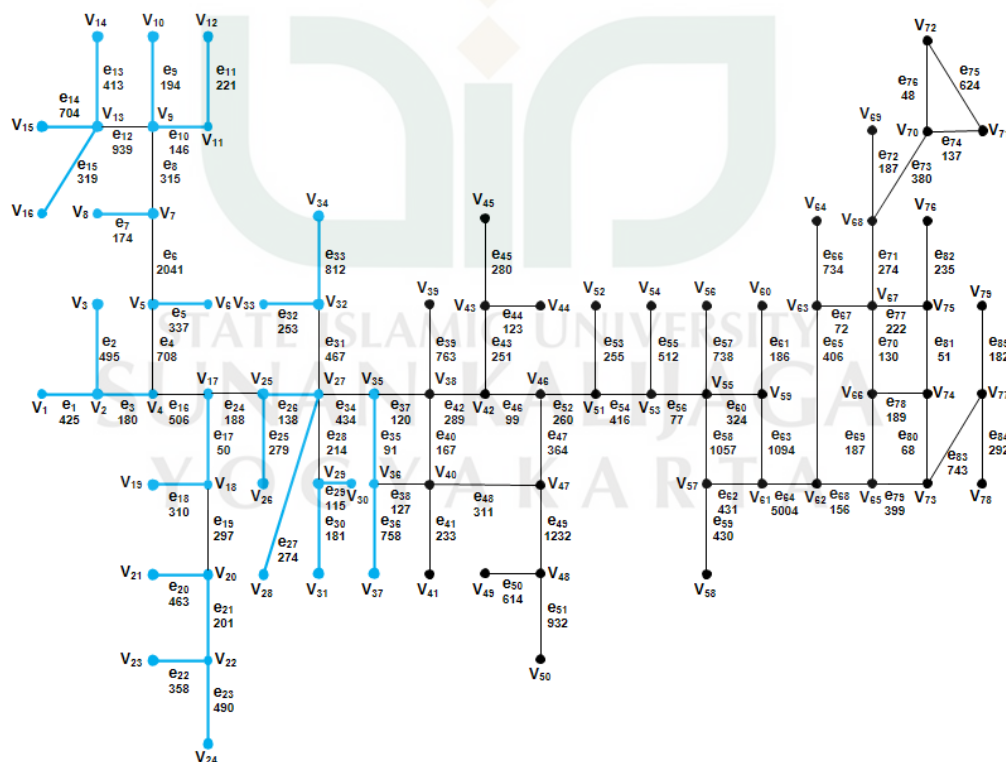
Iterasi-36 : Komponen v_{36} bersisian dengan sisi e_{35} (91), e_{36} (758), dan e_{38} (127), maka dipilih sisi e_{35} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



Iterasi-37 : Komponen v_{37} hanya bersisian dengan sisi e_{36} (758), maka dipilih sisi e_{36} sebagai sisi berbobot minimum.

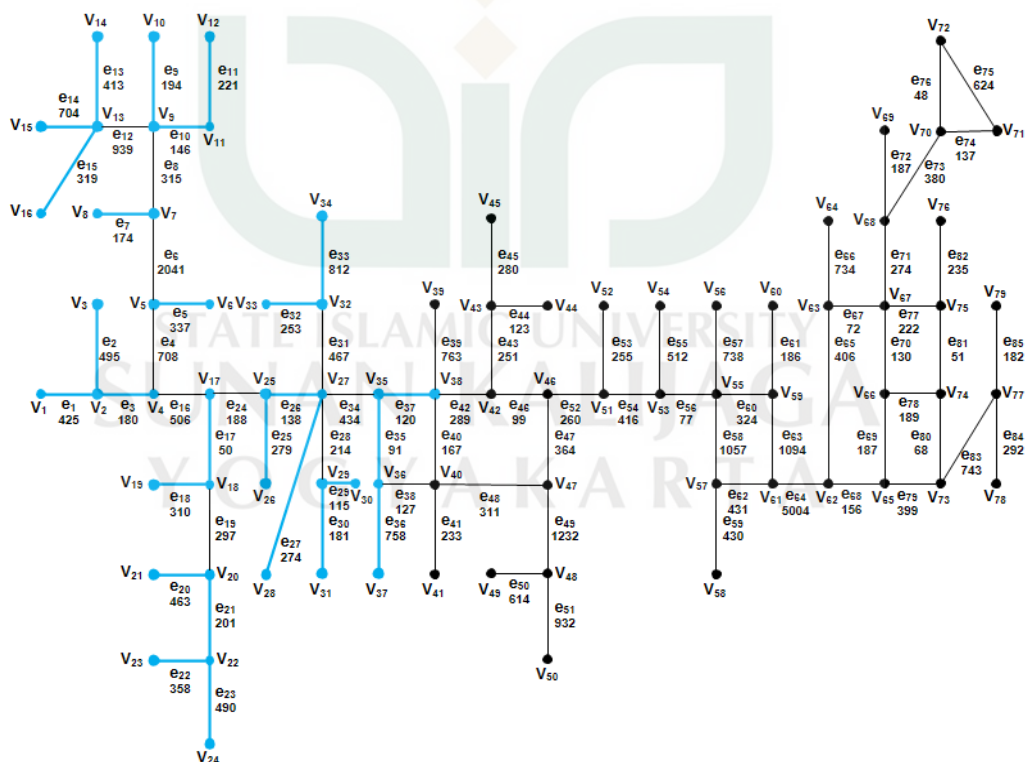
T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



Iterasi-38 : Komponen v_{38} bersisian dengan sisi e_{37} (120), e_{39} (763), e_{40} (167), dan e_{42} (289),

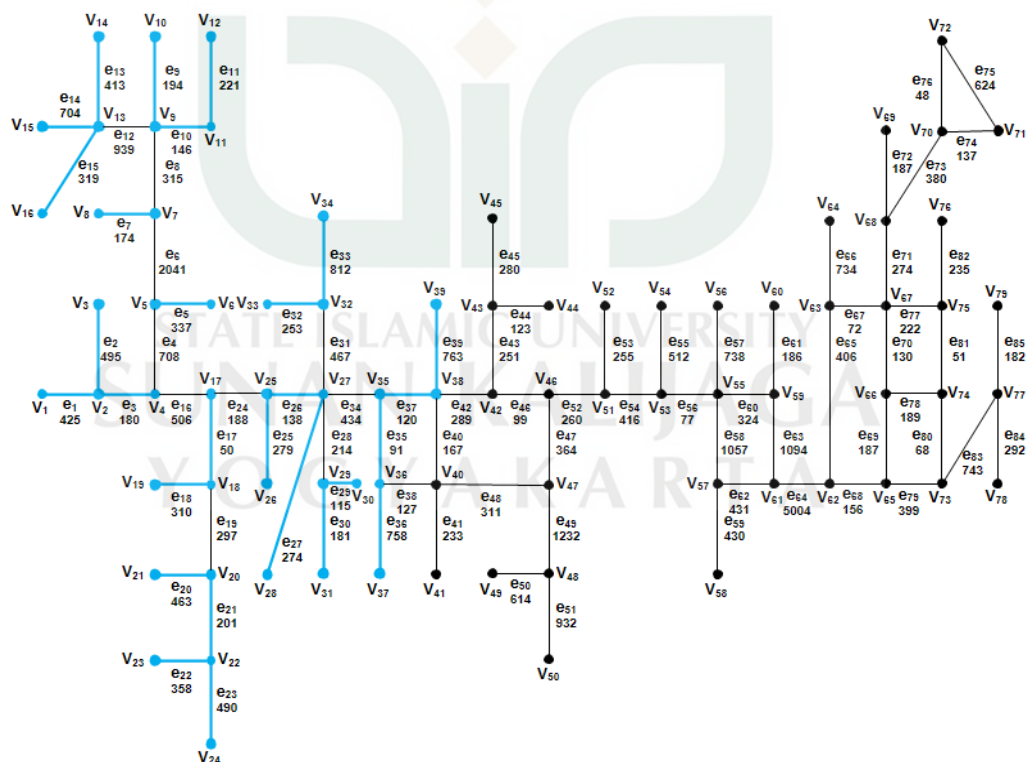
maka dipilih sisi e_{37} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27},$ $e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



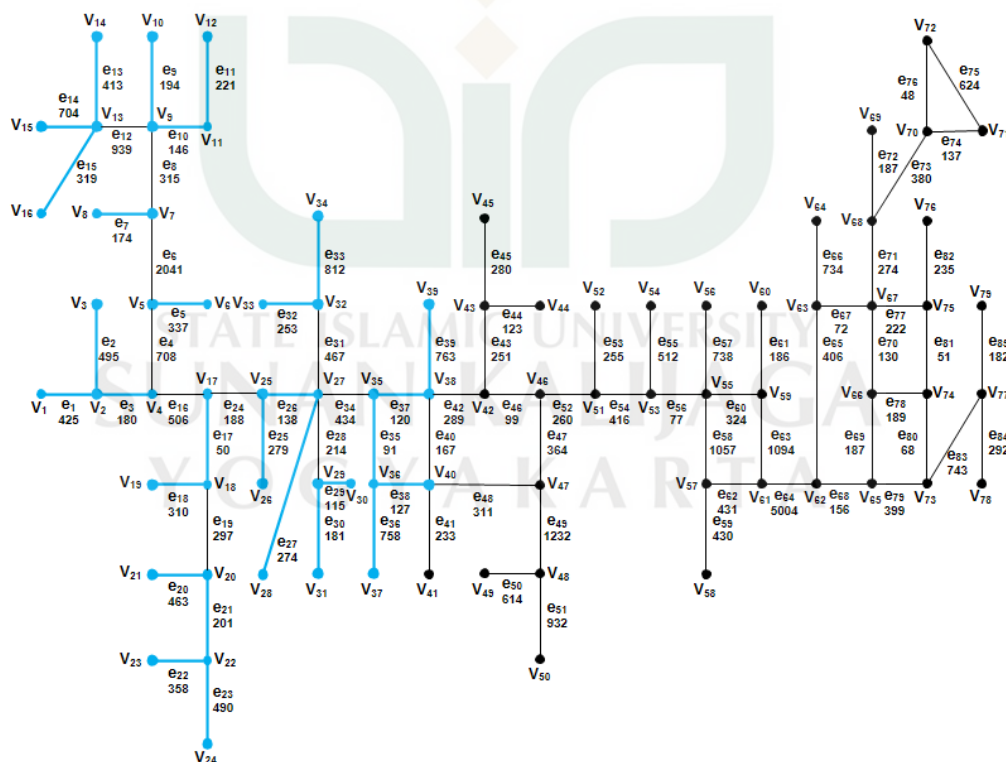
Iterasi-39 : Komponen v_{39} hanya bersisian dengan sisi e_{39} (763), maka dipilih sisi e_{39} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



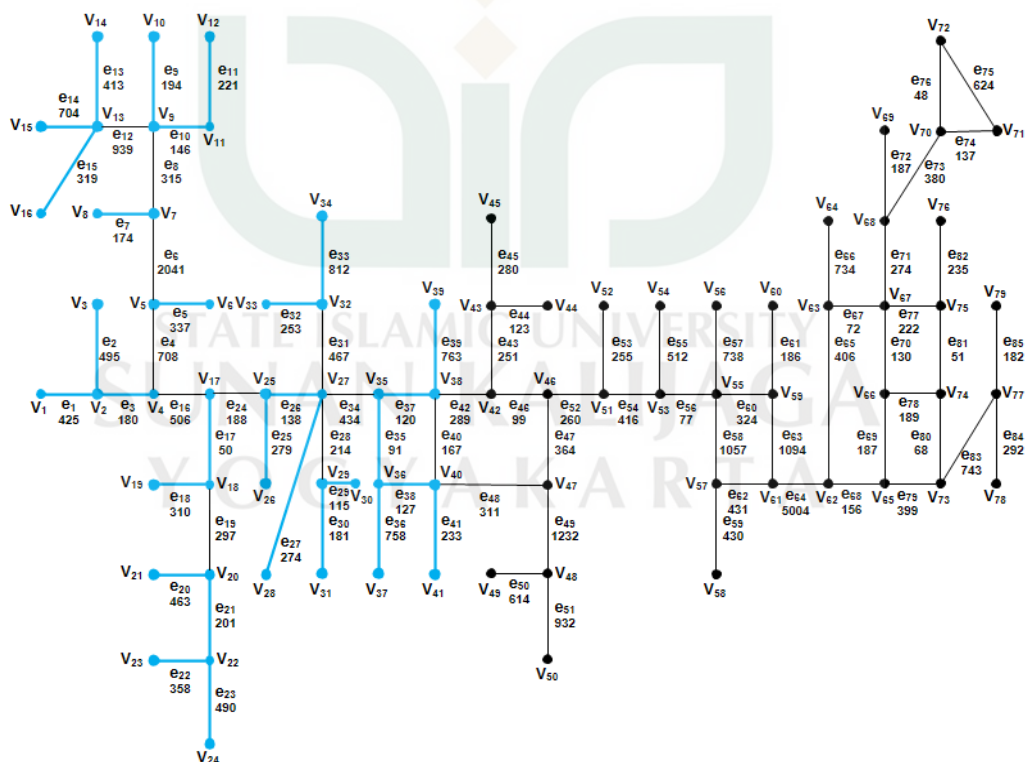
Iterasi-40 : Komponen v_{40} bersisian dengan sisi e_{38} (127), e_{40} (167), e_{41} (233), dan e_{48} (311),
maka dipilih sisi e_{38} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27},$ $e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\},$ $\{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\},$ $\{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\},$ $\{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\},$ $\{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\},$ $\{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\},$ $\{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\},$ $\{v_{79}\}$



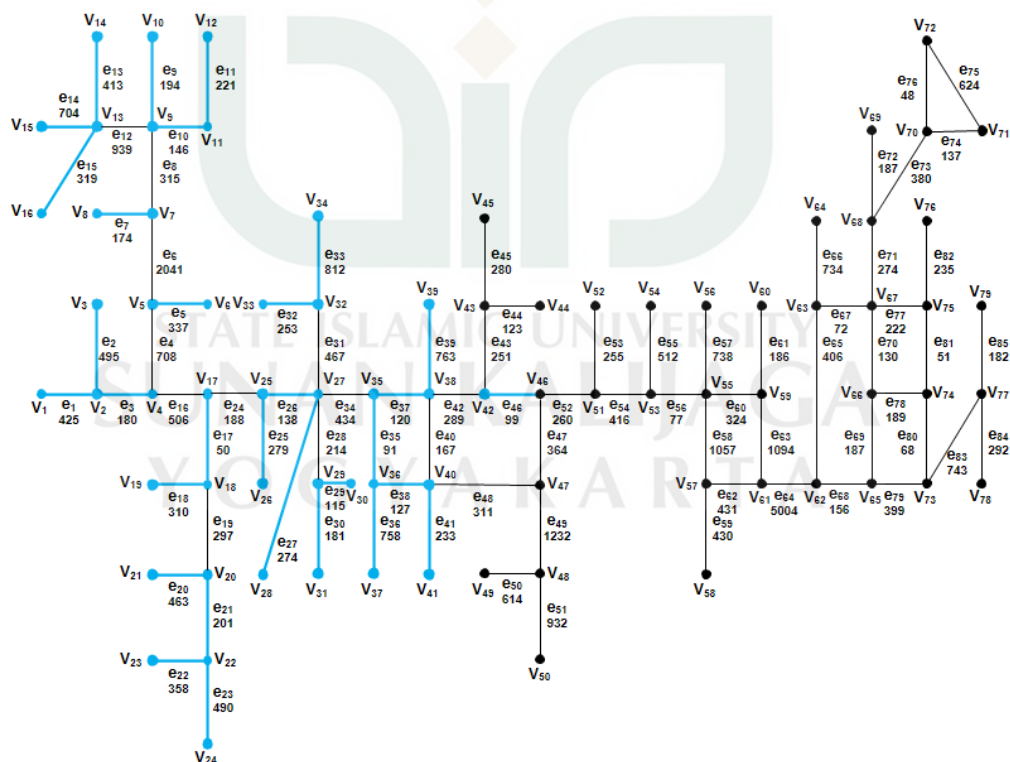
Iterasi-41 : Komponen v_{41} hanya bersisian dengan sisi e_{41} (233), maka dipilih sisi e_{41} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



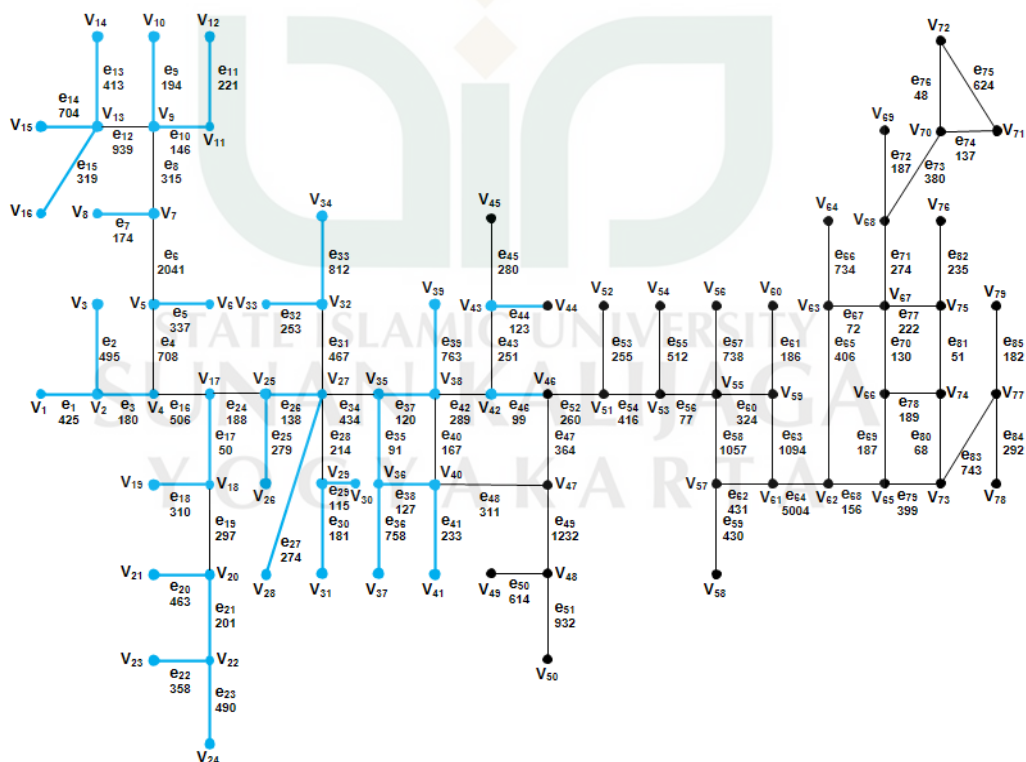
Iterasi-42 : Komponen v_{42} bersisian dengan sisi e_{42} (289), e_{43} (251), dan e_{46} (99), maka dipilih sisi e_{46} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



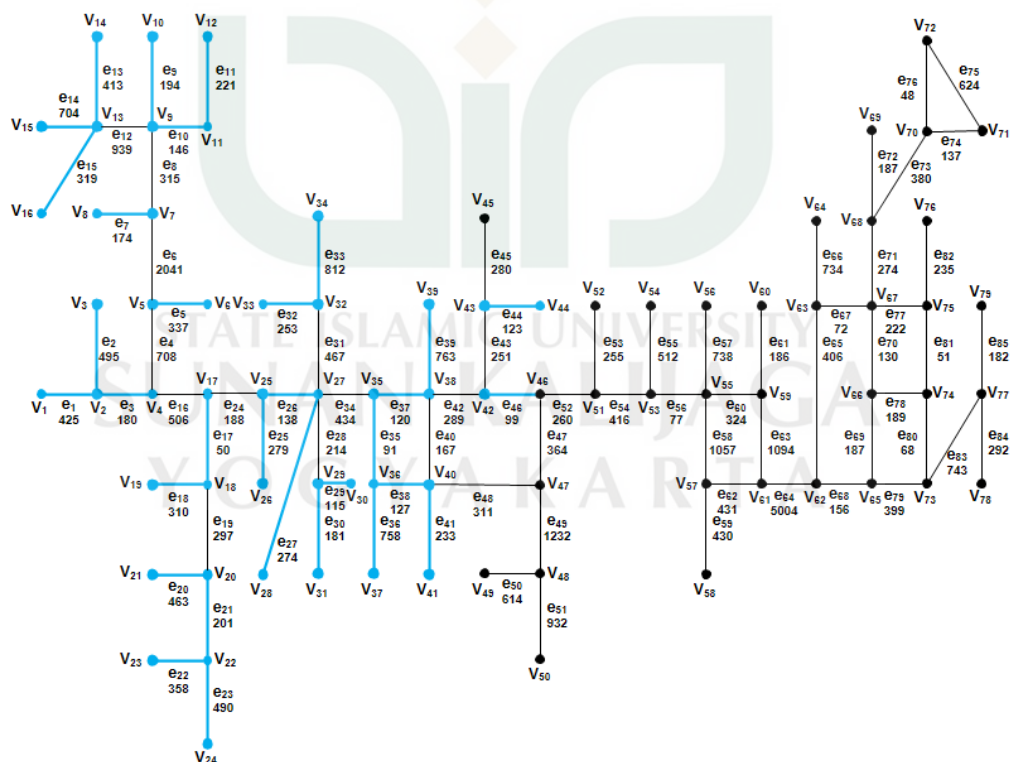
Iterasi-43 : Komponen v_{432} bersisian dengan sisi e_{43} (251), e_{44} (123), dan e_{45} (280), maka dipilih sisi e_{44} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



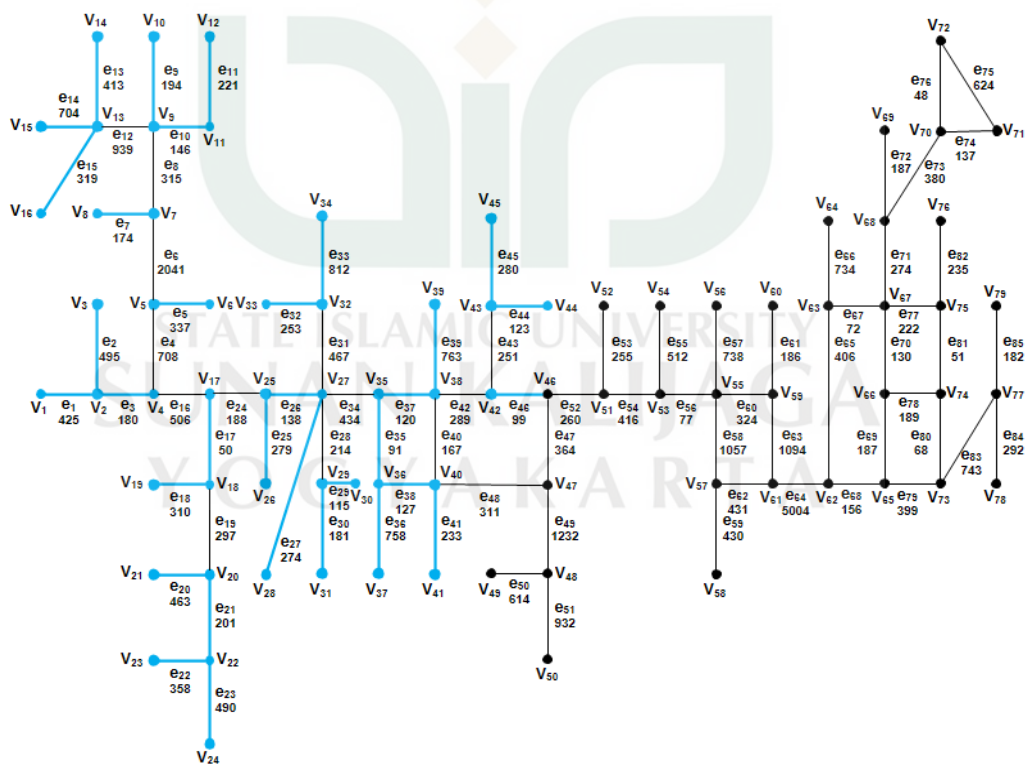
Iterasi-44 : Komponen v_{44} hanya bersisian dengan sisi e_{44} (123), maka dipilih sisi e_{44} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



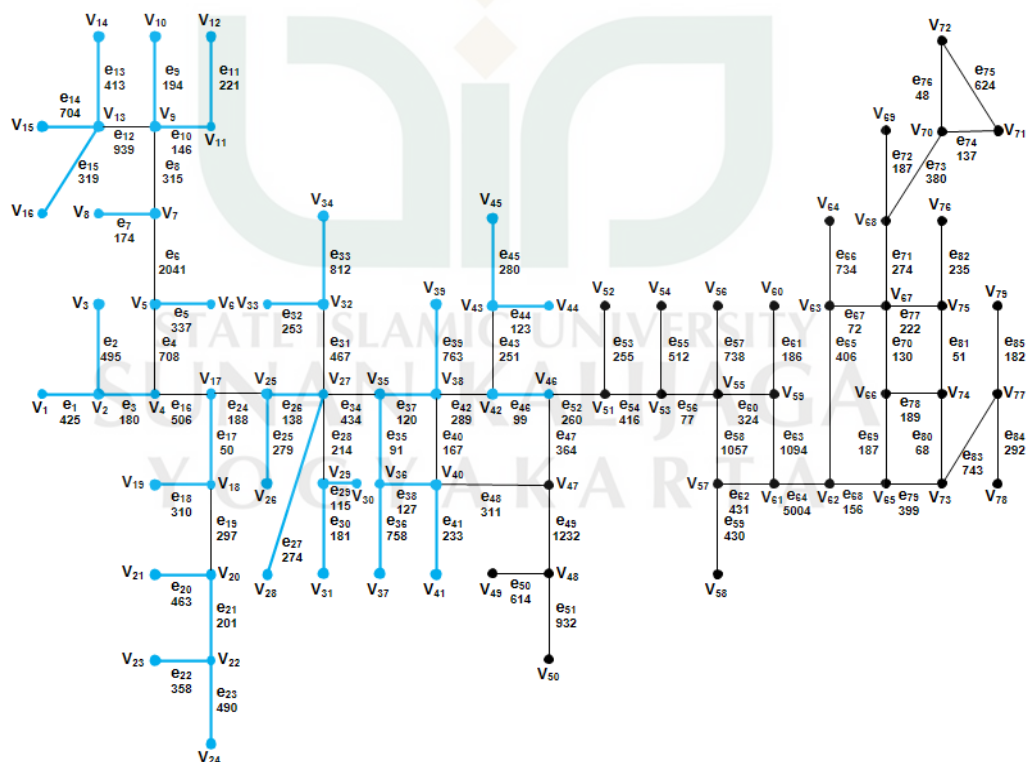
Iterasi-45 : Komponen v_{45} hanya bersisian dengan sisi e_{45} (280), maka dipilih sisi e_{45} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



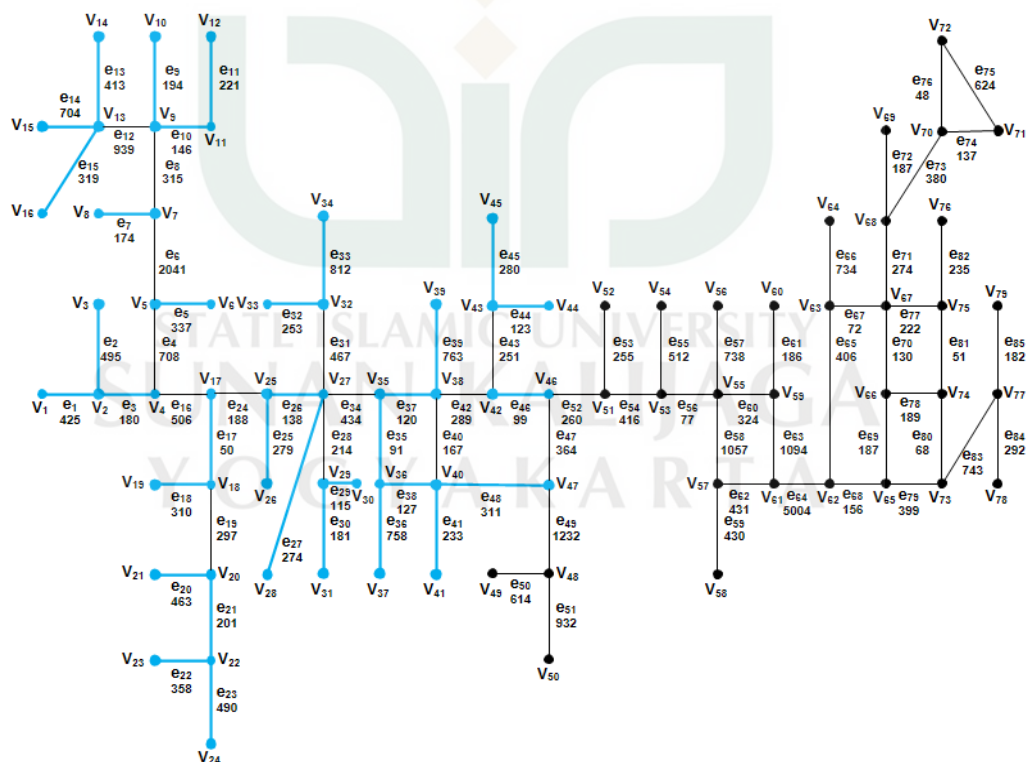
Iterasi-46 : Komponen v_{46} bersisian dengan sisi e_{46} (99), e_{47} (364), dan e_{52} (260), maka dipilih sisi e_{46} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



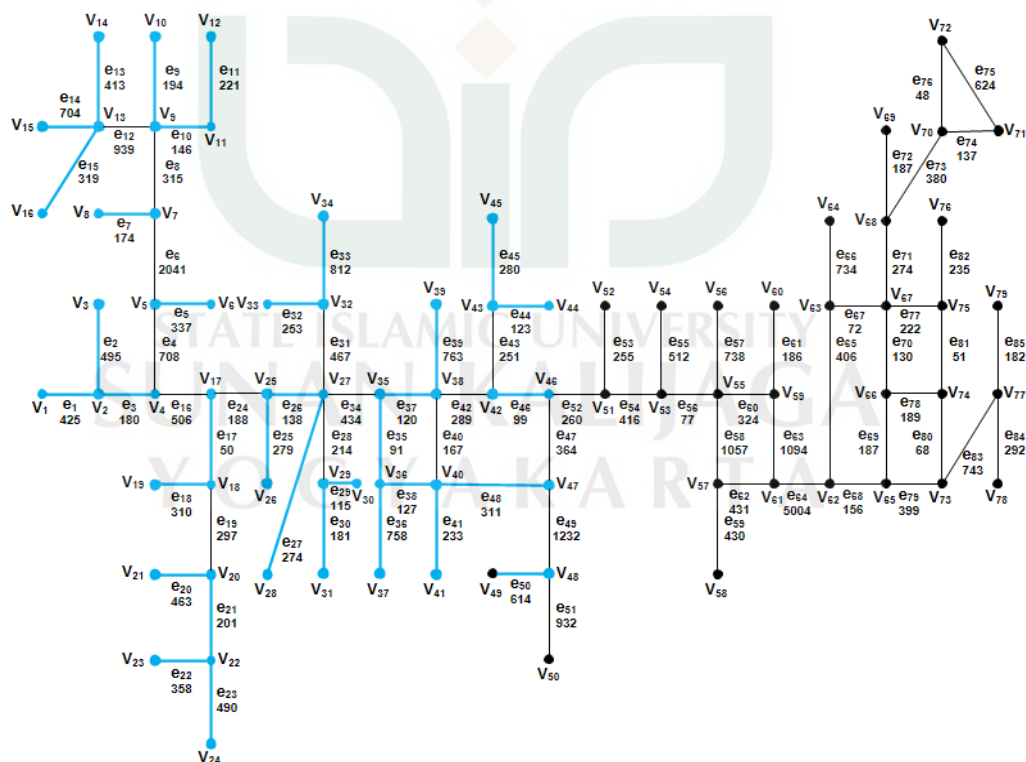
Iterasi-47 : Komponen v_{47} bersisian dengan sisi e_{47} (364), e_{48} (311), dan e_{49} (1232), maka dipilih sisi e_{48} sebagai sisi berbobot minimum.

<i>T</i>	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}$
<i>Comp</i>	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



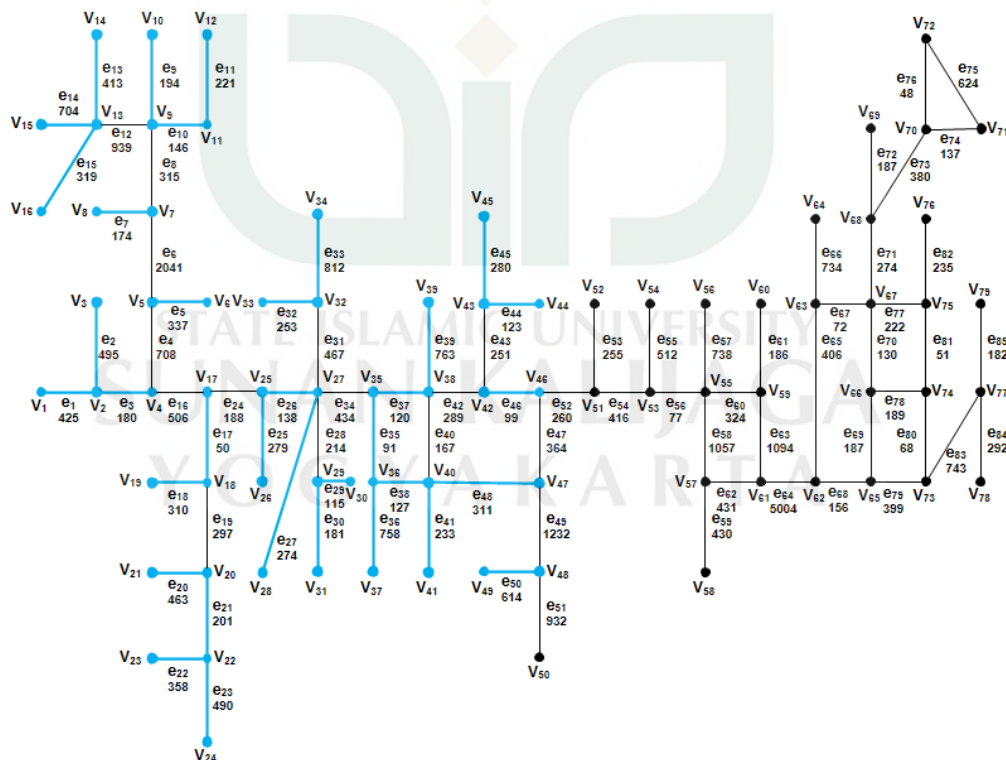
Iterasi-48 : Komponen v_{48} bersisian dengan sisi e_{49} (1232), e_{50} (614), dan e_{51} (932), maka dipilih sisi e_{50} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



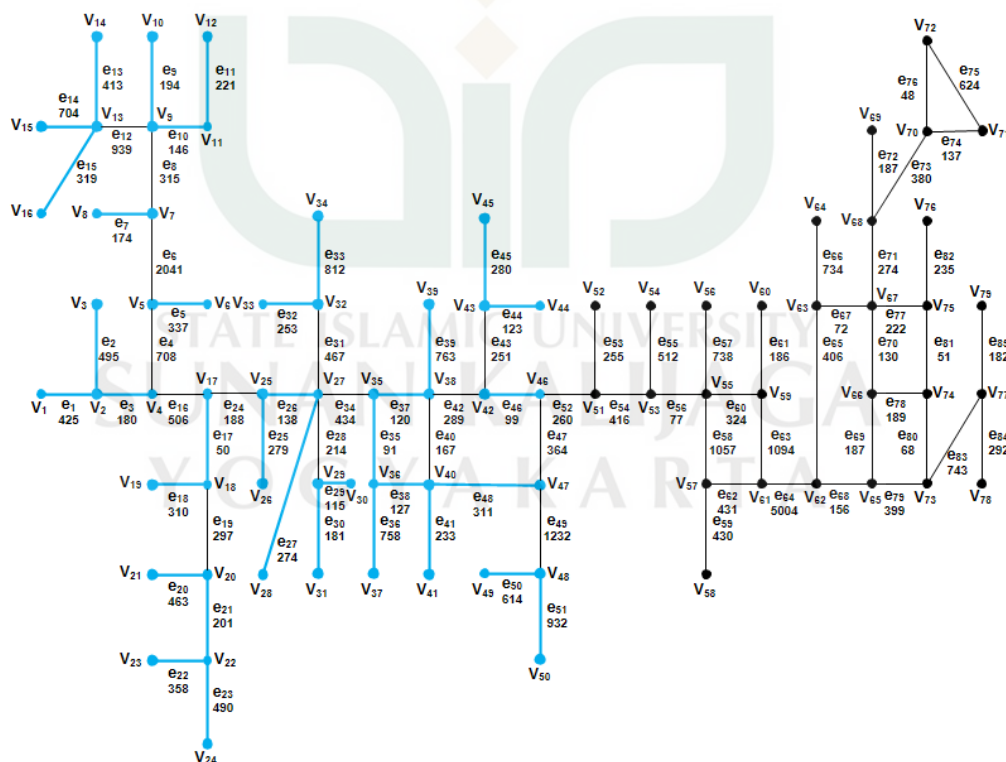
Iterasi-49 : Komponen v_{49} hanya bersisian dengan sisi e_{50} (614), maka dipilih sisi e_{50} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



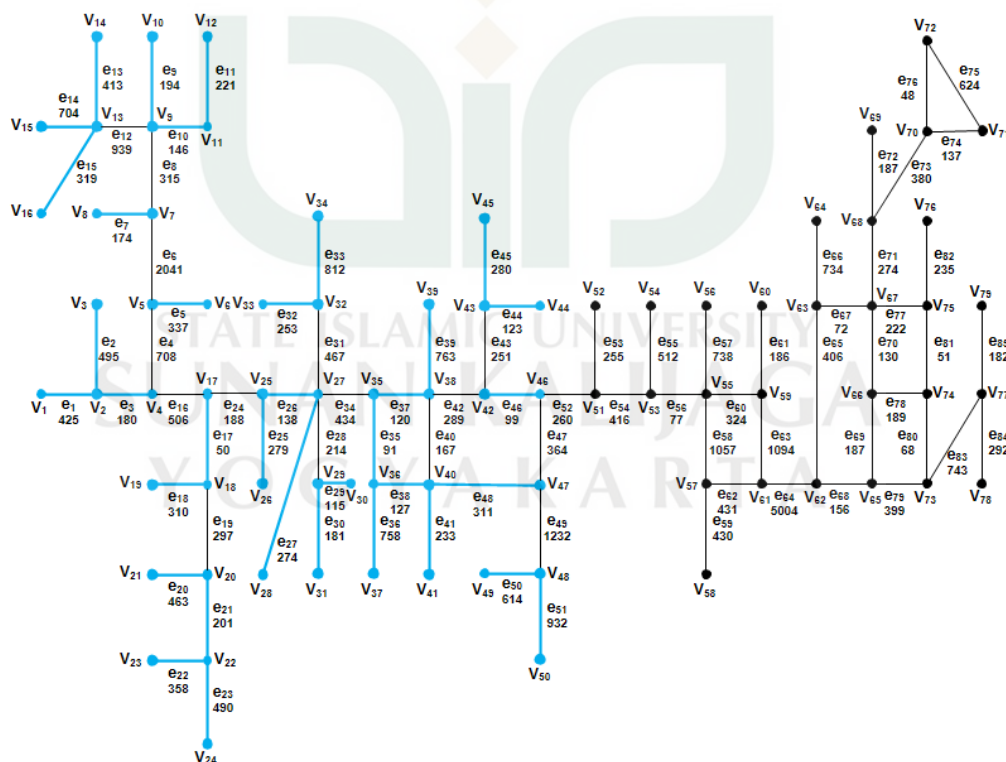
Iterasi-50 : Komponen v_{50} hanya bersisian dengan sisi e_{51} (932), maka dipilih sisi e_{51} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



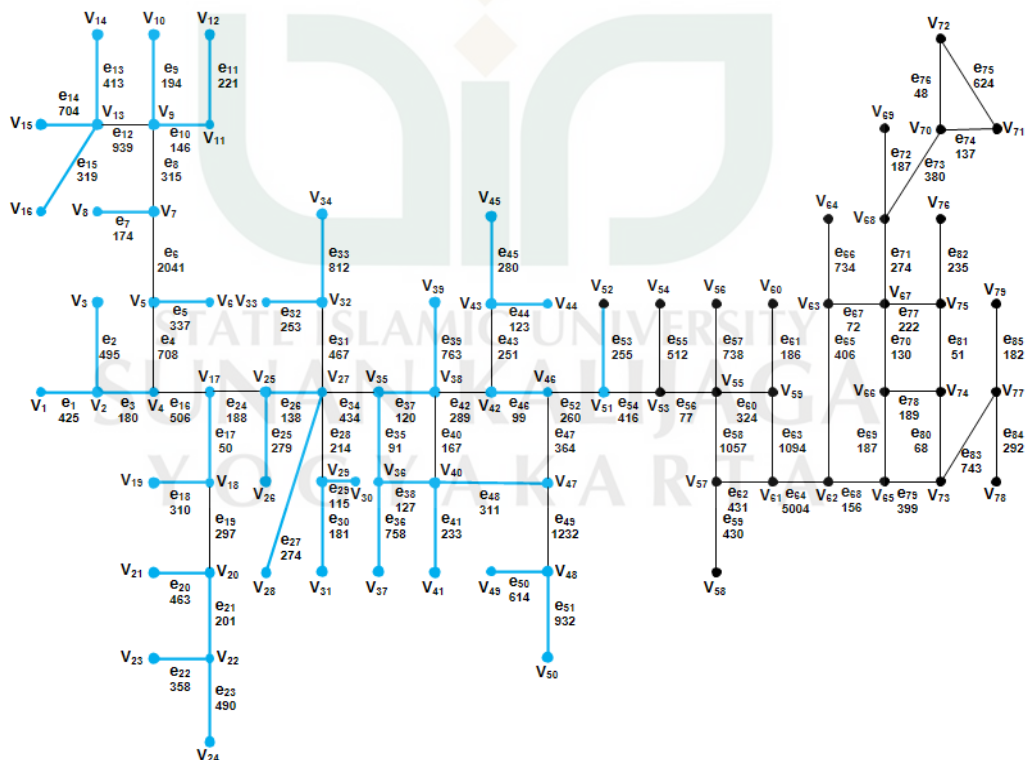
Iterasi-50 : Komponen v_{50} hanya bersisian dengan sisi e_{51} (932), maka dipilih sisi e_{51} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



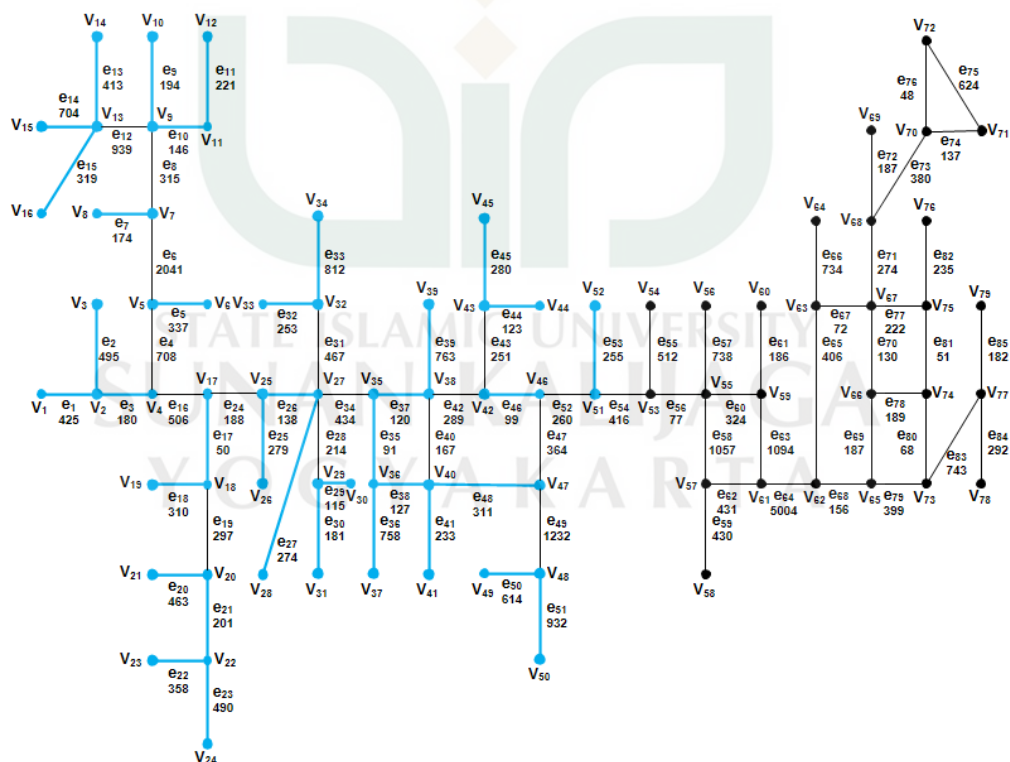
Iterasi-51 : Komponen v_{51} bersisian dengan sisi e_{52} (260), e_{53} (255), dan e_{54} (416), maka dipilih sisi e_{53} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



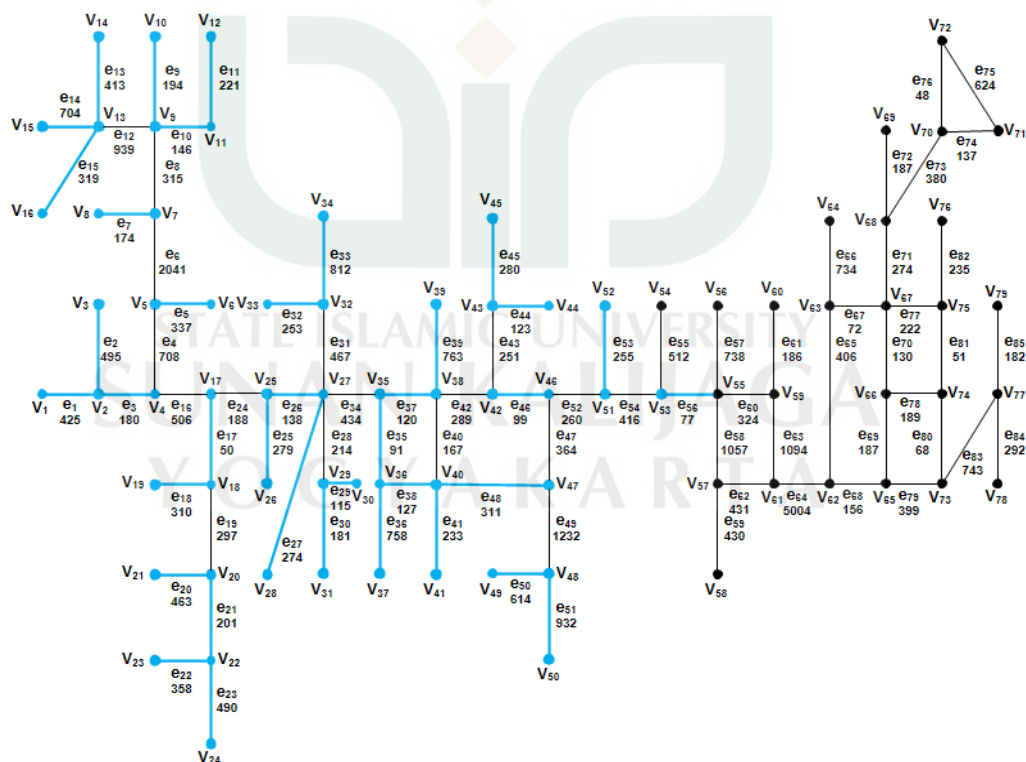
Iterasi-52 : Komponen v_{52} hanya bersisian dengan sisi e_{53} (255), maka dipilih sisi e_{53} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



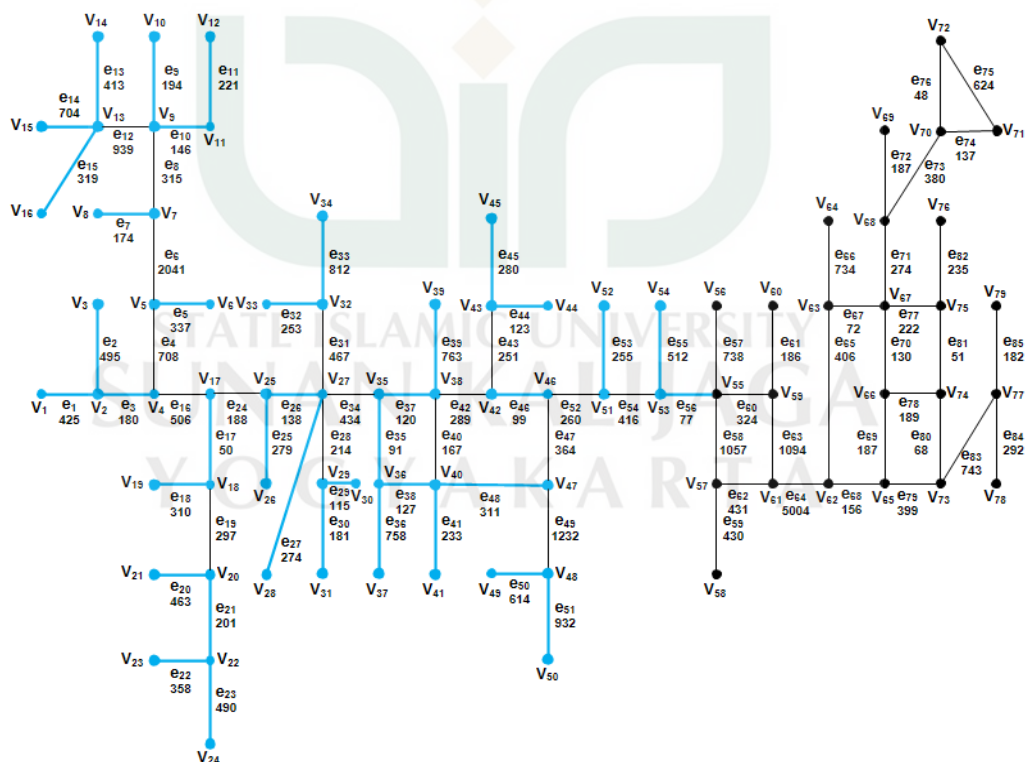
Iterasi-53 : Komponen v_{53} bersisian dengan sisi e_{54} (416), e_{55} (512), dan e_{56} (77), maka dipilih sisi e_{56} sebagai sisi berbobot minimum.

<i>T</i>	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}$
<i>Comp</i>	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



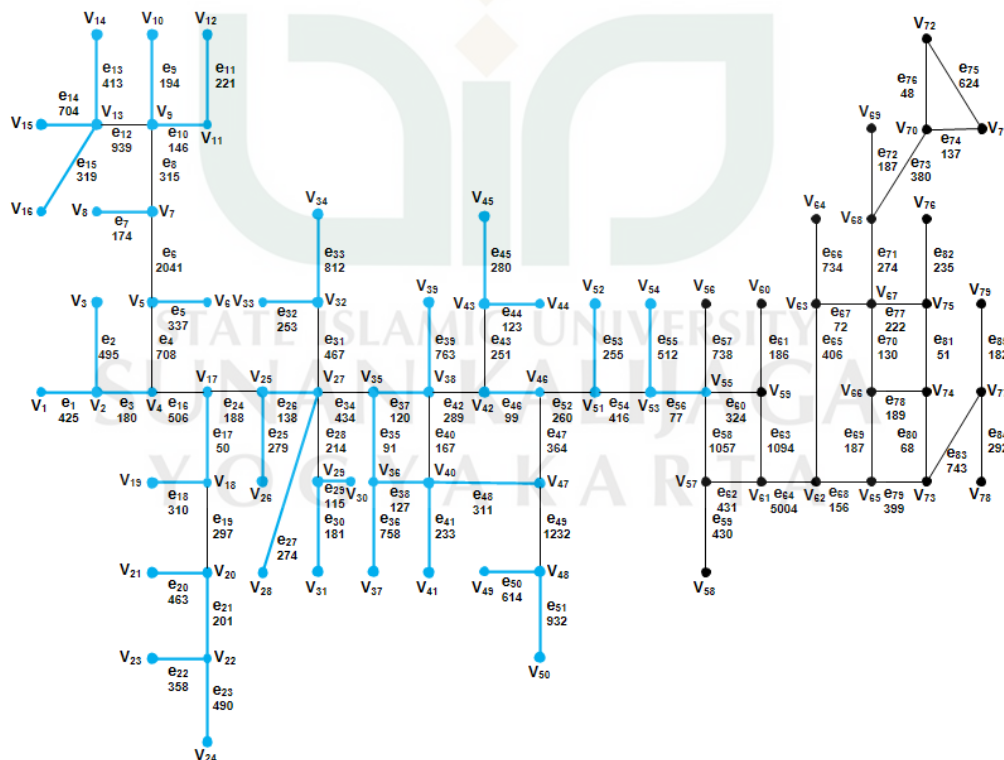
Iterasi-54 : Komponen v_{54} hanya bersisian dengan sisi e_{55} (512), maka dipilih sisi e_{55} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



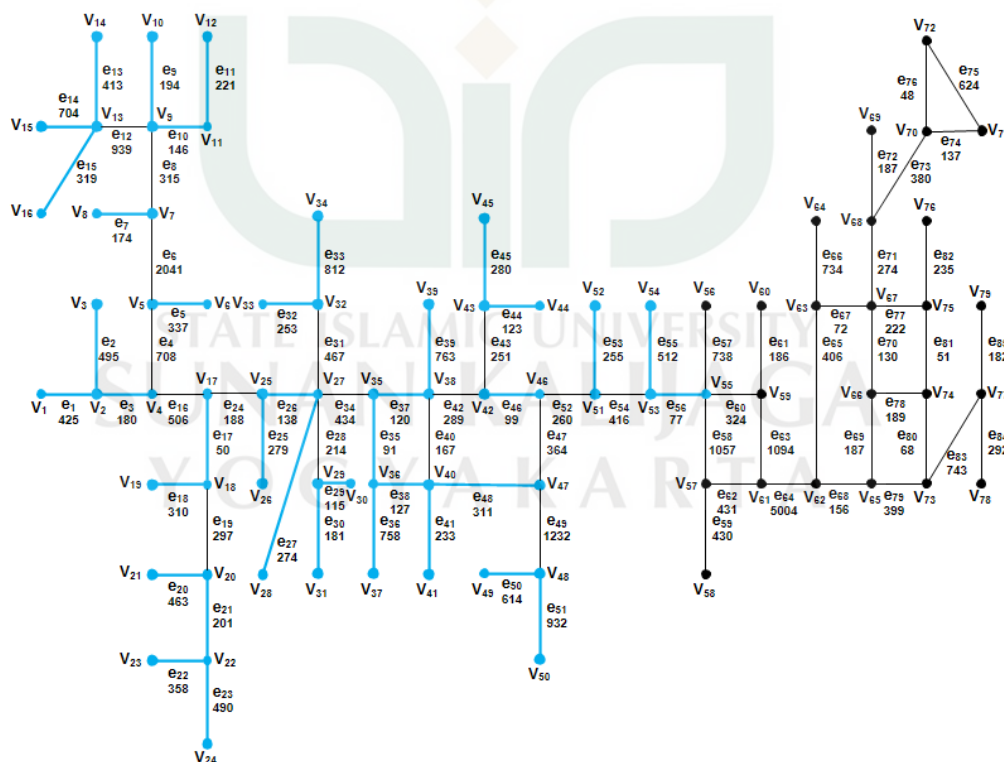
Iterasi-55 : Komponen v_{55} bersisian dengan sisi e_{56} (77), e_{57} (738), e_{58} (1057), dan e_{60} (324),
maka dipilih sisi e_{56} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



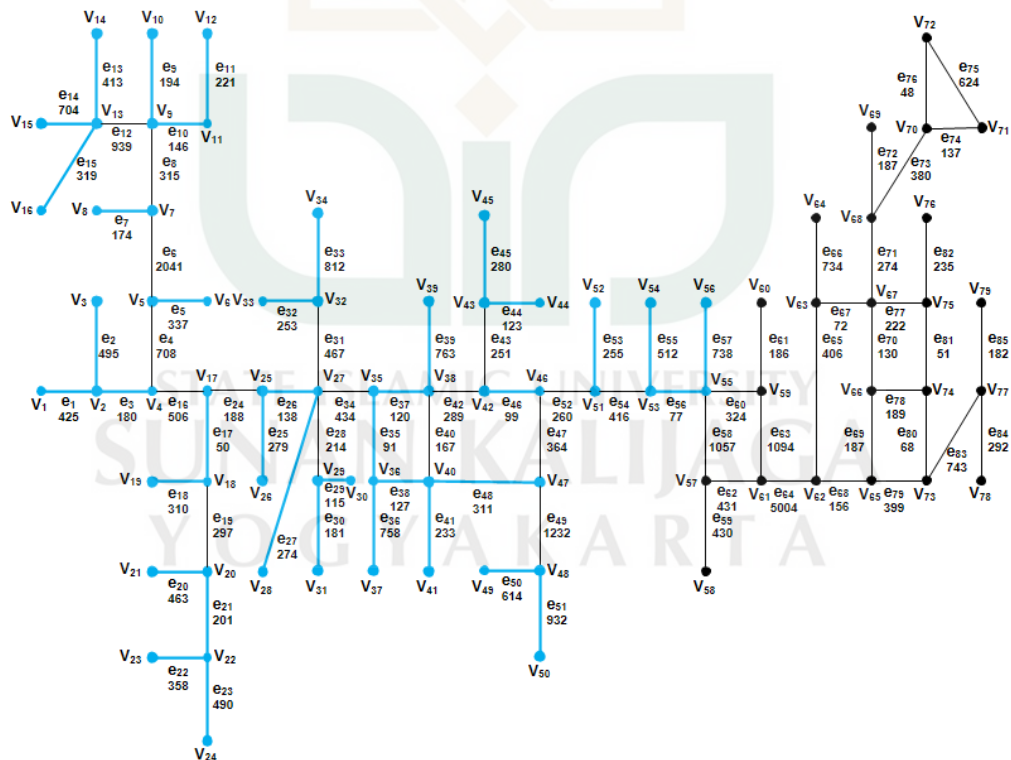
Iterasi-55 : Komponen v_{55} bersisian dengan sisi e_{56} (77), e_{57} (738), e_{58} (1057), dan e_{60} (324),
maka dipilih sisi e_{56} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



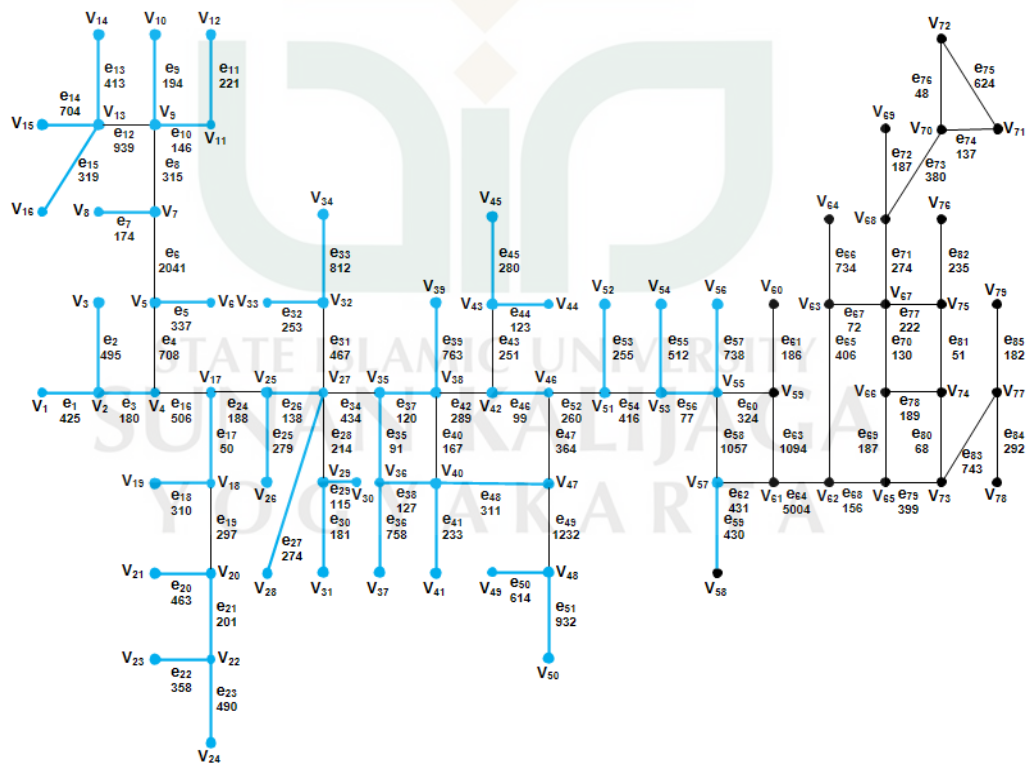
Iterasi-56 : Komponen v_{56} hanya bersisian dengan sisi e_{57} (738), maka dipilih sisi e_{57} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



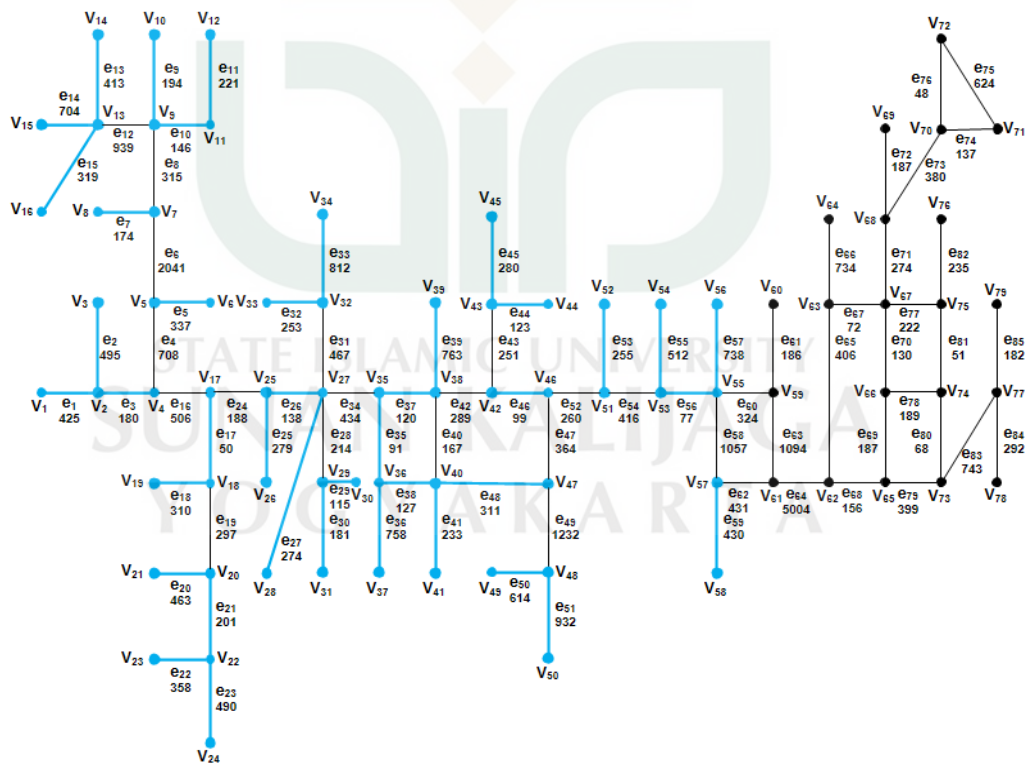
Iterasi-57 : Komponen v_{57} bersisian dengan sisi e_{58} (1057), e_{59} (430), dan e_{62} (431), maka dipilih sisi e_{59} sebagai sisi berbobot minimum.

<i>T</i>	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59}$
<i>Comp</i>	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



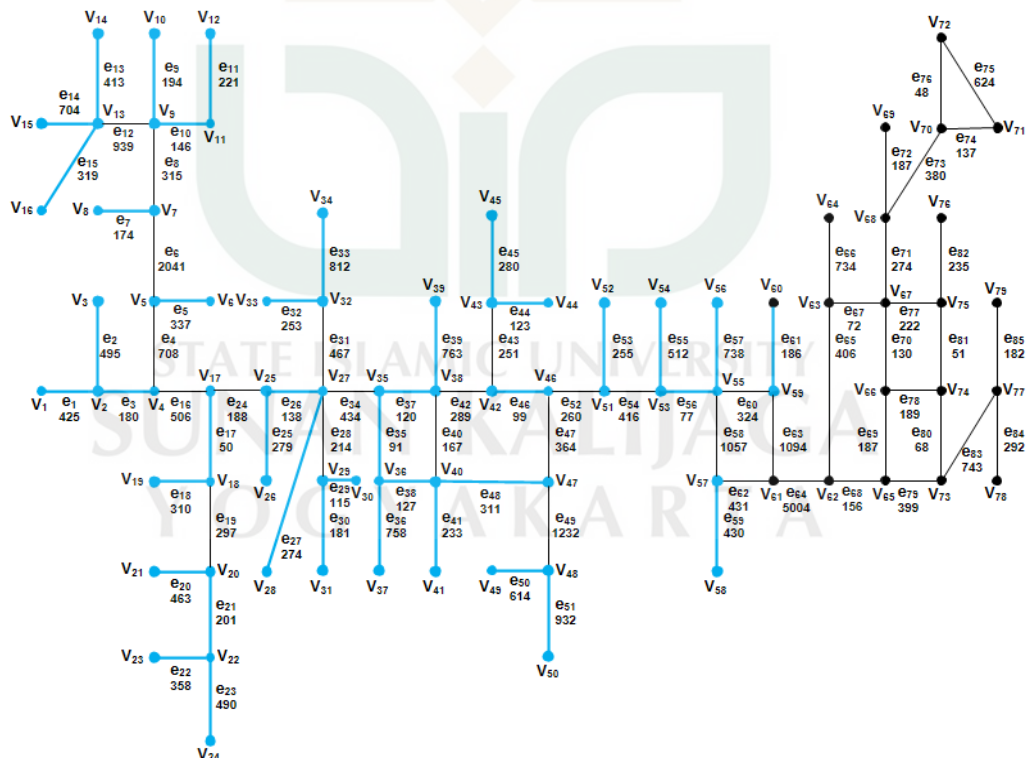
Iterasi-58 : Komponen v_{58} hanya bersisian dengan sisi e_{59} (430), maka dipilih sisi e_{59} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



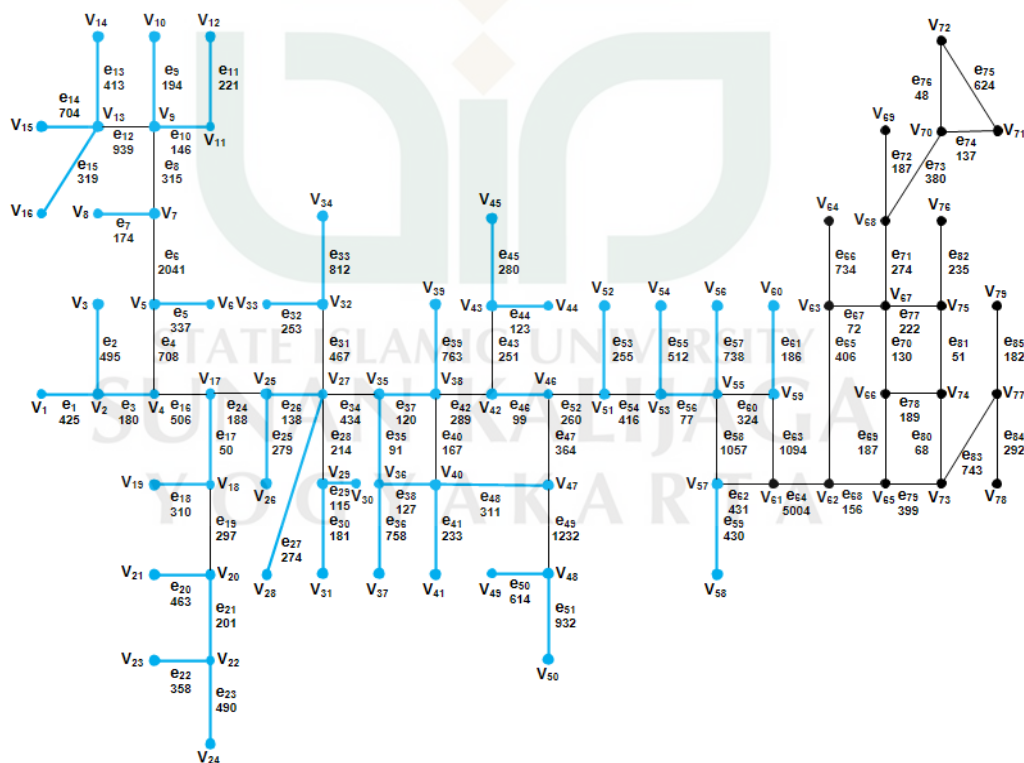
Iterasi-59 : Komponen v_{59} bersisian dengan sisi e_{60} (324), e_{61} (186), dan e_{63} (1094), maka dipilih sisi e_{61} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57},$ e_{59}, e_{61}
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



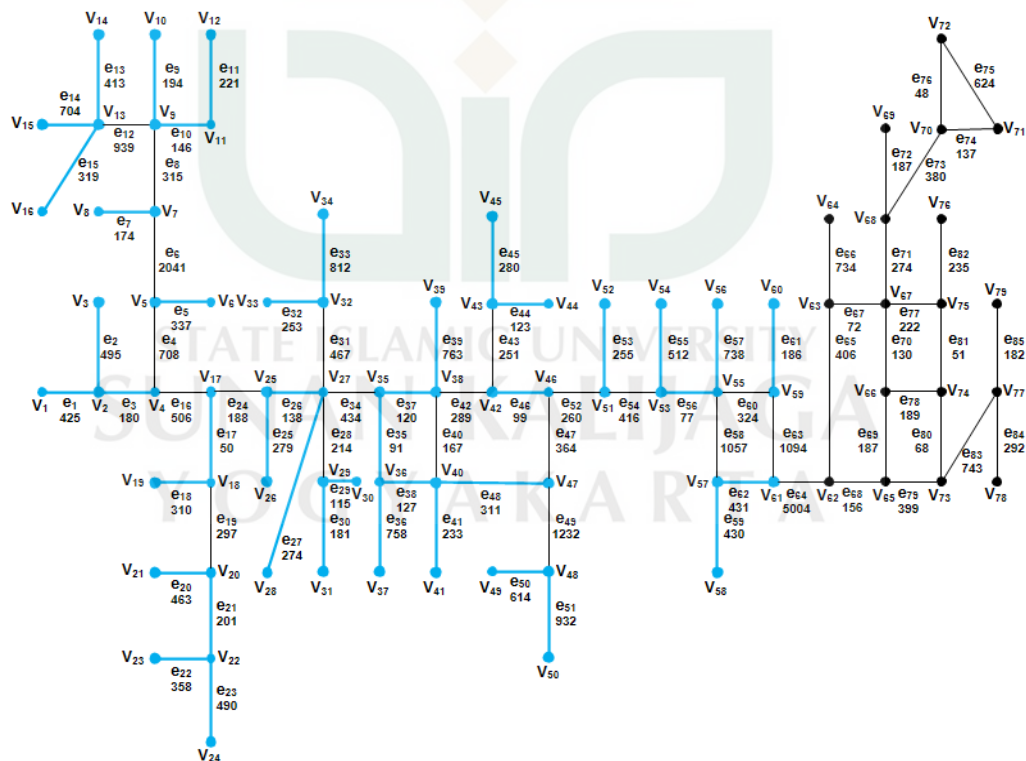
Iterasi-60 : Komponen v_{60} hanya bersisian dengan sisi e_{61} (186), maka dipilih sisi e_{61} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57},$ e_{59}, e_{61}
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



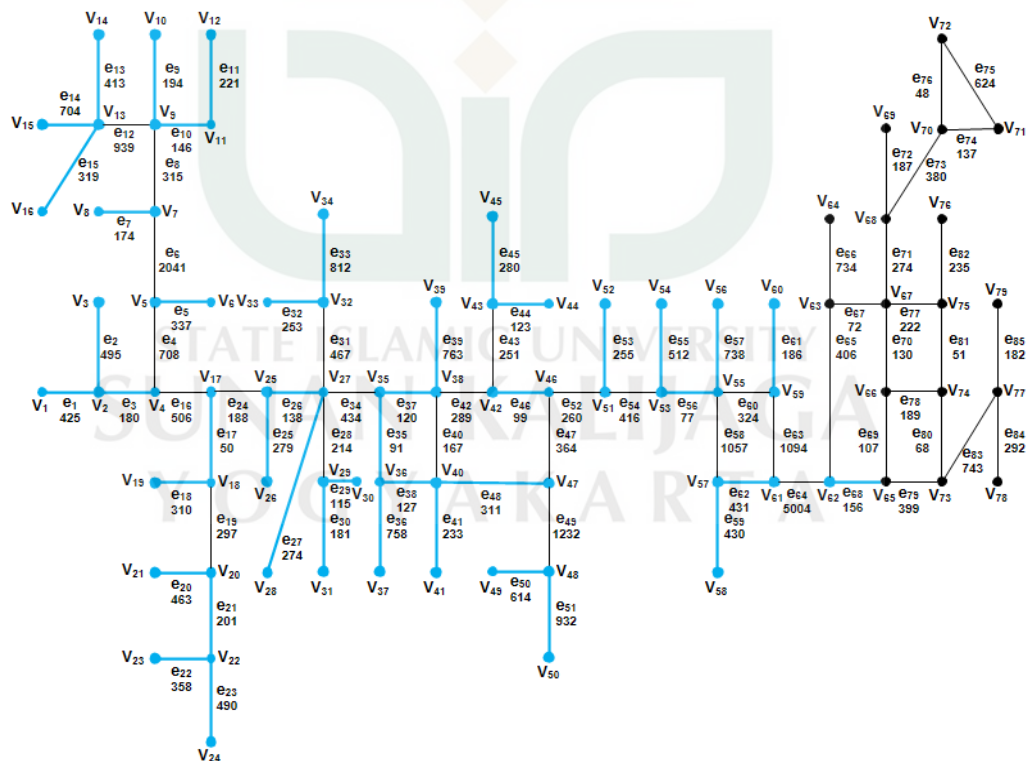
Iterasi-61 : Komponen v_{61} bersisian dengan sisi e_{62} (431), e_{63} (1094), dan e_{64} (5004), maka dipilih sisi e_{62} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57},$ e_{59}, e_{61}, e_{62}
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\},$ $\{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\},$ $\{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\},$ $\{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\},$ $\{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\},$ $\{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



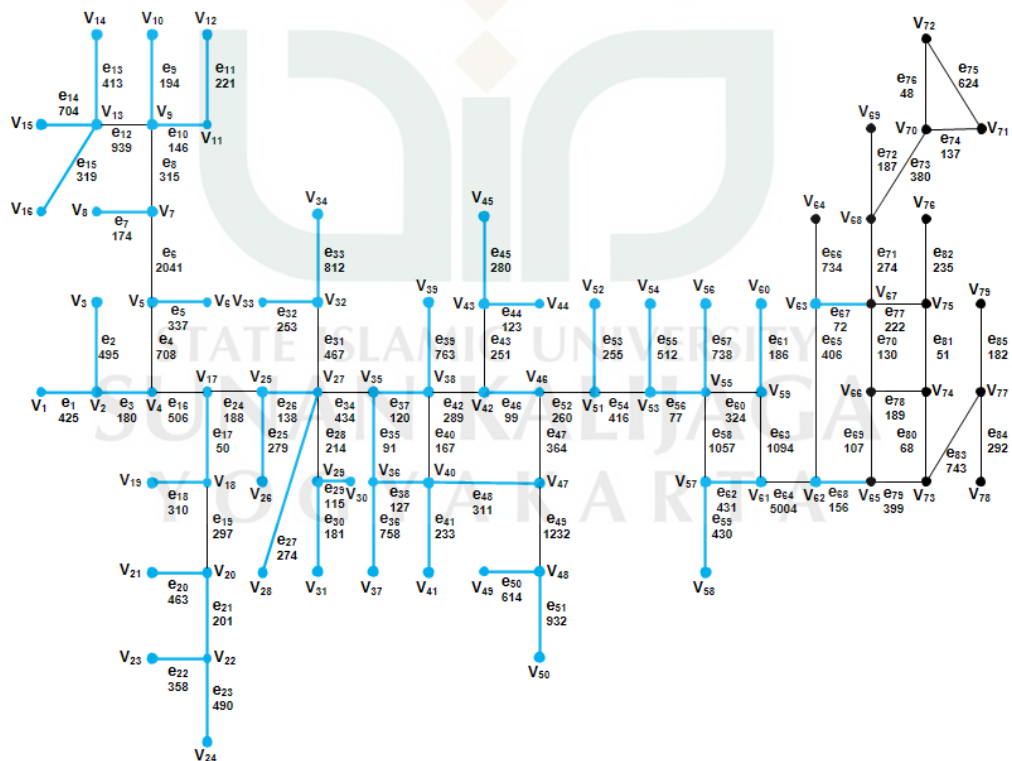
Iterasi-62 : Komponen v_{62} bersisian dengan sisi e_{64} (5004), e_{65} (406), dan e_{68} (156), maka dipilih sisi e_{68} sebagai sisi berbobot minimum.

<i>T</i>	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59},$ e_{61}, e_{62}, e_{68}
<i>Comp</i>	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\},$ $\{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\},$ $\{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\},$ $\{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\},$ $\{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\},$ $\{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



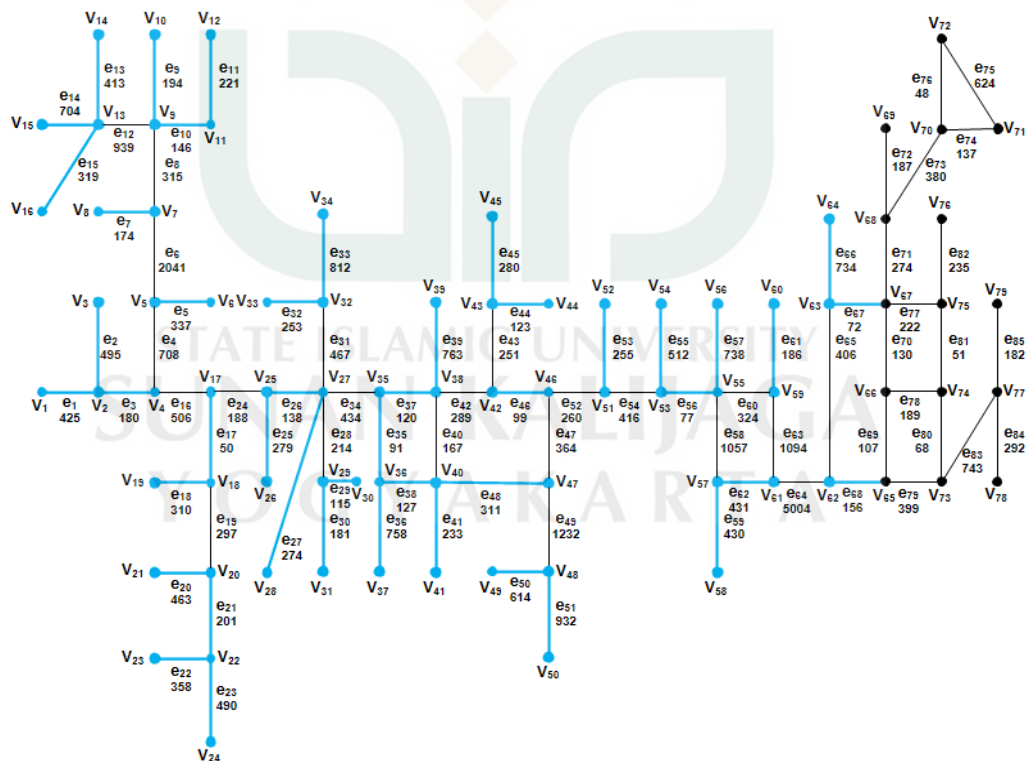
Iterasi-63 : Komponen v_{63} bersisian dengan sisi e_{65} (406), e_{66} (734), dan e_{67} (72), maka dipilih sisi e_{67} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59},$ $e_{61}, e_{62}, e_{68}, e_{67}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\},$ $\{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\},$ $\{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\},$ $\{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\},$ $\{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\},$ $\{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



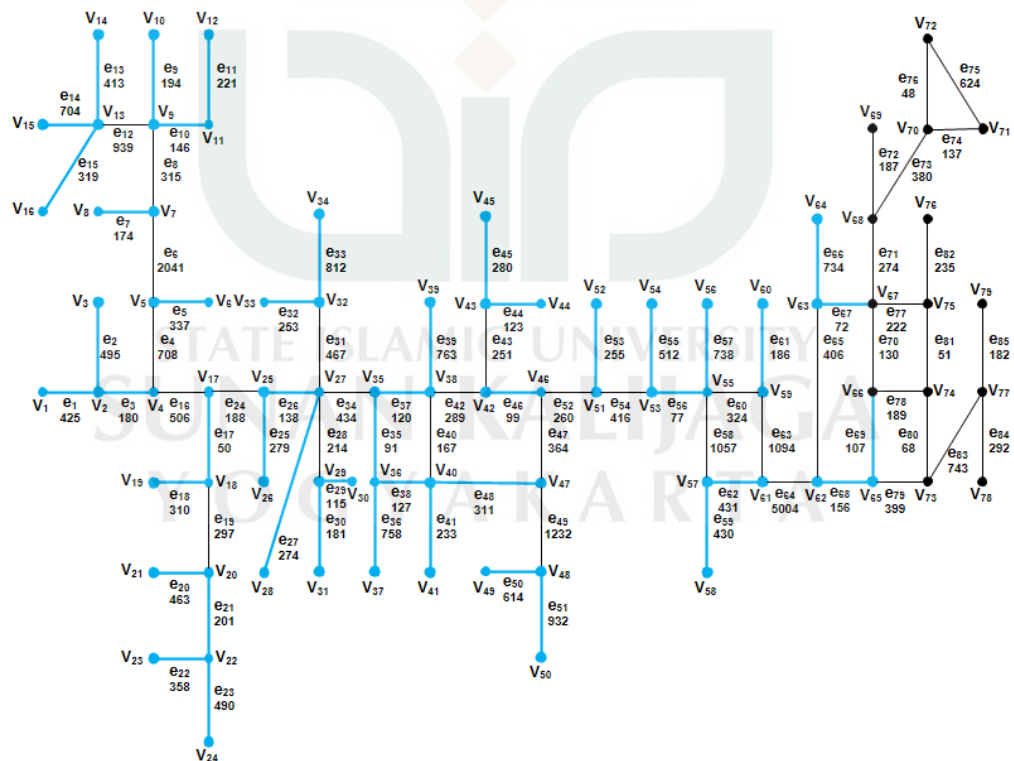
Iterasi-64 : Komponen v_{64} hanya bersisian dengan sisi e_{66} (734), maka dipilih sisi e_{66} sebagai sisi berbobot minimum.

<i>T</i>	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59},$ $e_{61}, e_{62}, e_{68}, e_{67}, e_{66}$
<i>Comp</i>	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\},$ $\{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\},$ $\{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\},$ $\{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\},$ $\{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\},$ $\{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



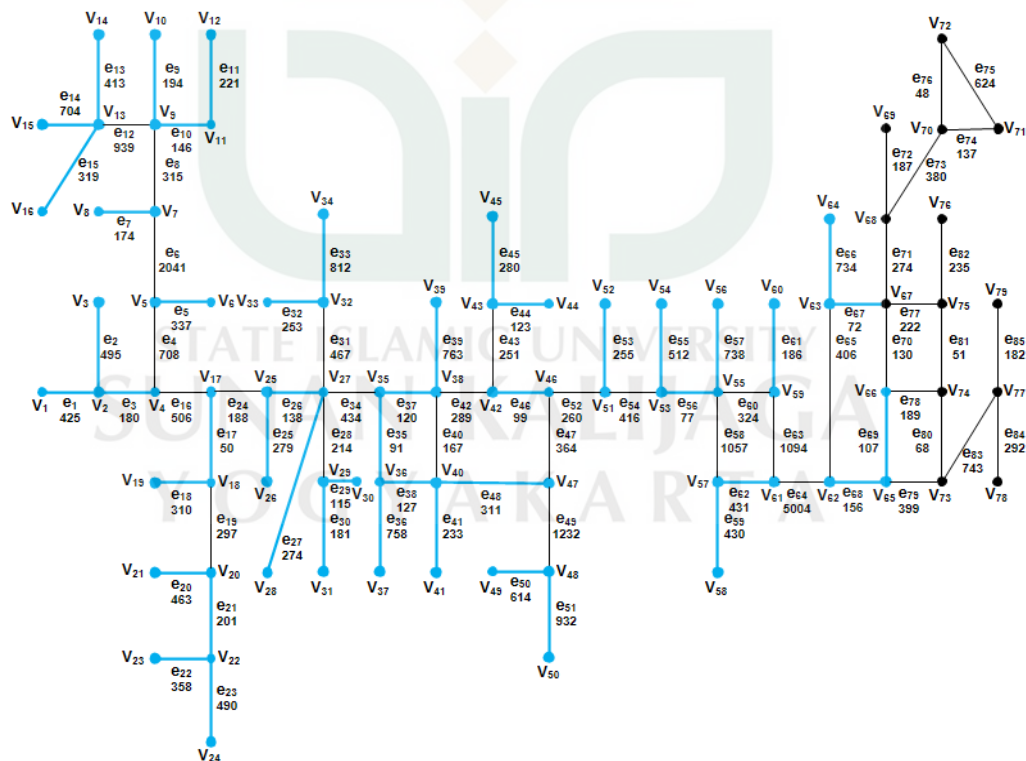
Iterasi-65 : Komponen v_{65} bersisian dengan sisi e_{68} (156), e_{69} (107), dan e_{79} (399), maka dipilih sisi e_{69} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59},$ $e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\},$ $\{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\},$ $\{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\},$ $\{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\},$ $\{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\},$ $\{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



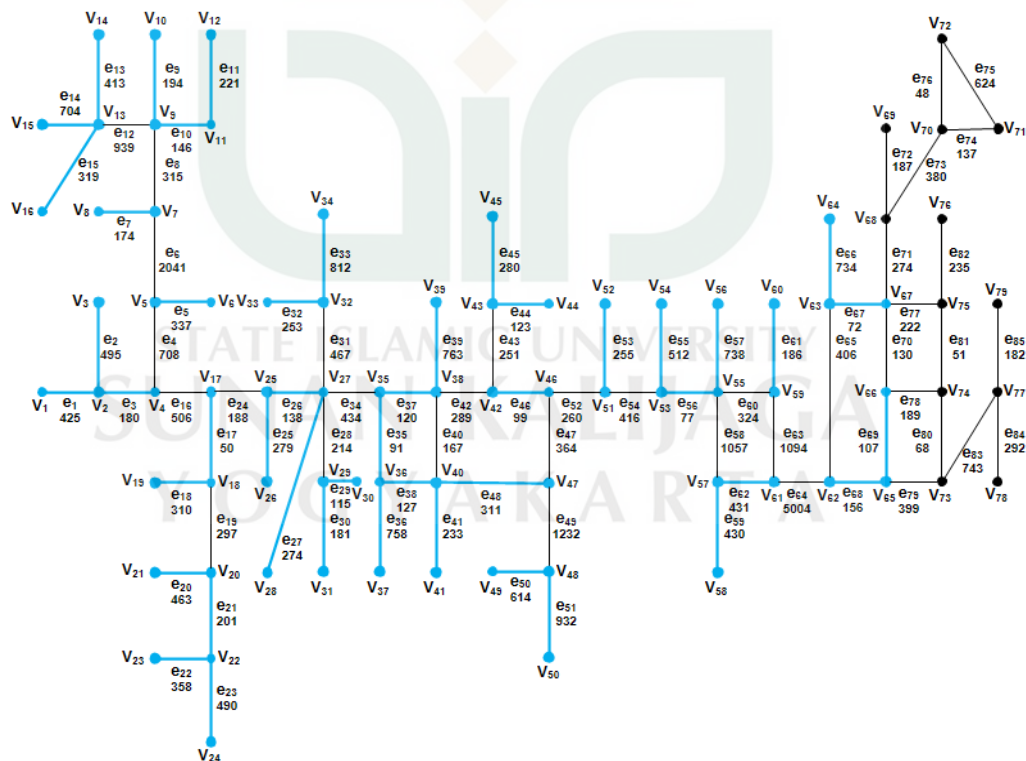
Iterasi-66 : Komponen v_{66} bersisian dengan sisi e_{69} (107), e_{70} (130), dan e_{78} (189), maka dipilih sisi e_{69} sebagai sisi berbobot minimum.

<i>T</i>	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59},$ $e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}$
<i>Comp</i>	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\},$ $\{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\},$ $\{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\},$ $\{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\},$ $\{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\},$ $\{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



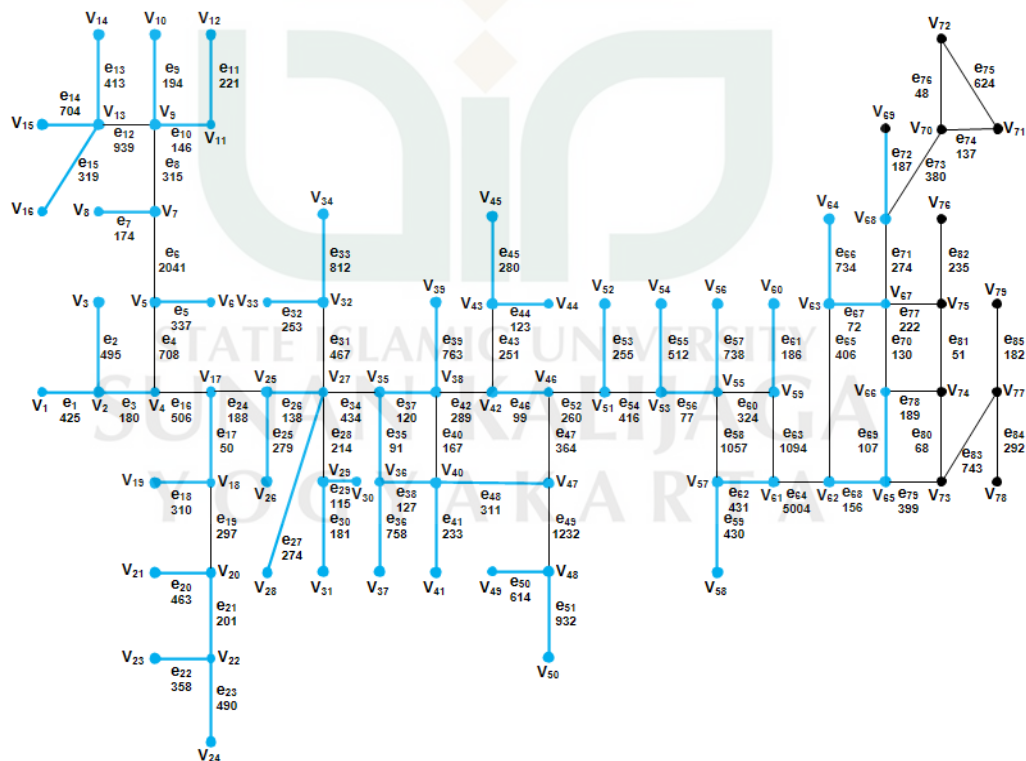
Iterasi-67 : Komponen v_{67} bersisian dengan sisi e_{67} (72), e_{70} (130), e_{71} (274), dan e_{77} (222), maka dipilih sisi e_{67} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59},$ $e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\},$ $\{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\},$ $\{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\},$ $\{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\},$ $\{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\},$ $\{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



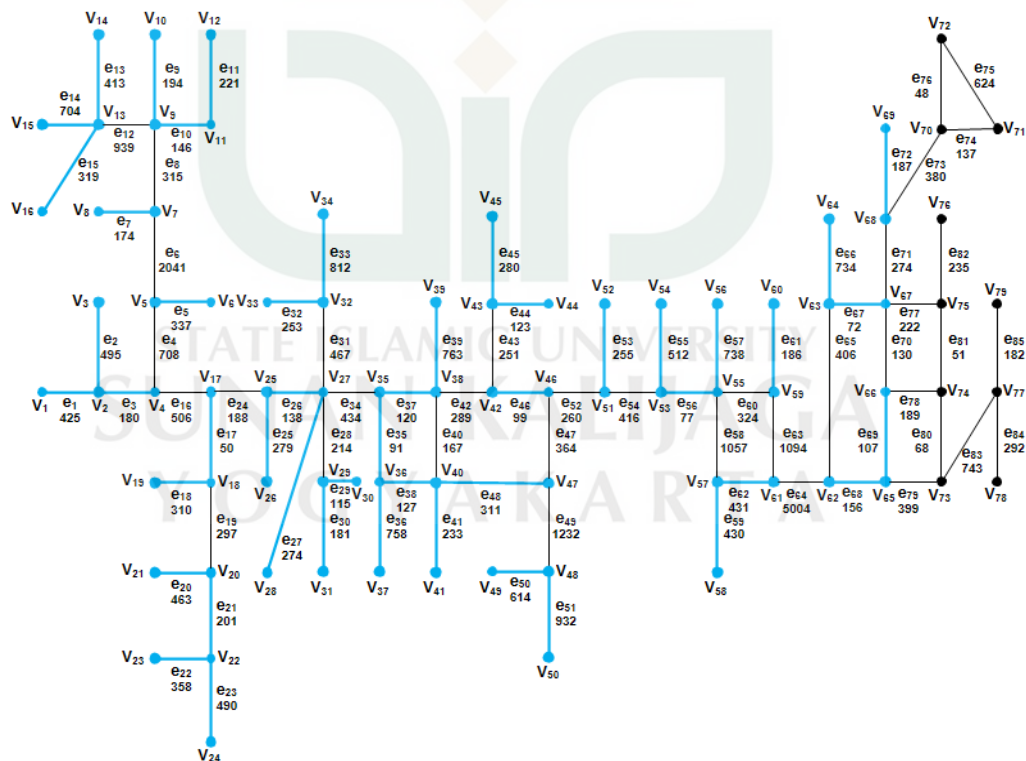
Iterasi-68 : Komponen v_{68} bersisian dengan sisi e_{71} (274), e_{72} (187), dan e_{73} (380), maka dipilih sisi e_{72} sebagai sisi berbobot minimum.

<i>T</i>	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59},$ $e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}$
<i>Comp</i>	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\},$ $\{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\},$ $\{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\},$ $\{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\},$ $\{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\},$ $\{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



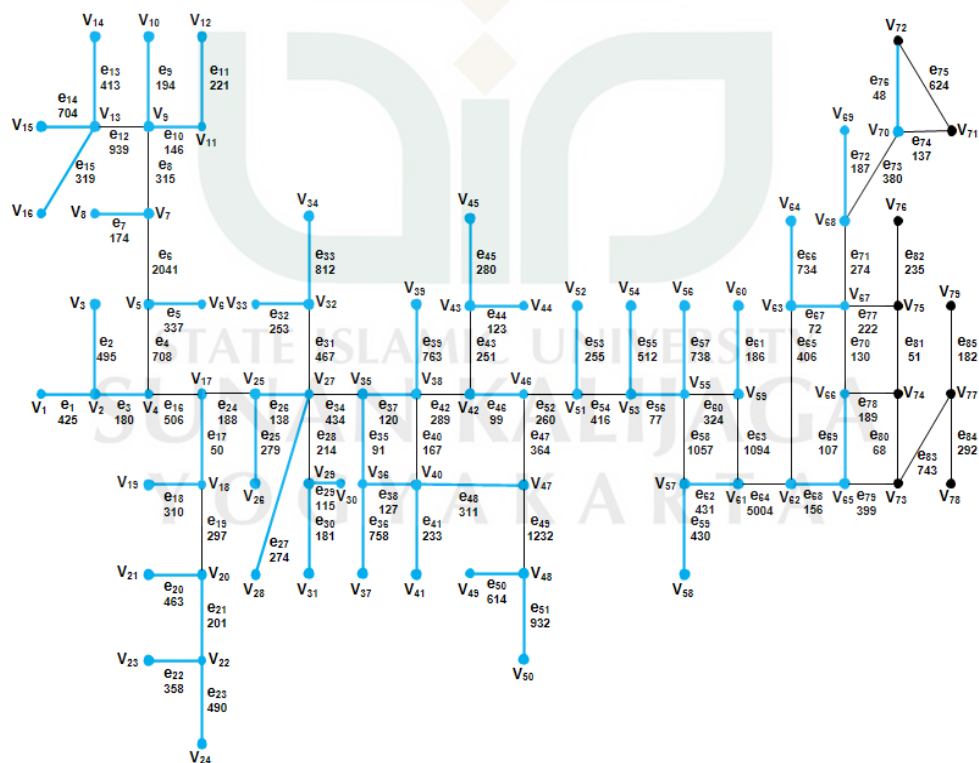
Iterasi-69 : Komponen v_{69} hanya bersisian dengan sisi $e_{72}^{(187)}$, maka dipilih sisi e_{72} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59},$ $e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\},$ $\{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\},$ $\{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\},$ $\{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\},$ $\{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\},$ $\{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



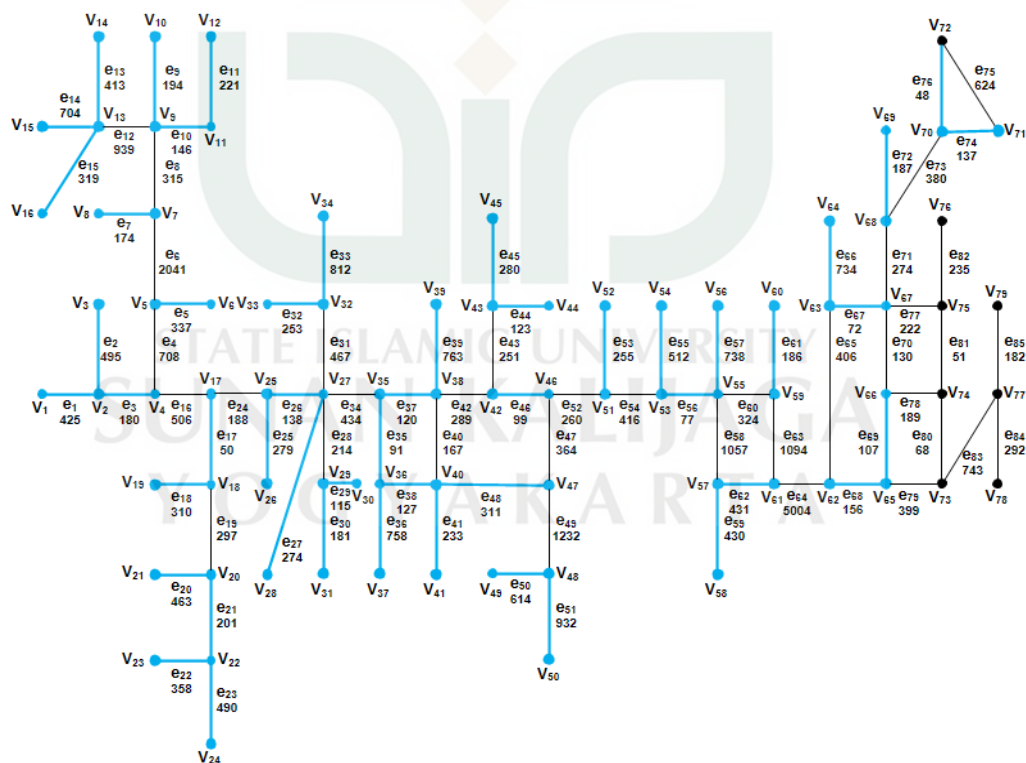
Iterasi-70 : Komponen v_{70} bersisian dengan sisi e_{73} (380), e_{74} (137), dan e_{76} (48), maka dipilih sisi e_{76} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59},$ $e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\},$ $\{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\},$ $\{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\},$ $\{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\},$ $\{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\},$ $\{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



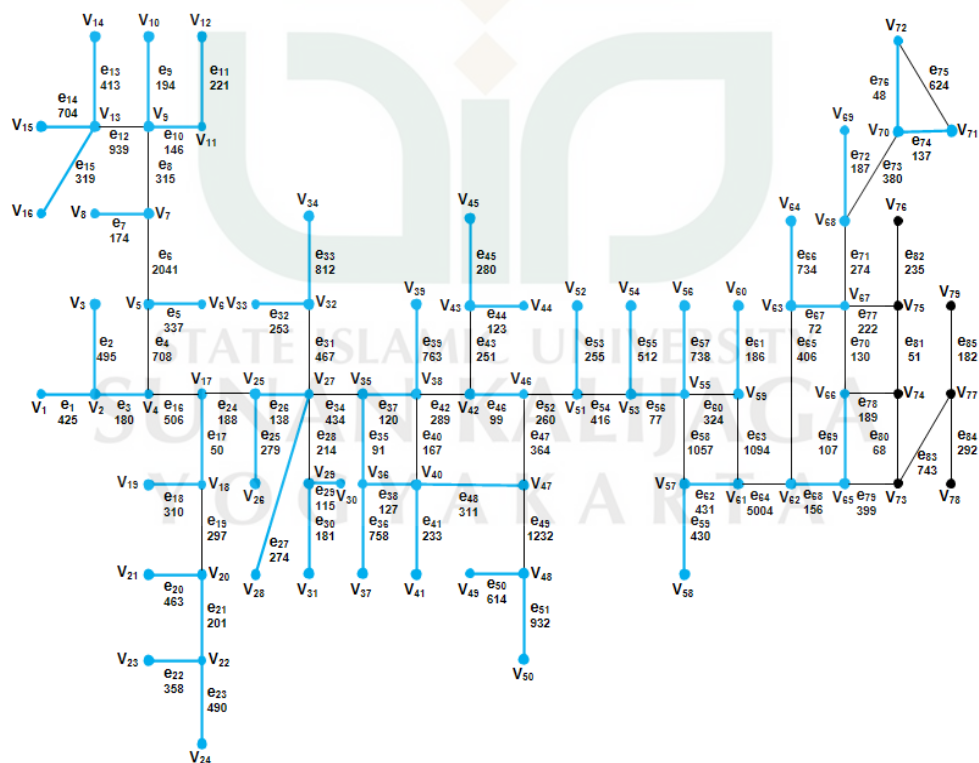
Iterasi-71 : Komponen v_{71} bersisian dengan sisi e_{74} (137) dan e_{75} (624), maka dipilih sisi e_{74} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59},$ $e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\},$ $\{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\},$ $\{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\},$ $\{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\},$ $\{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\},$ $\{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



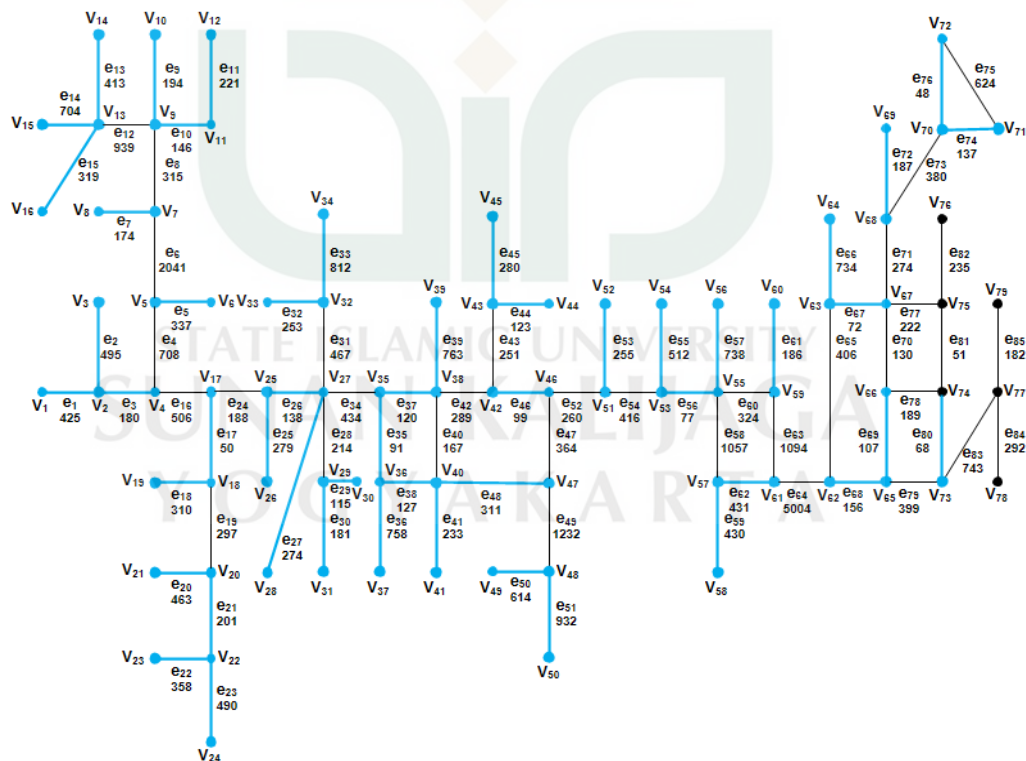
Iterasi-72 : Komponen v_{72} bersisian dengan sisi e_{75} (624) dan e_{76} (48), maka dipilih sisi e_{76} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59},$ $e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\},$ $\{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\},$ $\{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\},$ $\{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\},$ $\{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\},$ $\{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



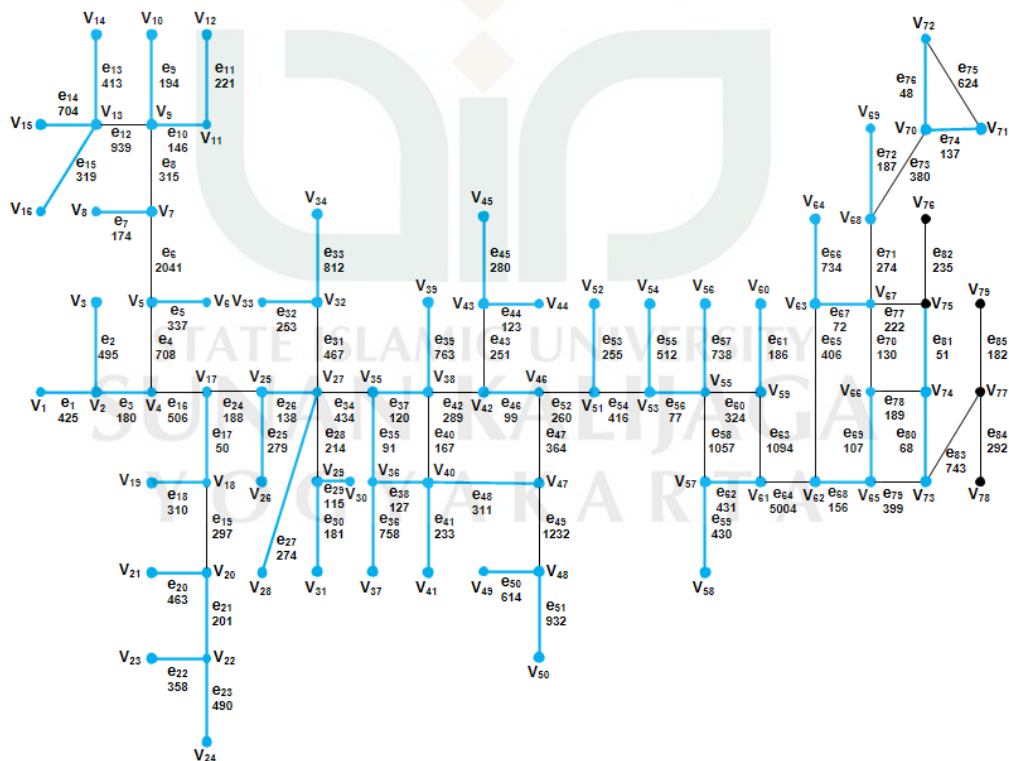
Iterasi-73 : Komponen v_{73} bersisian dengan sisi e_{79} (399), e_{80} (68), dan e_{83} (743), maka dipilih sisi e_{80} sebagai sisi berbobot minimum.

<i>T</i>	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59},$ $e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}$
<i>Comp</i>	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\},$ $\{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\},$ $\{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\},$ $\{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\},$ $\{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\},$ $\{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



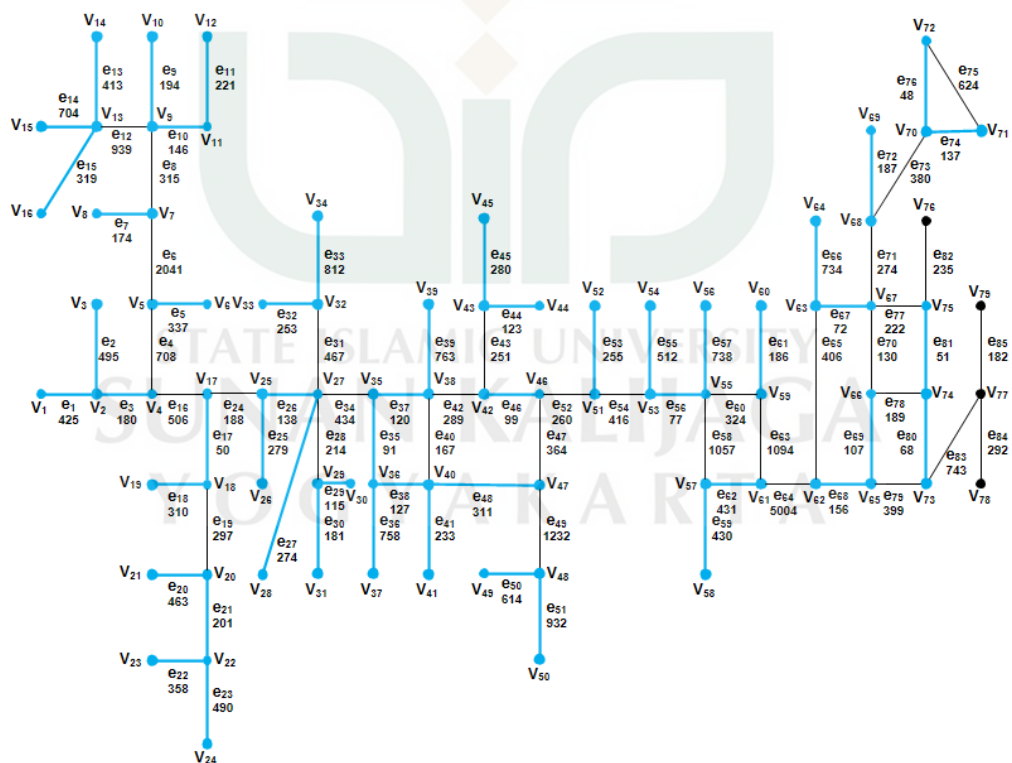
Iterasi-74 : Komponen v_{74} bersisian dengan sisi e_{78} (189), e_{80} (68), dan e_{81} (51), maka dipilih sisi e_{81} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59},$ $e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\},$ $\{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\},$ $\{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\},$ $\{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\},$ $\{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\},$ $\{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



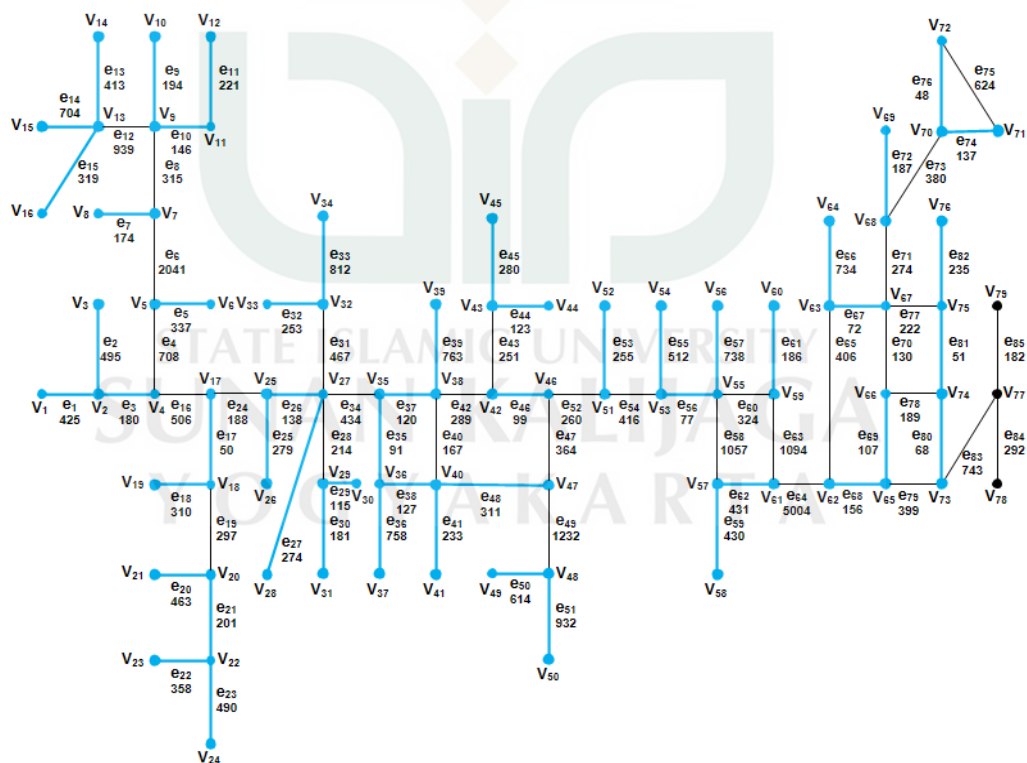
Iterasi-75 : Komponen v_{75} bersisian dengan sisi e_{77} (222), e_{81} (81), dan e_{82} (235), maka dipilih sisi e_{81} sebagai sisi berbobot minimum.

<i>T</i>	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}$
<i>Comp</i>	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\}, \{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\}, \{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\}, \{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\}, \{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\}, \{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\}, \{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



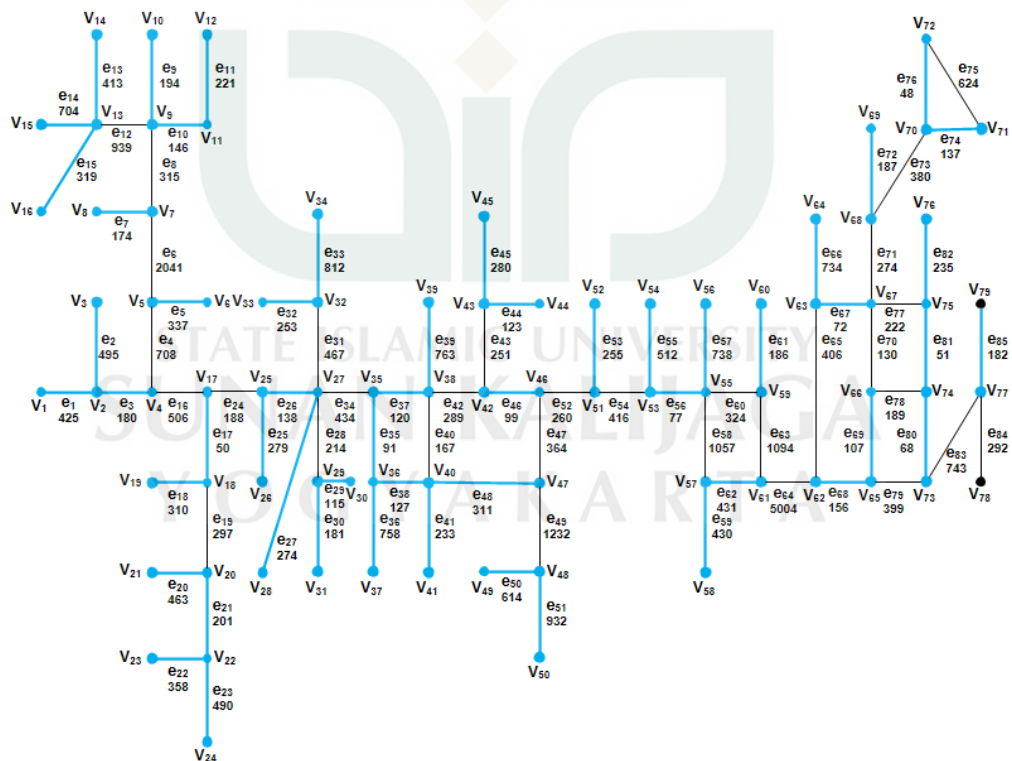
Iterasi-76 : Komponen v_{76} hanya bersisian dengan sisi e_{82} (235), maka dipilih sisi e_{82} sebagai sisi berbobot minimum.

<i>T</i>	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59},$ $e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}$
<i>Comp</i>	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\},$ $\{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\},$ $\{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\},$ $\{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\},$ $\{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\},$ $\{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



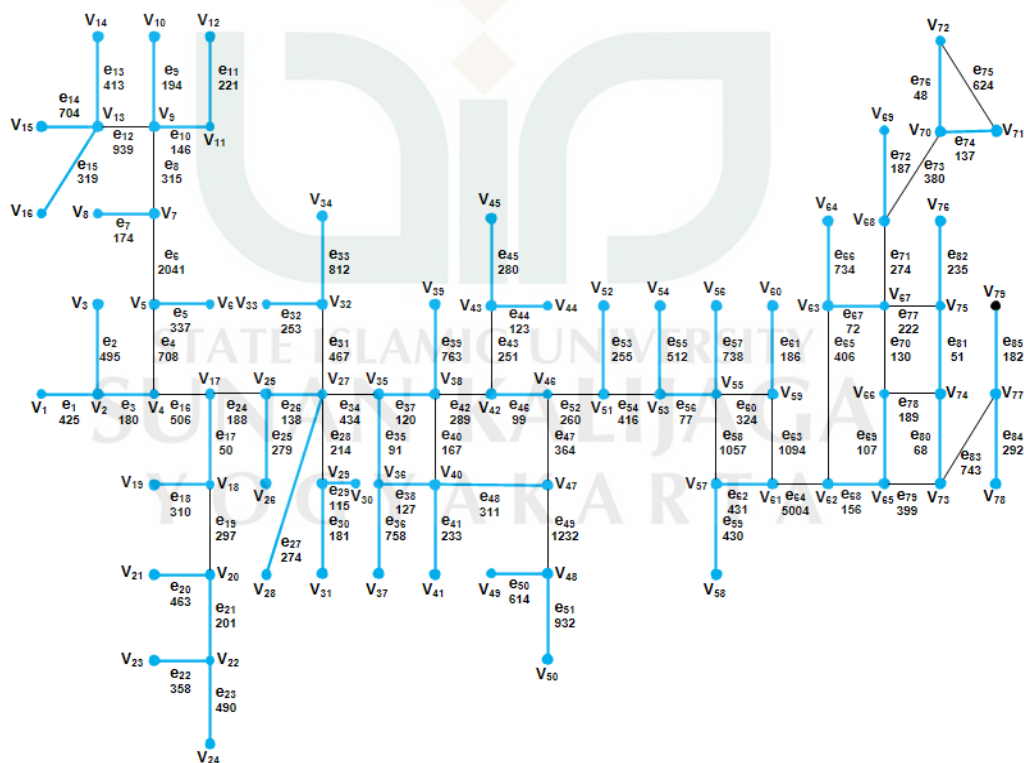
Iterasi-77 : Komponen v_{77} bersisian dengan sisi e_{83} (743), e_{84} (292), dan e_{85} (182), maka dipilih sisi e_{85} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59},$ $e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\},$ $\{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\},$ $\{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\},$ $\{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\},$ $\{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\},$ $\{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



Iterasi-78 : Komponen v_{78} hanya bersisian dengan sisi e_{84} (292), maka dipilih sisi e_{84} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29},$ $e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59},$ $e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84}$
Comp	$\{v_1\}, \{v_2\}, \{v_3\}, \{v_4\}, \{v_5\}, \{v_6\}, \{v_7\}, \{v_8\}, \{v_9\}, \{v_{10}\}, \{v_{11}\}, \{v_{12}\}, \{v_{13}\},$ $\{v_{14}\}, \{v_{15}\}, \{v_{16}\}, \{v_{17}\}, \{v_{18}\}, \{v_{19}\}, \{v_{20}\}, \{v_{21}\}, \{v_{22}\}, \{v_{23}\}, \{v_{24}\}, \{v_{25}\},$ $\{v_{26}\}, \{v_{27}\}, \{v_{28}\}, \{v_{29}\}, \{v_{30}\}, \{v_{31}\}, \{v_{32}\}, \{v_{33}\}, \{v_{34}\}, \{v_{35}\}, \{v_{36}\}, \{v_{37}\},$ $\{v_{38}\}, \{v_{39}\}, \{v_{40}\}, \{v_{41}\}, \{v_{42}\}, \{v_{43}\}, \{v_{44}\}, \{v_{45}\}, \{v_{46}\}, \{v_{47}\}, \{v_{48}\}, \{v_{49}\},$ $\{v_{50}\}, \{v_{51}\}, \{v_{52}\}, \{v_{53}\}, \{v_{54}\}, \{v_{55}\}, \{v_{56}\}, \{v_{57}\}, \{v_{58}\}, \{v_{59}\}, \{v_{60}\}, \{v_{62}\},$ $\{v_{62}\}, \{v_{63}\}, \{v_{64}\}, \{v_{65}\}, \{v_{66}\}, \{v_{67}\}, \{v_{68}\}, \{v_{69}\}, \{v_{70}\}, \{v_{72}\}, \{v_{73}\}, \{v_{73}\},$ $\{v_{74}\}, \{v_{75}\}, \{v_{76}\}, \{v_{77}\}, \{v_{78}\}, \{v_{79}\}$



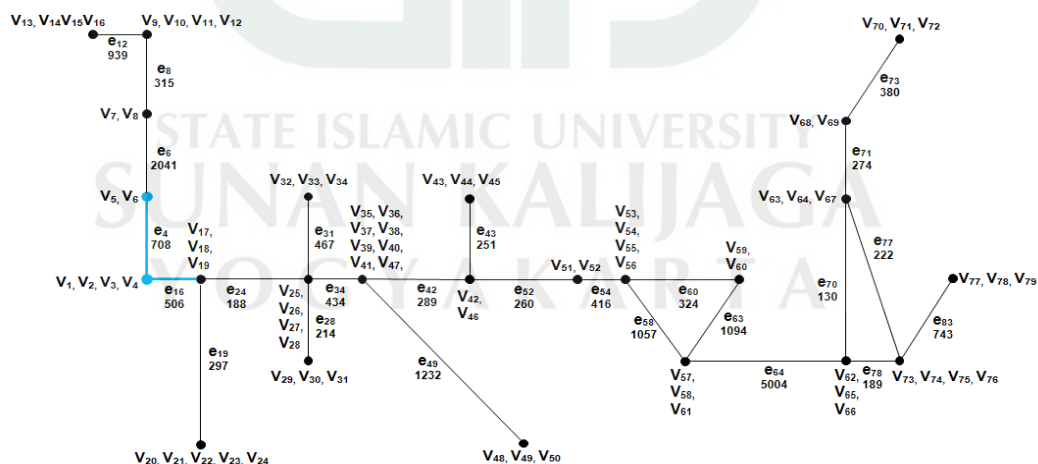
Lampiran 2

Iterasi-81 sampai dengan Iterasi-102

Algoritma Boruvka Metode *Contracted Graph*

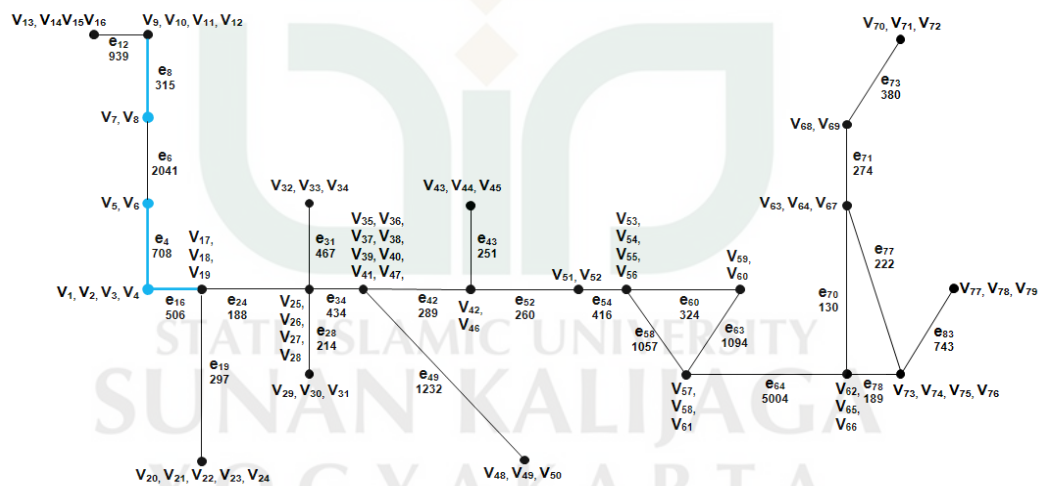
Iterasi-81 : Komponen v_5, v_6 bersisian dengan sisi e_4 (708) dan e_6 (2041), maka dipilih sisi e_4 sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25}, e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53}, e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84}, e_{16}, e_4$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\}, \{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\}, \{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\}, \{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\}, \{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\}, \{v_{77}, v_{78}, v_{79}\}$



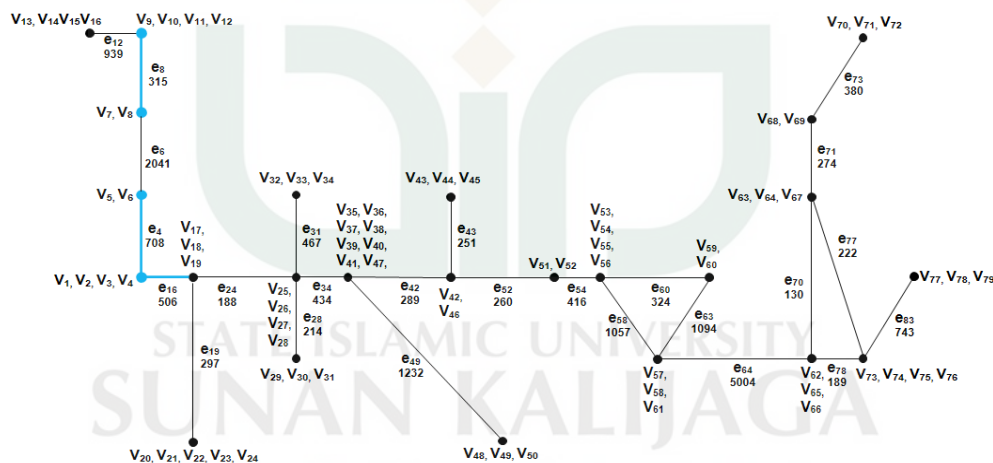
Iterasi-82 : Komponen v_7, v_8 bersisian dengan sisi e_6 (2041) dan e_8 (315), maka dipilih sisi e_8 sebagai sisi berbobot minimum.

<i>T</i>	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ e_{16}, e_4, e_8
<i>Comp</i>	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



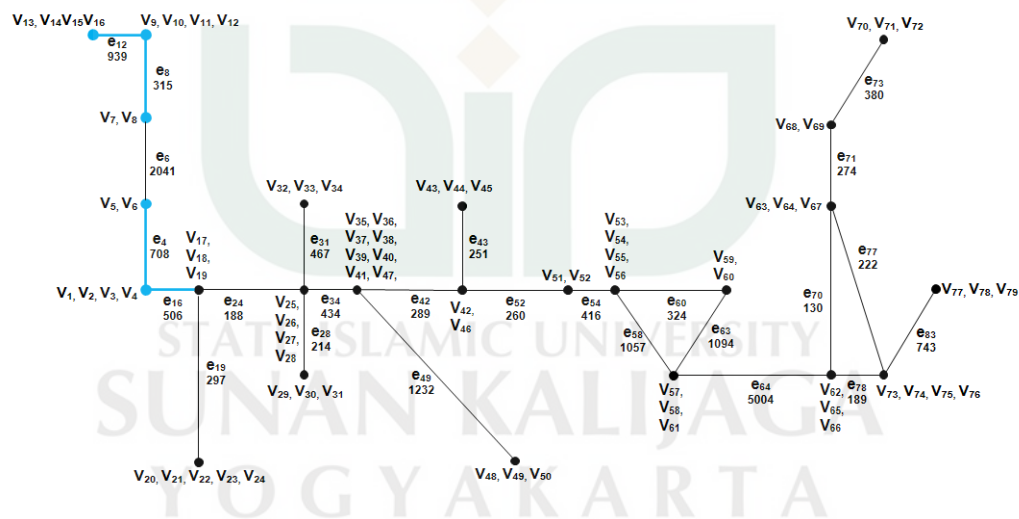
Iterasi-83 : Komponen $v_9, v_{10}, v_{11}, v_{12}$ bersisian dengan sisi e_8 (315) dan e_{12} (939), maka dipilih sisi e_8 sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ e_{16}, e_4, e_8
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



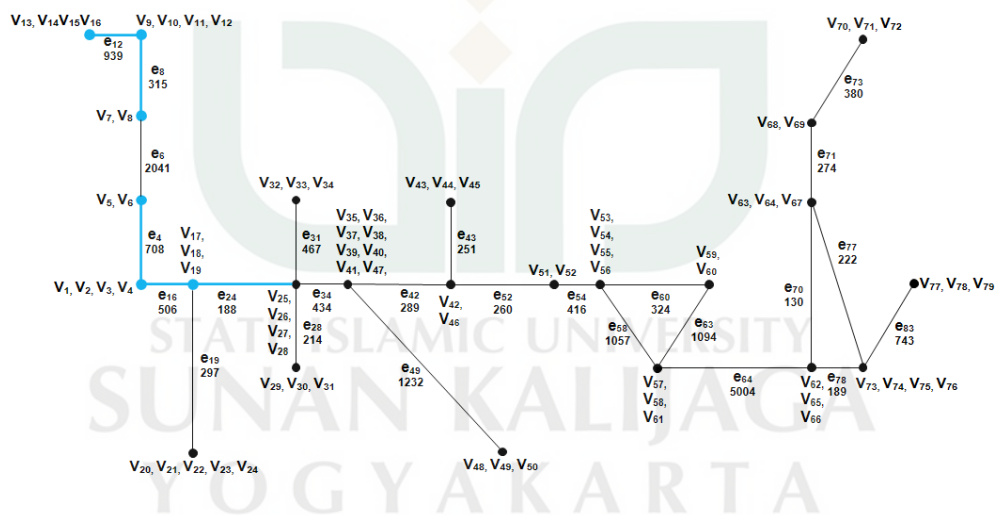
Iterasi-84 : Komponen $v_{13}, v_{14}, v_{15}, v_{16}$ hanya bersisian dengan sisi e_{12} (939), maka dipilih sisi e_{12} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ e_{16}, e_4, e_8, e_{12}
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



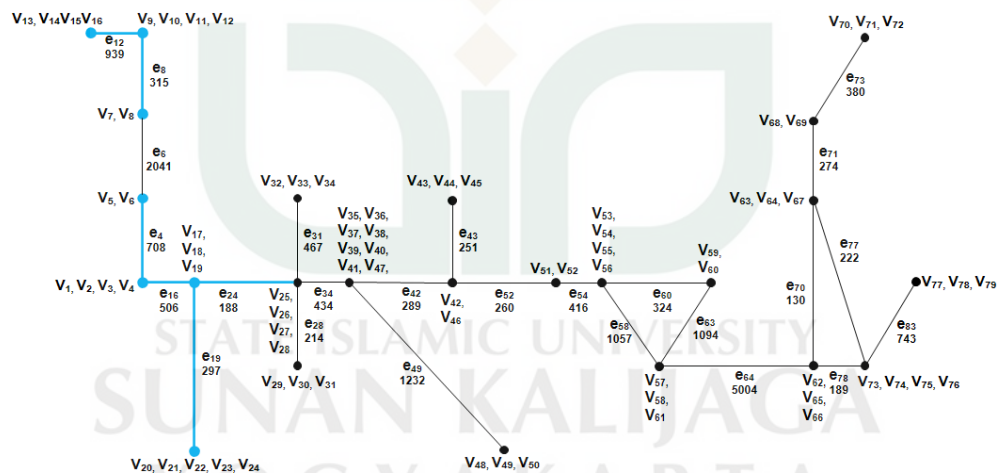
Iterasi-85 : Komponen v_{17}, v_{18}, v_{19} bersisian dengan sisi e_{16} (506), e_{19} (297), dan e_{24} (188), maka dipilih sisi e_{24} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



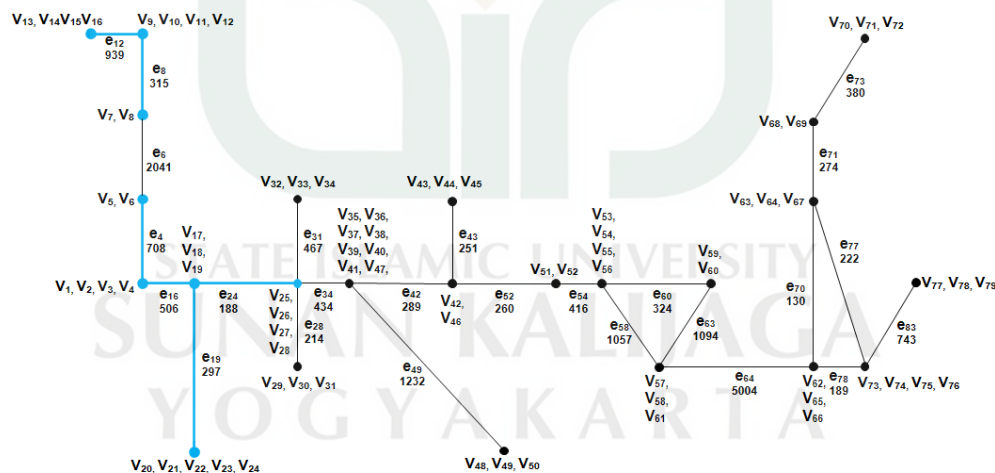
Iterasi-86 : Komponen $v_{20}, v_{21}, v_{22}, v_{23}, v_{24}$ hanya bersisian dengan sisi e_{19} (297),
maka dipilih sisi e_{19} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



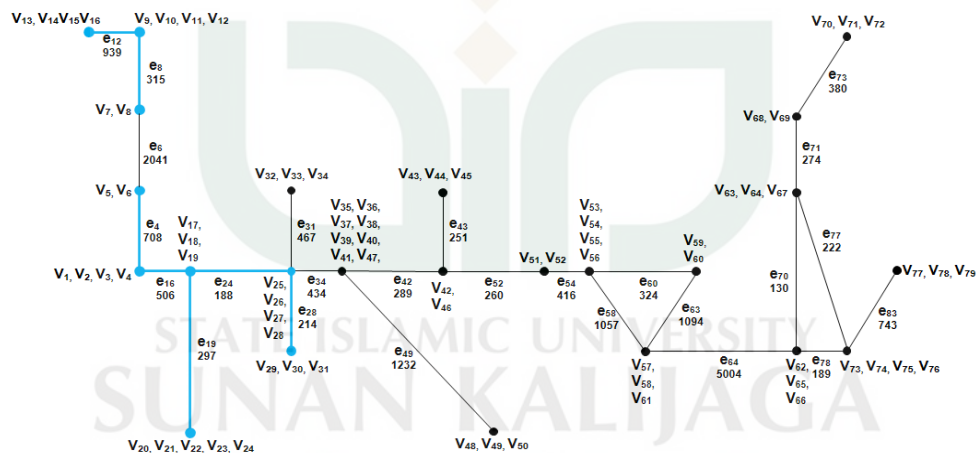
Iterasi-87 : Komponen $v_{25}, v_{26}, v_{27}, v_{28}$ bersisian dengan sisi e_{24} (188), e_{28} (214), e_{31} (467), dan e_{34} (434), maka dipilih sisi e_{24} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



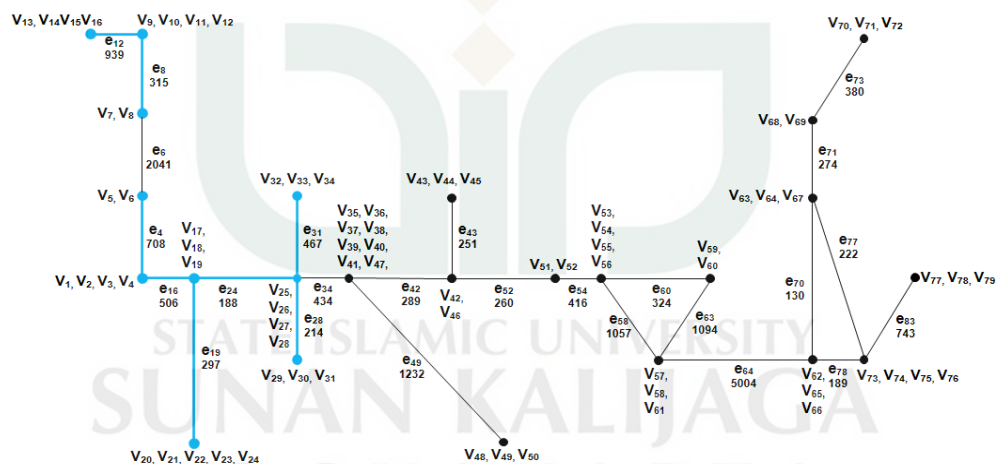
Iterasi-88 : Komponen v_{29}, v_{30}, v_{31} hanya bersisian dengan sisi e_{28} (214), maka dipilih sisi e_{28} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}, e_{28}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



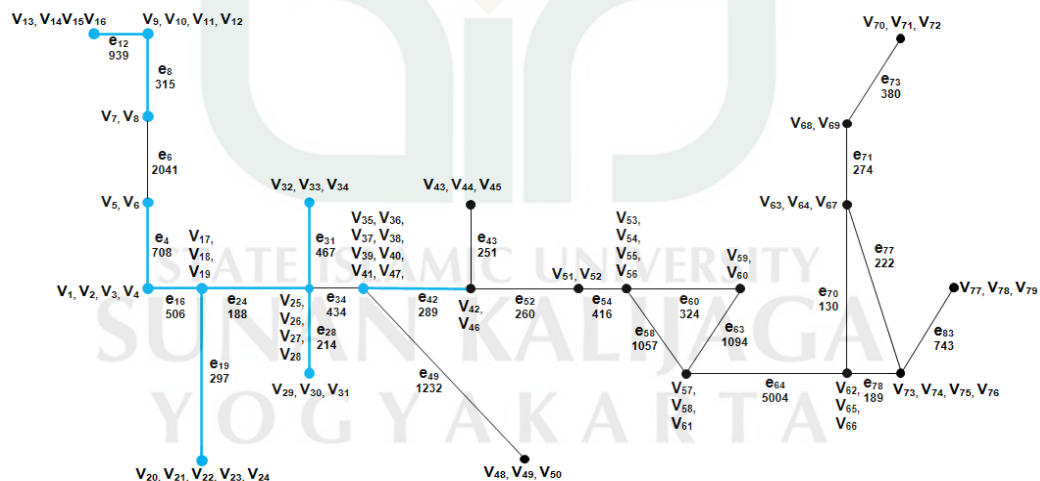
Iterasi-89 : Komponen v_{32}, v_{33}, v_{34} hanya bersisian dengan sisi e_{31} (467), maka dipilih sisi e_{31} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}, e_{28}, e_{31}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



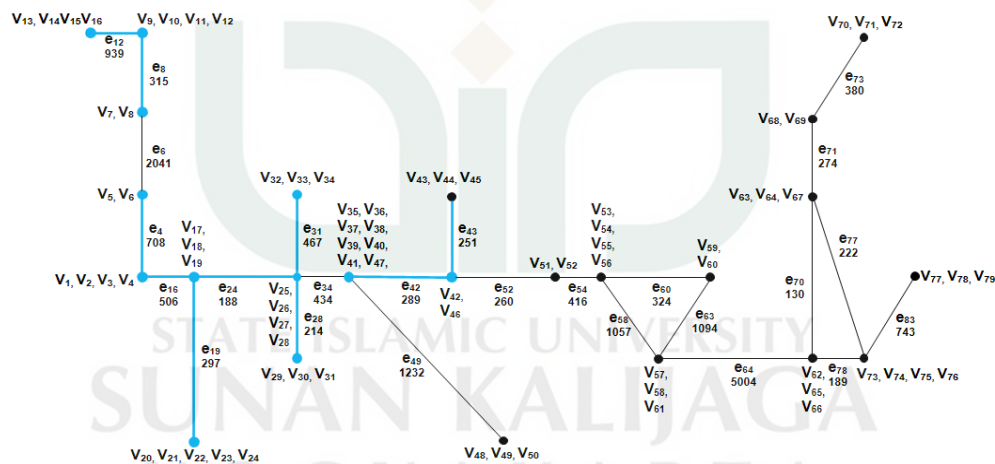
Iterasi-90 : Komponen $v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}$ bersisian dengan sisi e_{34} (434), e_{42} (289), dan e_{49} (1232), maka dipilih sisi e_{42} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}, e_{28}, e_{31}, e_{42}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



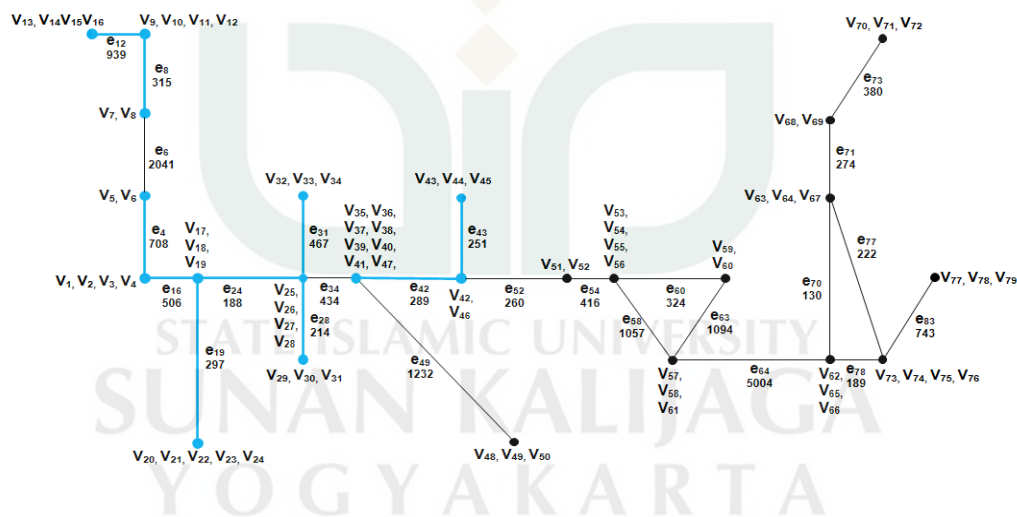
Iterasi-91 : Komponen v_{42} , v_{46} bersisian dengan sisi e_{42} (289), e_{43} (251), dan e_{52} (260), maka dipilih sisi e_{43} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}, e_{28}, e_{31}, e_{42}, e_{43}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



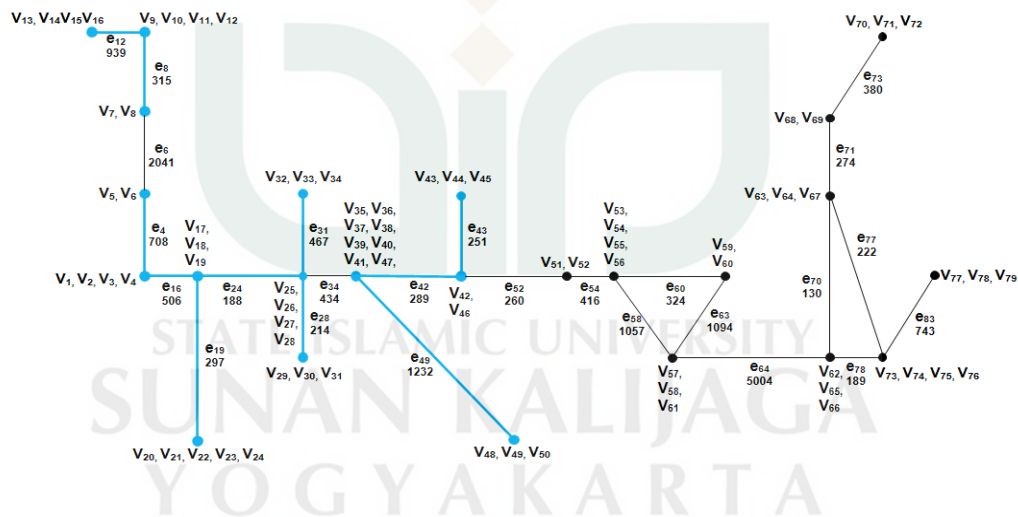
Iterasi-92 : Komponen v_{43} , v_{44} , v_{45} hanya bersisian dengan sisi e_{43} (251), maka dipilih sisi e_{43} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}, e_{28}, e_{31}, e_{42}, e_{43}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



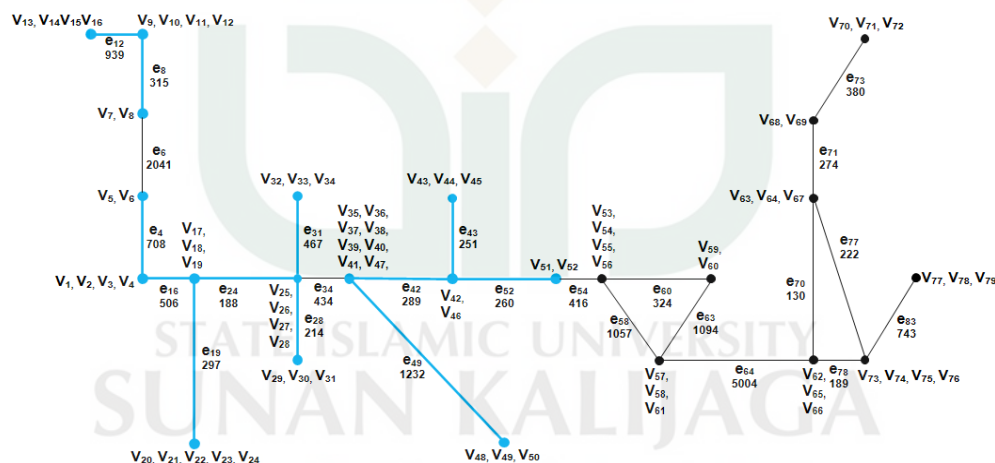
Iterasi-93 : Komponen v_{48}, v_{49}, v_{50} hanya bersisian dengan sisi e_{49} (1232), maka dipilih sisi e_{49} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}, e_{28}, e_{31}, e_{42}, e_{43}, e_{49}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



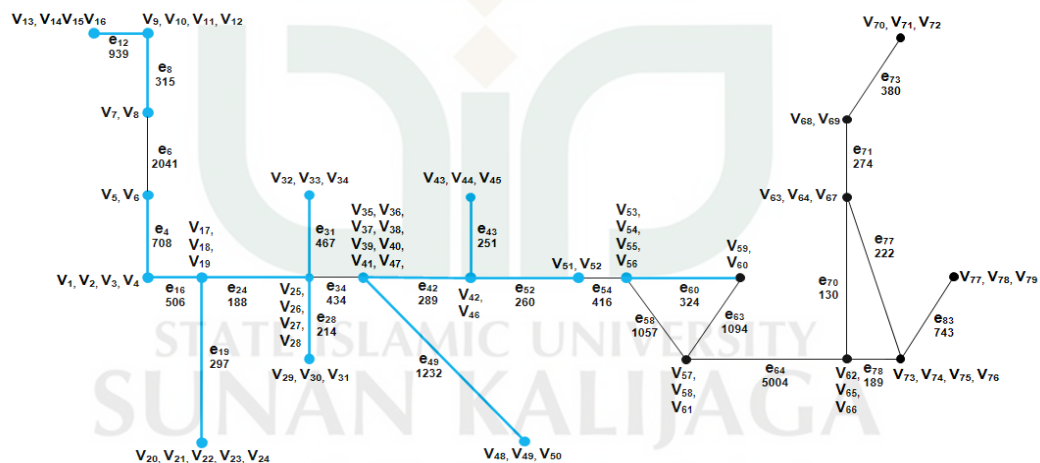
Iterasi-94 : Komponen v_{51}, v_{52} bersisian dengan sisi e_{52} (260) dan e_{54} (416), maka dipilih sisi e_{52} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}, e_{28}, e_{31}, e_{42}, e_{43}, e_{49}, e_{52}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



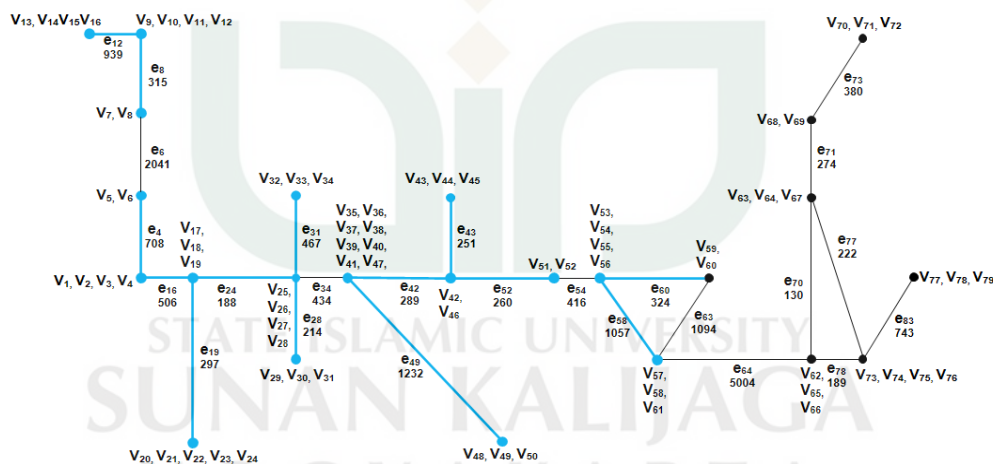
Iterasi-95 : Komponen $v_{53}, v_{54}, v_{55}, v_{56}$ bersisian dengan sisi e_{54} (416), e_{58} (1057), dan e_{60} (324), maka dipilih sisi e_{60} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}, e_{28}, e_{31}, e_{42}, e_{43}, e_{49}, e_{52}, e_{60}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



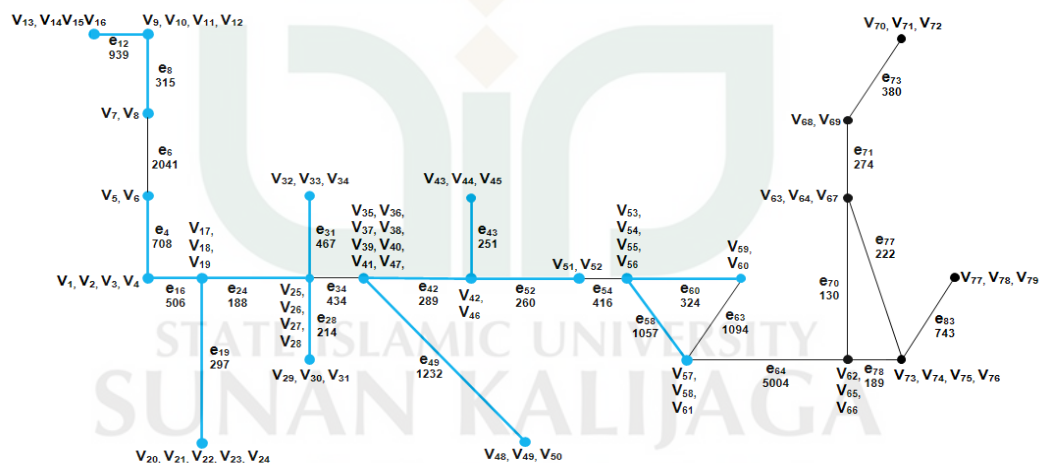
Iterasi-96 : Komponen v_{57}, v_{58}, v_{61} bersisian dengan sisi e_{58} (1057), e_{63} (1094), dan e_{64} (5004), maka dipilih sisi e_{58} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}, e_{28}, e_{31}, e_{42}, e_{43}, e_{49}, e_{52}, e_{60}, e_{58}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



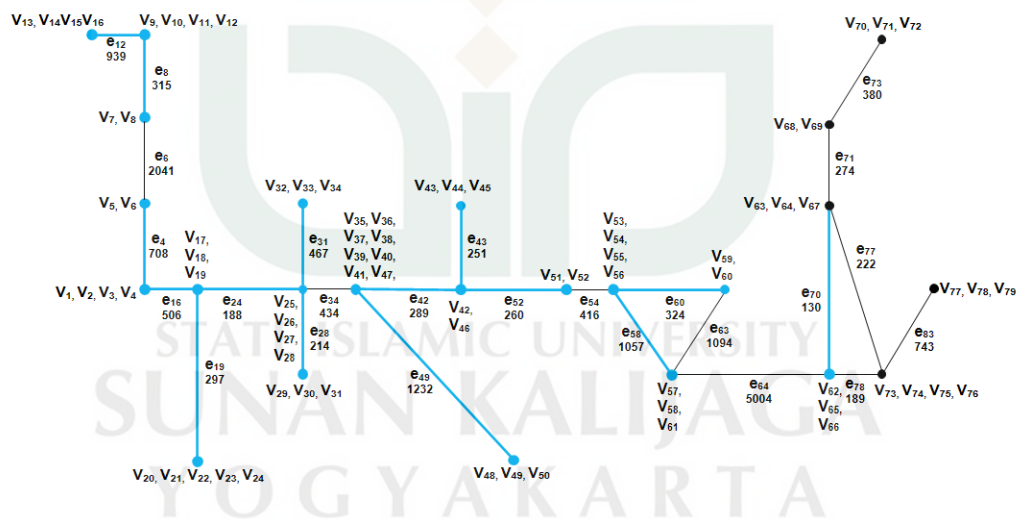
Iterasi-97 : Komponen v_{59}, v_{60} bersisian dengan sisi e_{60} (324) dan e_{63} (1094), maka dipilih sisi e_{60} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}, e_{28}, e_{31}, e_{42}, e_{43}, e_{49}, e_{52}, e_{60}, e_{58}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



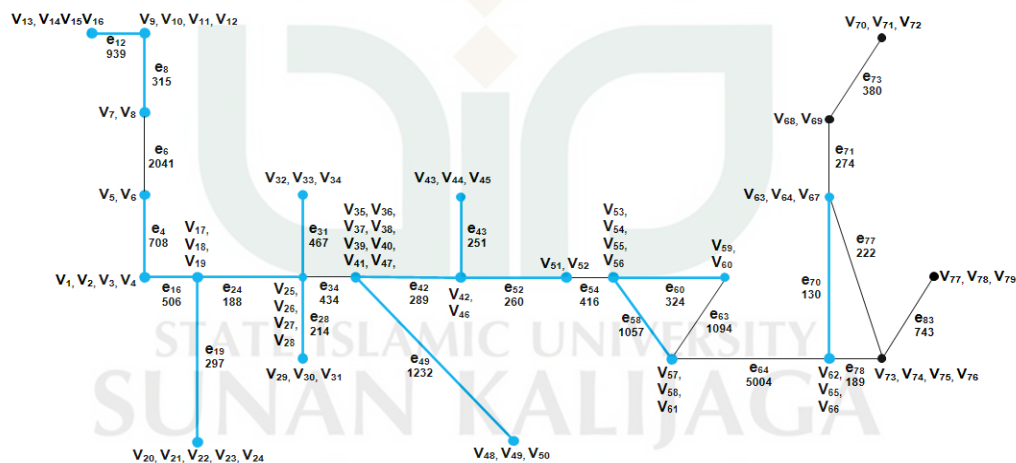
Iterasi-98 : Komponen v_{62}, v_{65}, v_{66} bersisian dengan sisi e_{64} (5004), e_{70} (130), dan e_{78} (189), maka dipilih sisi e_{70} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}, e_{28}, e_{31}, e_{42}, e_{43}, e_{49}, e_{52}, e_{60}, e_{58}, e_{70}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



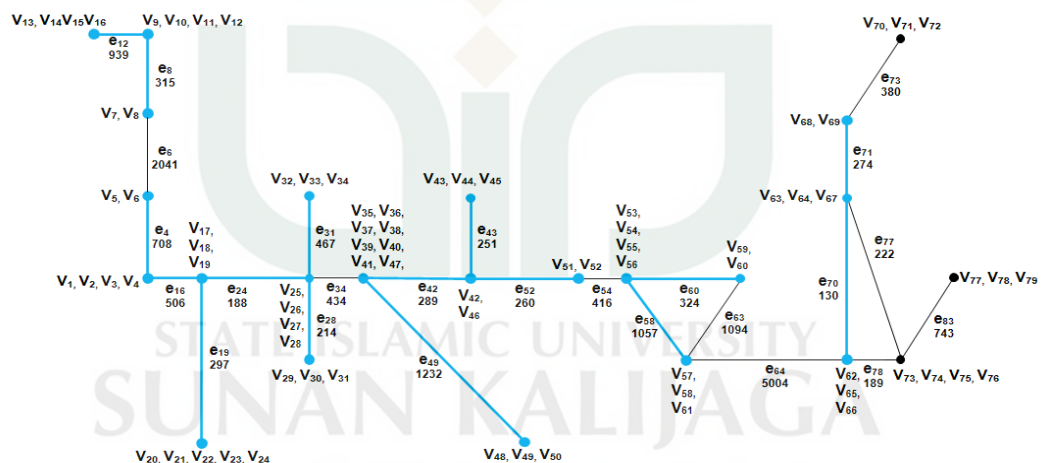
Iterasi-99 : Komponen v_{63}, v_{64}, v_{67} bersisian dengan sisi e_{70} (130), e_{71} (274), dan e_{77} (222), maka dipilih sisi e_{70} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}, e_{28}, e_{31}, e_{42}, e_{43}, e_{49}, e_{52}, e_{60}, e_{58}, e_{70}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



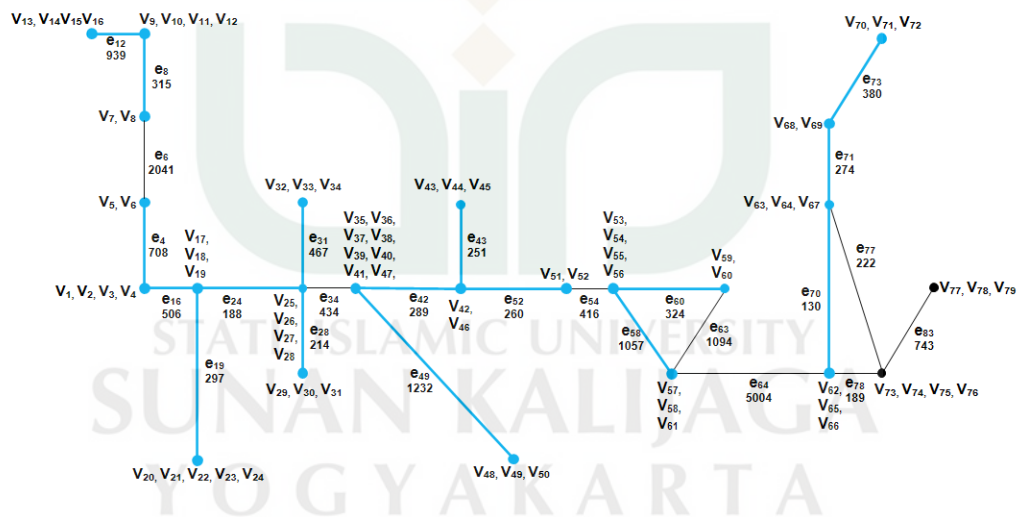
Iterasi-100 : Komponen v_{68}, v_{69} bersisian dengan sisi e_{71} (274) dan e_{73} (380), maka dipilih sisi e_{71} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}, e_{28}, e_{31}, e_{42}, e_{43}, e_{49}, e_{52}, e_{60}, e_{58}, e_{70}, e_{71}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



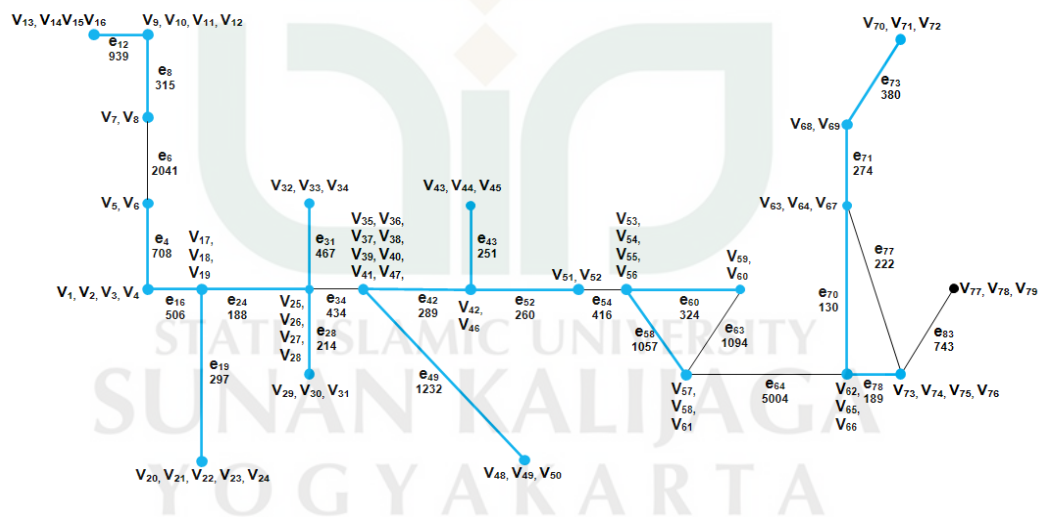
Iterasi-101 : Komponen v_{70}, v_{71}, v_{72} hanya bersisian dengan sisi e_{73} (380), maka dipilih sisi e_{73} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}, e_{28}, e_{31}, e_{42}, e_{43}, e_{49}, e_{52}, e_{60}, e_{58}, e_{70}, e_{71}, e_{73}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



Iterasi-102 : Komponen $v_{73}, v_{74}, v_{75}, v_{76}$ bersisian dengan sisi e_{77} (222), e_{78} (189), dan e_{83} (743), maka dipilih sisi e_{78} sebagai sisi berbobot minimum.

T	$e_1, e_3, e_2, e_5, e_7, e_{10}, e_9, e_{11}, e_{15}, e_{13}, e_{14}, e_{17}, e_{18}, e_{21}, e_{20}, e_{22}, e_{23}, e_{26}, e_{25},$ $e_{27}, e_{29}, e_{30}, e_{32}, e_{33}, e_{35}, e_{36}, e_{37}, e_{39}, e_{38}, e_{41}, e_{46}, e_{44}, e_{45}, e_{48}, e_{50}, e_{51}, e_{53},$ $e_{56}, e_{55}, e_{57}, e_{59}, e_{61}, e_{62}, e_{68}, e_{67}, e_{66}, e_{69}, e_{72}, e_{76}, e_{74}, e_{80}, e_{81}, e_{82}, e_{85}, e_{84},$ $e_{16}, e_4, e_8, e_{12}, e_{24}, e_{19}, e_{28}, e_{31}, e_{42}, e_{43}, e_{49}, e_{52}, e_{60}, e_{58}, e_{70}, e_{71}, e_{73}, e_{78}$
Comp	$\{v_1, v_2, v_3, v_4\}, \{v_5, v_6\}, \{v_7, v_8\}, \{v_9, v_{10}, v_{11}, v_{12}\}, \{v_{13}, v_{14}, v_{15}, v_{16}\},$ $\{v_{17}, v_{18}, v_{19}\}, \{v_{20}, v_{21}, v_{22}, v_{23}, v_{24}\}, \{v_{25}, v_{26}, v_{27}, v_{28}\}, \{v_{29}, v_{30}, v_{31}\},$ $\{v_{32}, v_{33}, v_{34}\}, \{v_{35}, v_{36}, v_{37}, v_{38}, v_{39}, v_{40}, v_{41}, v_{47}\}, \{v_{42}, v_{46}\}, \{v_{43}, v_{44}, v_{45}\},$ $\{v_{48}, v_{49}, v_{50}\}, \{v_{51}, v_{52}\}, \{v_{53}, v_{54}, v_{55}, v_{56}\}, \{v_{57}, v_{58}, v_{61}\}, \{v_{59}, v_{60}\},$ $\{v_{62}, v_{65}, v_{66}\}, \{v_{63}, v_{64}, v_{67}\}, \{v_{68}, v_{69}\}, \{v_{70}, v_{71}, v_{72}\}, \{v_{73}, v_{74}, v_{75}, v_{76}\},$ $\{v_{77}, v_{78}, v_{79}\}$



Lampiran 3

Plot Sisi e_5 Sampai Dengan e_{54}

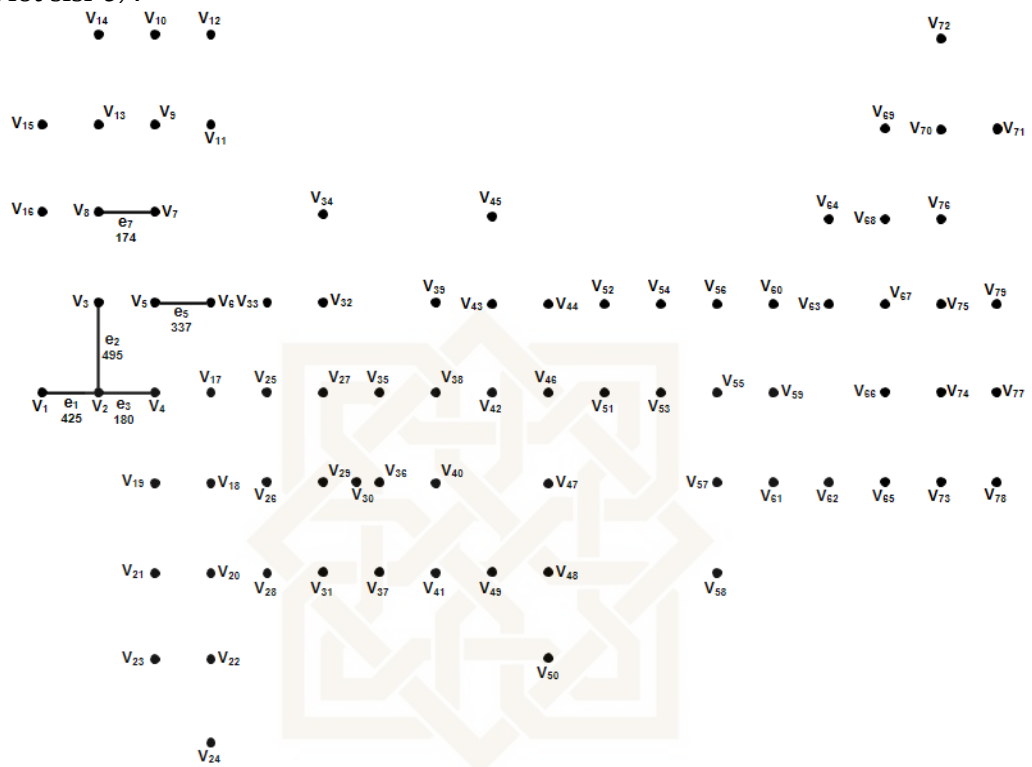
Algoritma Boruvka Metode *Contracted Graph*

Plot sisi e_5 :



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YOGYAKARTA

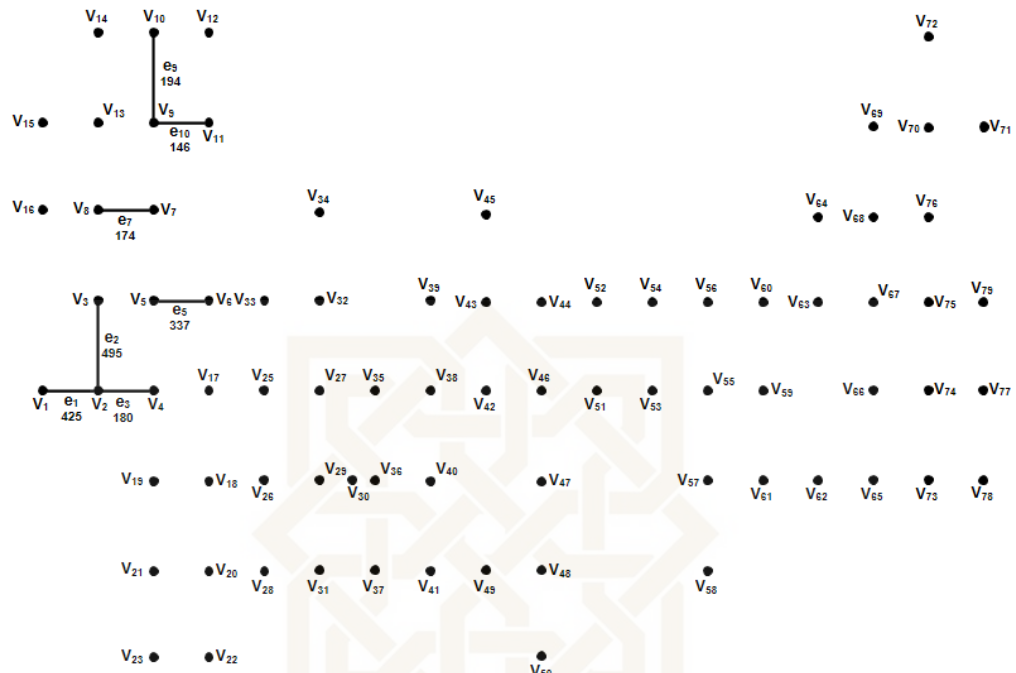
Plot sisi e_7 :



Plot sisi e_{10} :



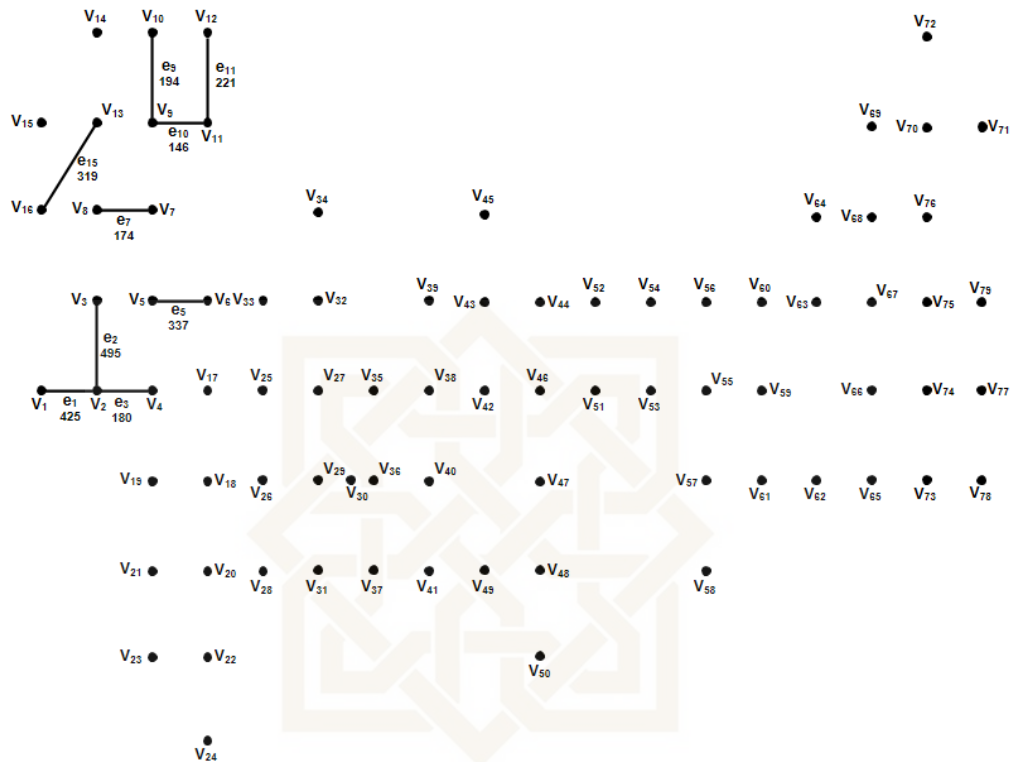
Plot sisi e_9 :



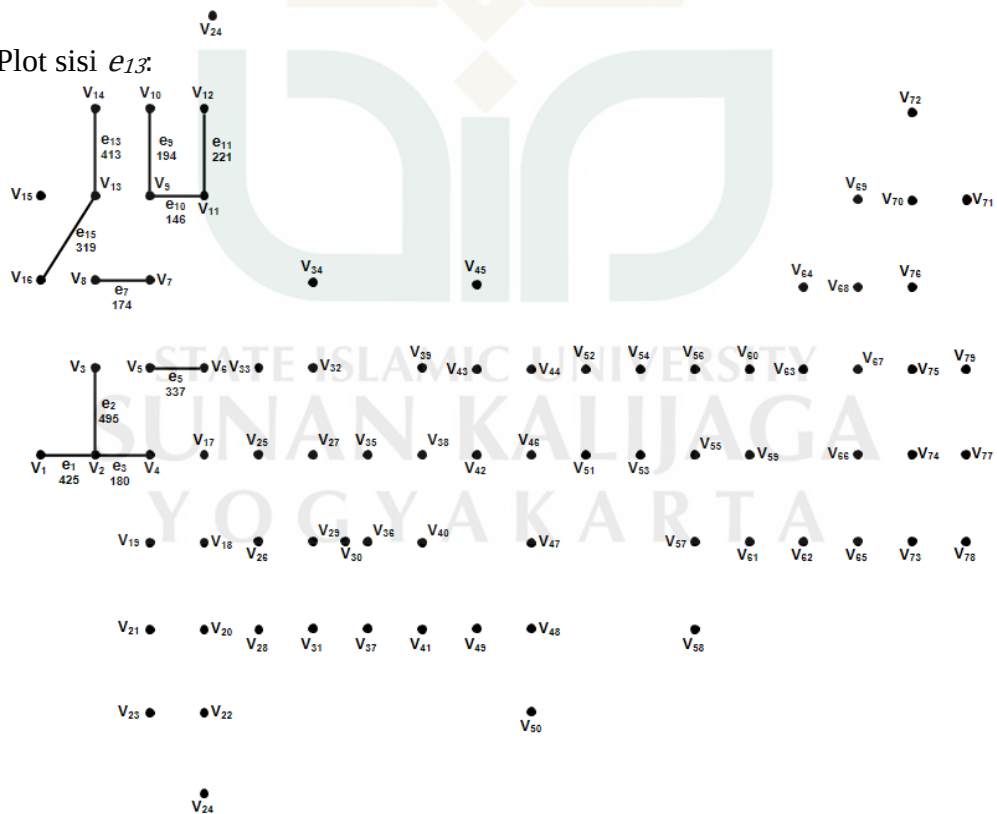
Plot sisi e_{11} :



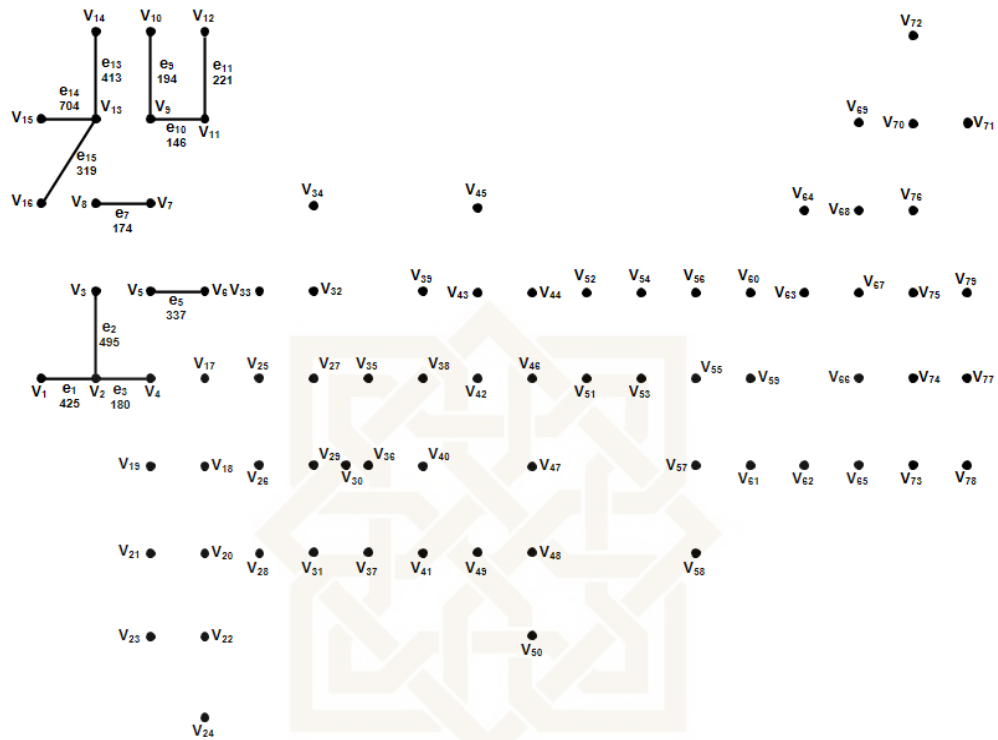
Plot sisi e_{15} :



Plot sisi e_{13} :



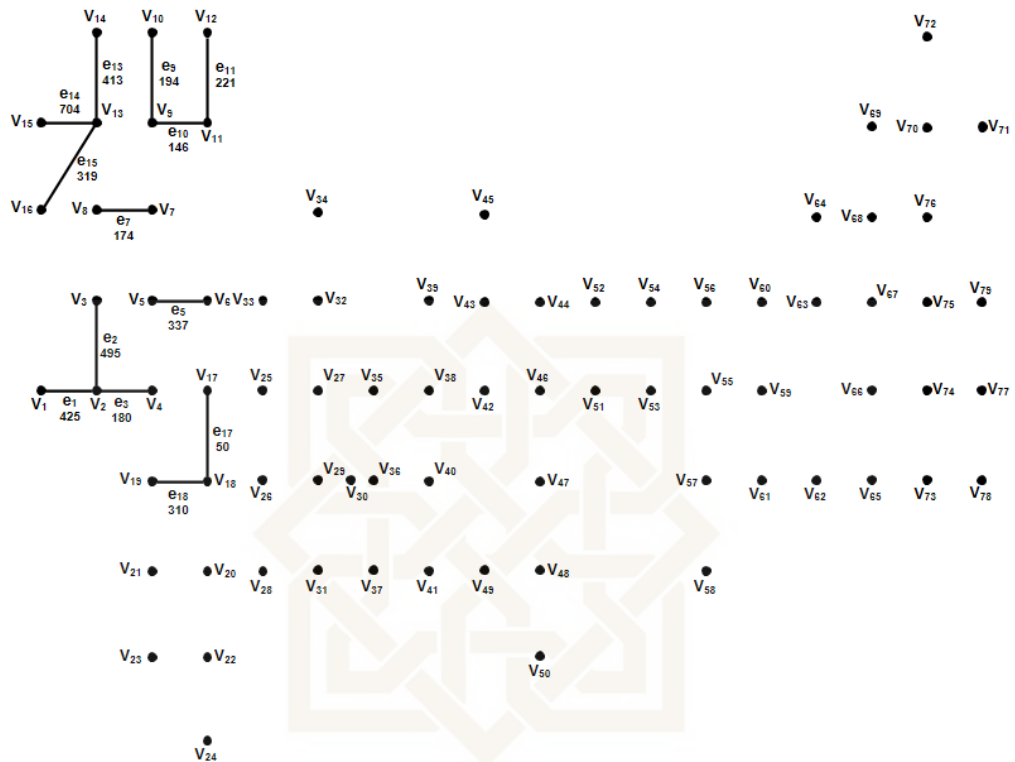
Plot sisi e_{14} :



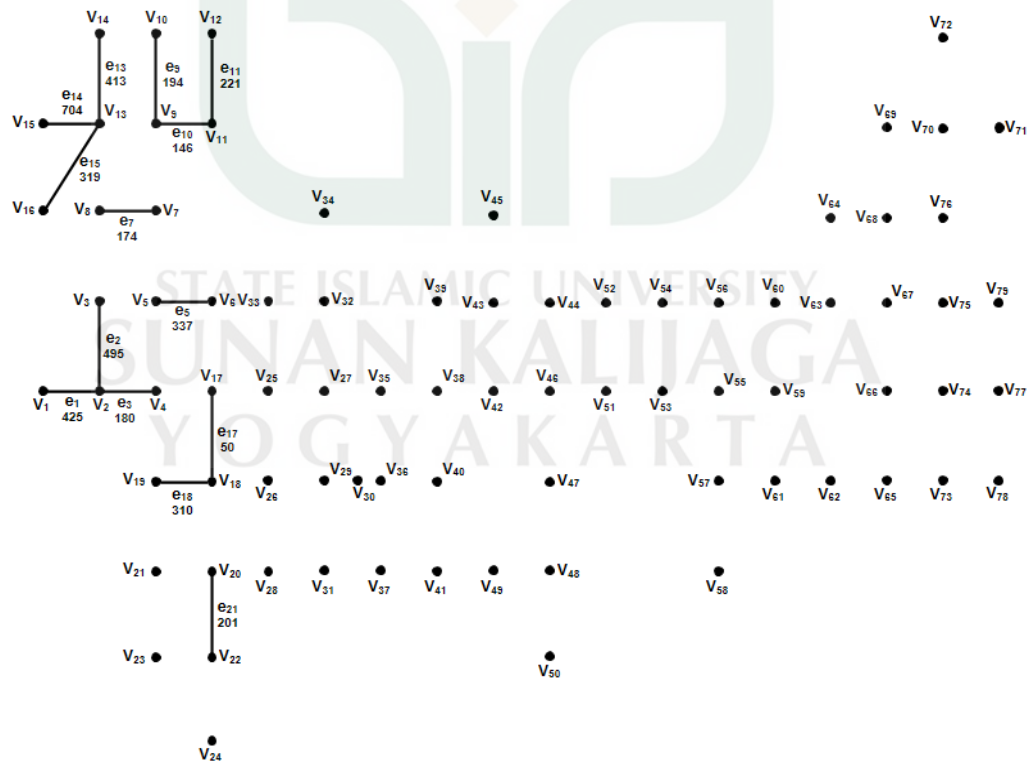
Plot sisi e_{17} :



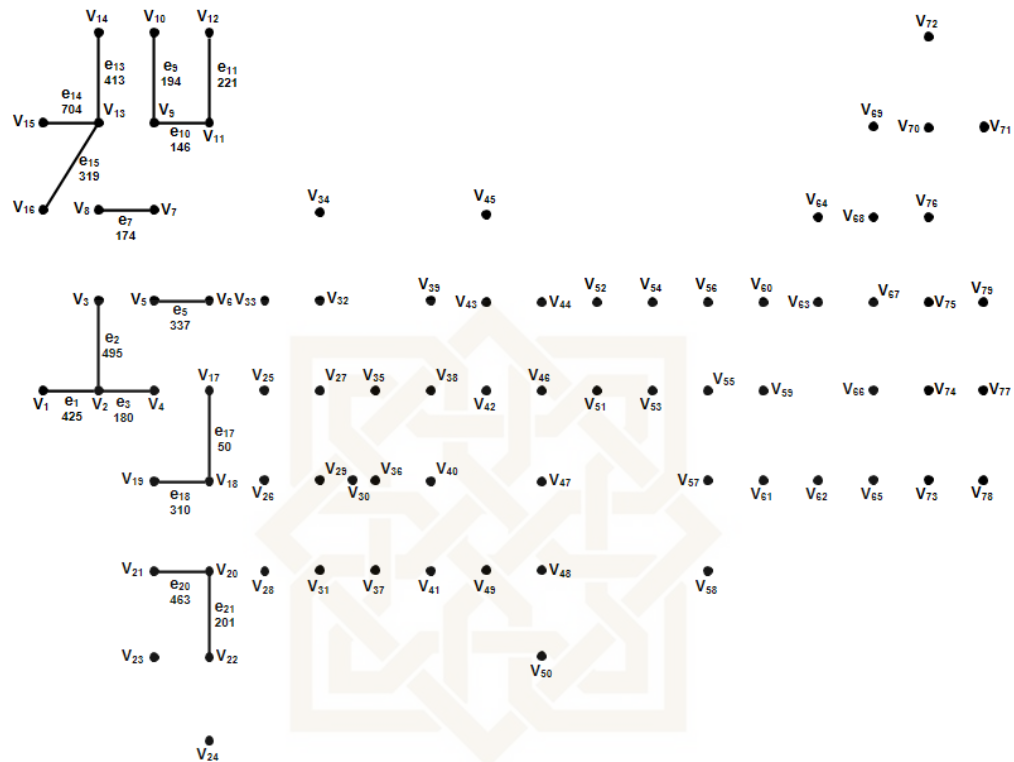
Plot sisi e_{18} :



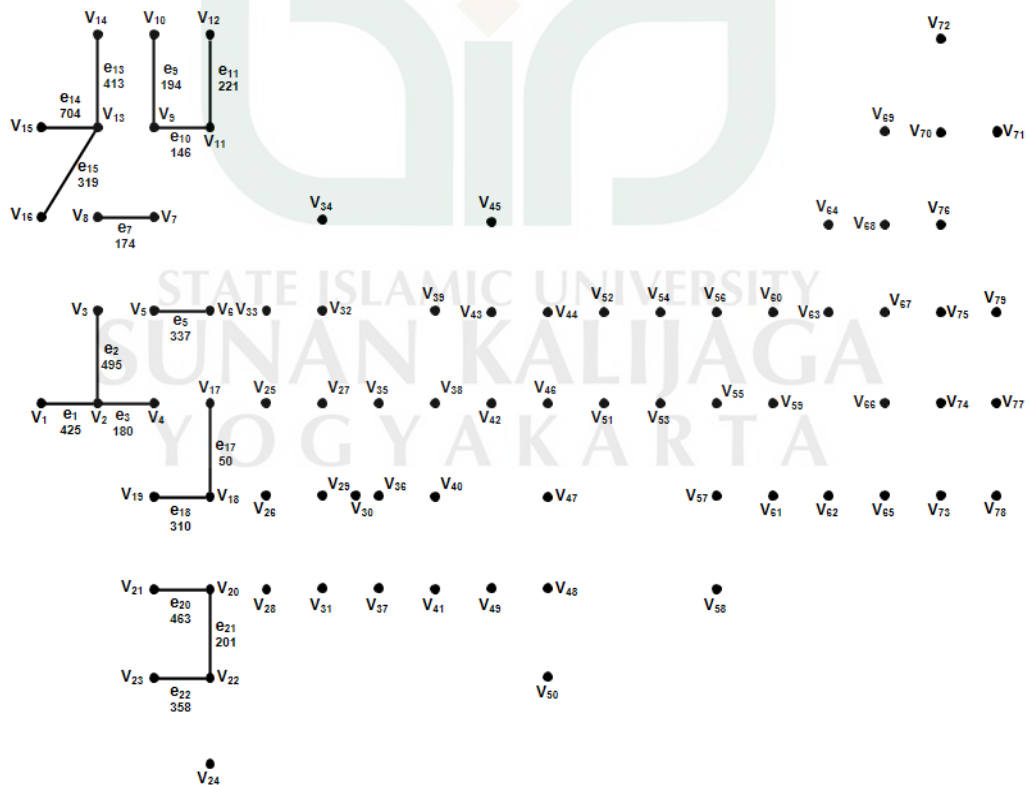
Plot sisi e_{21} :



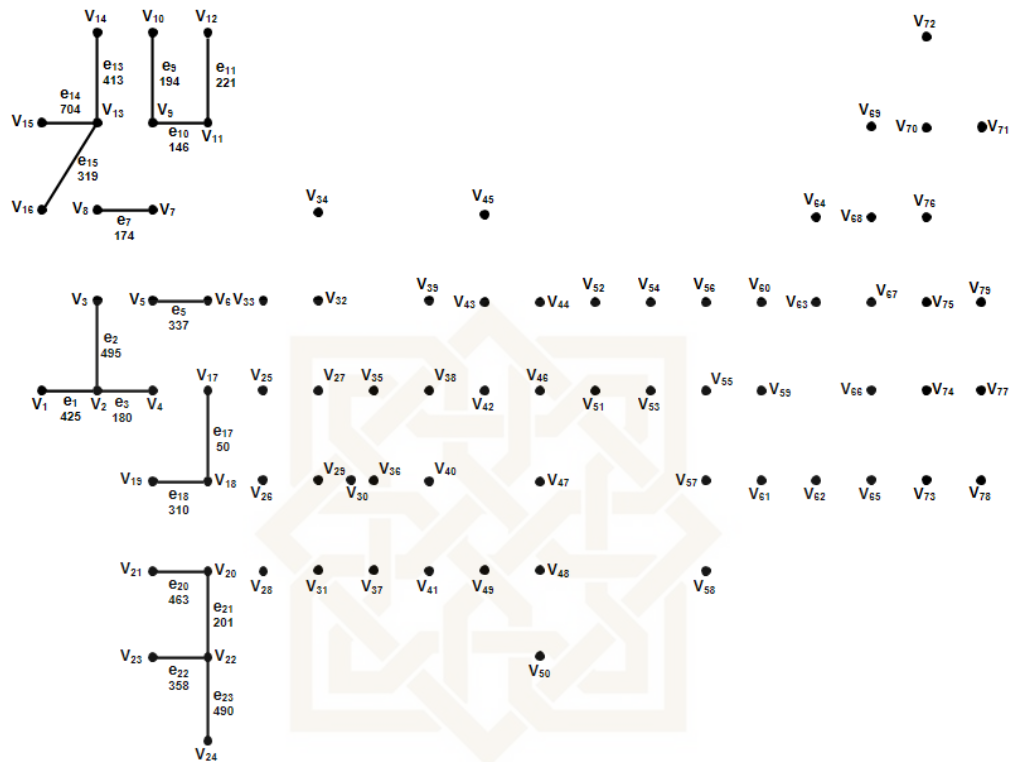
Plot sisi e_{20} :



Plot sisi e_{22} :



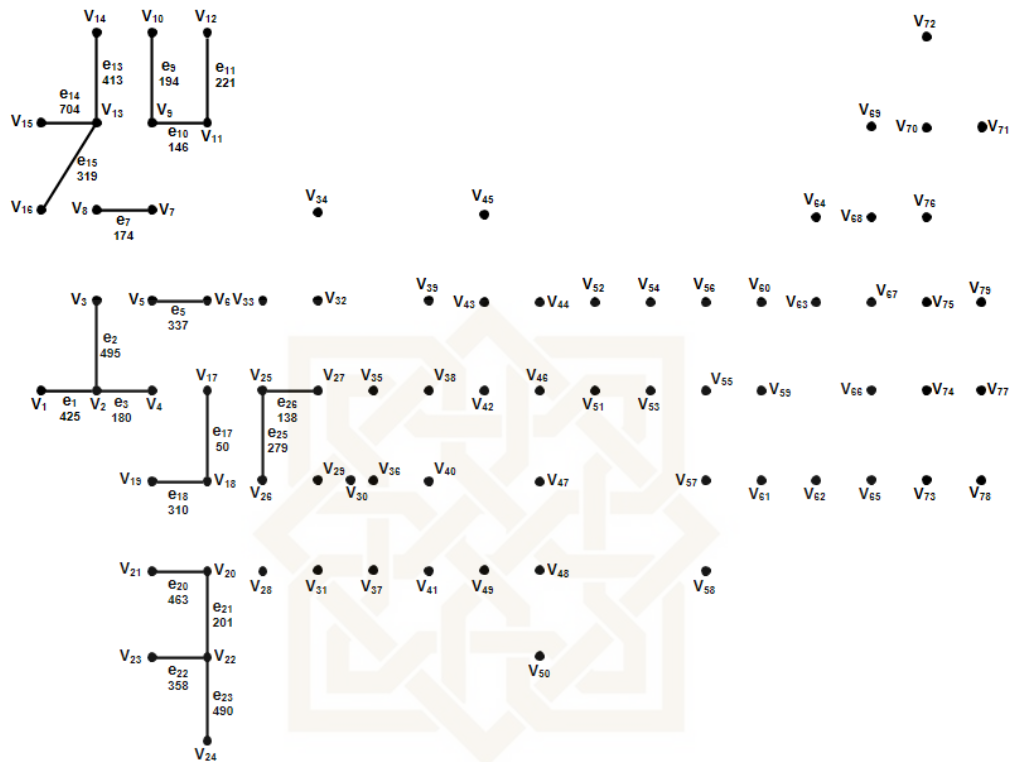
Plot sisi e_{23} :



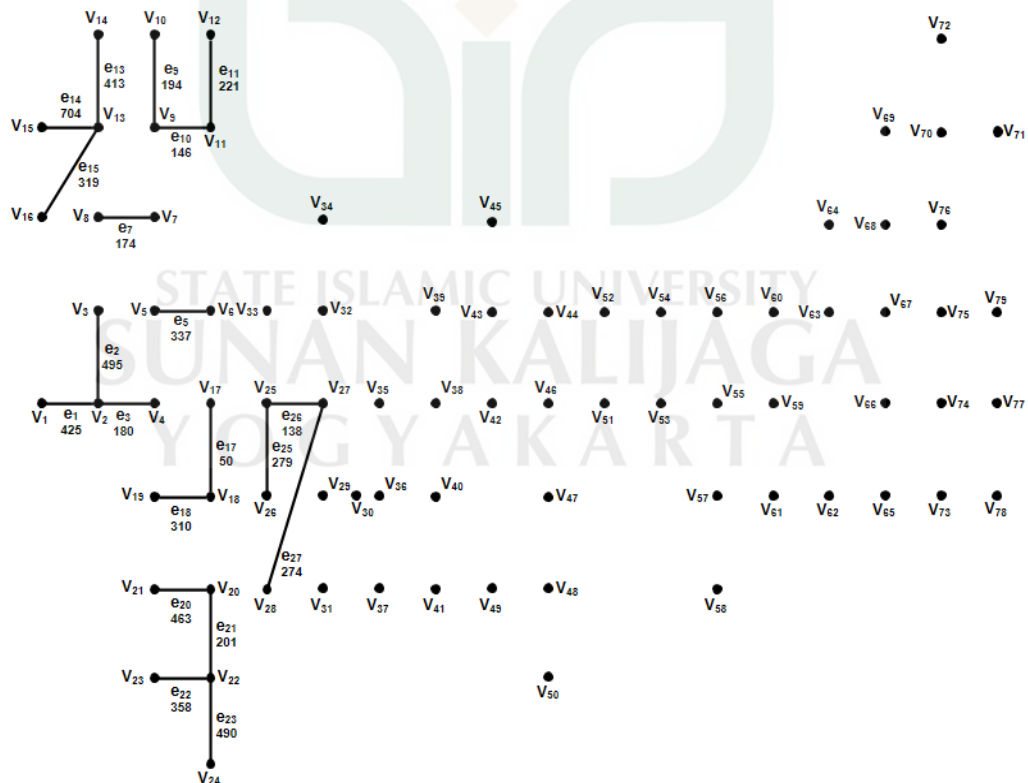
Plot sisi e_{26} :



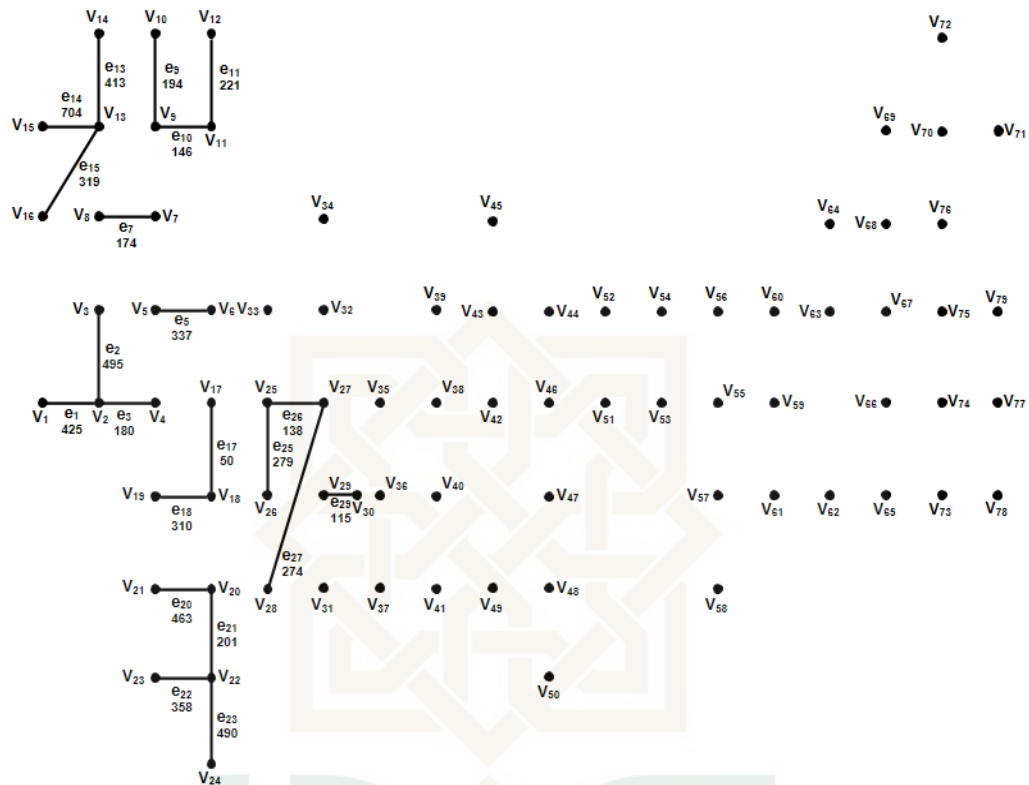
Plot sisi e_{25} :



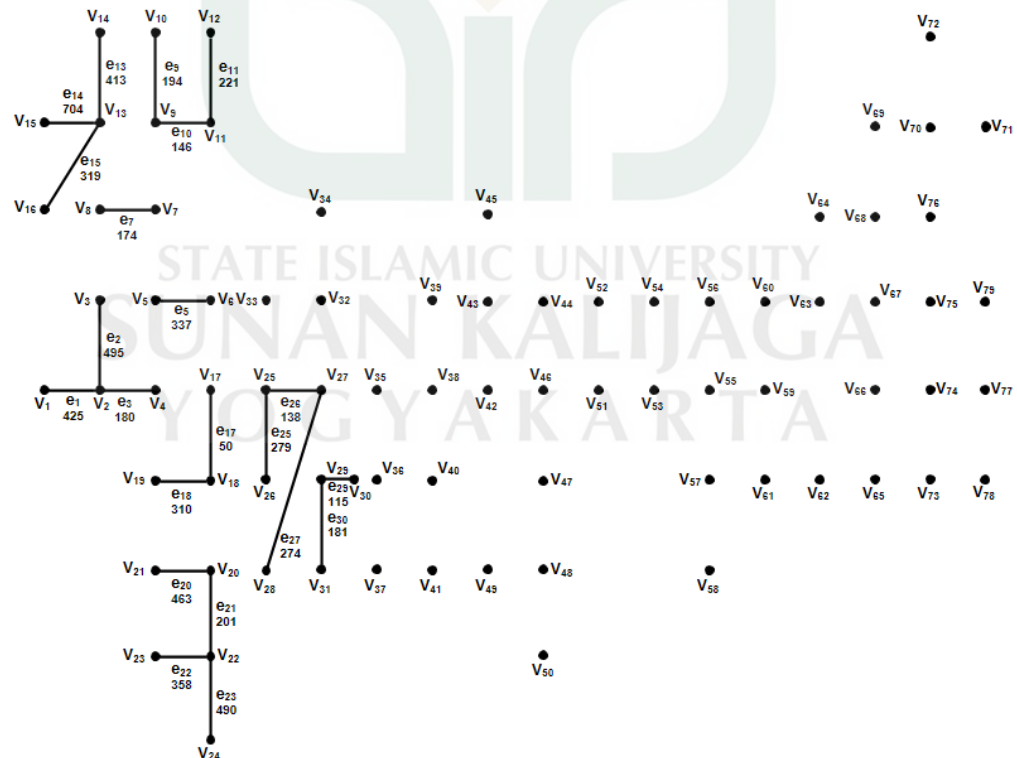
Plot sisi e_{27} :



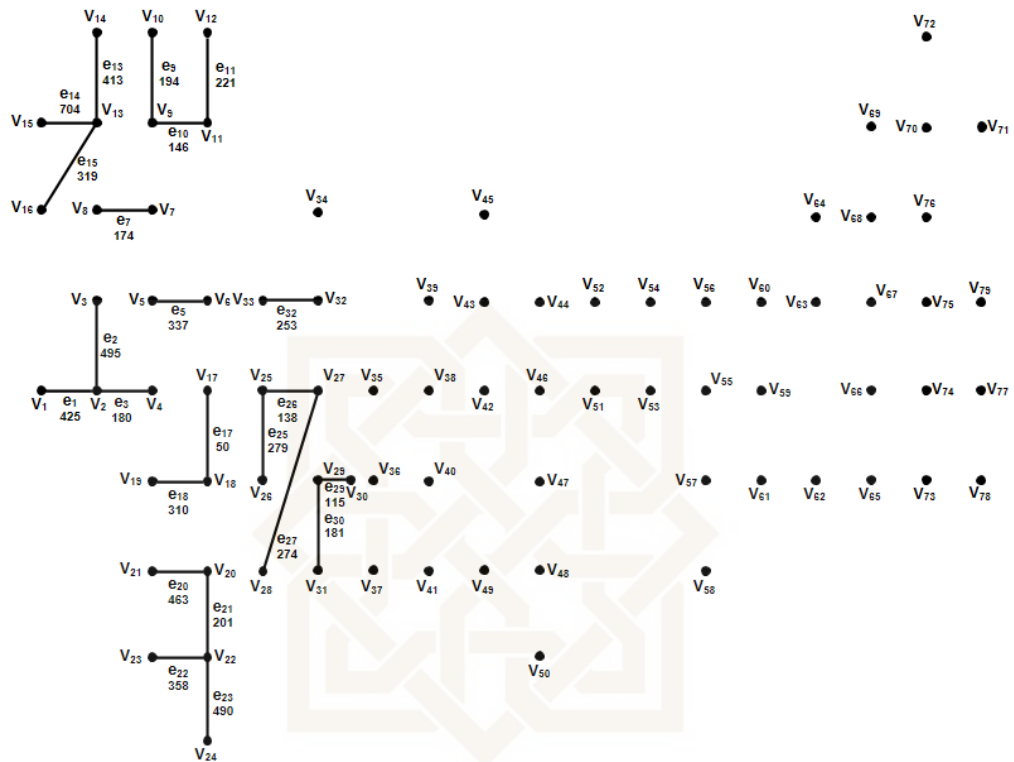
Plot sisi e_{29} :



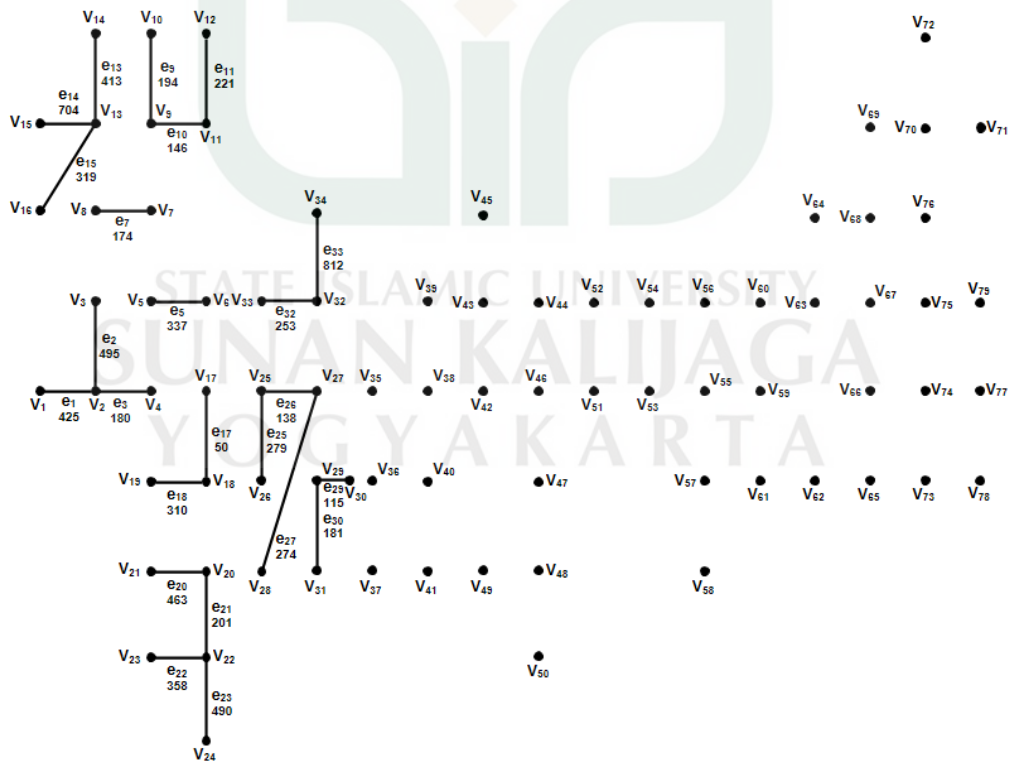
Plot sisi e_{30} :



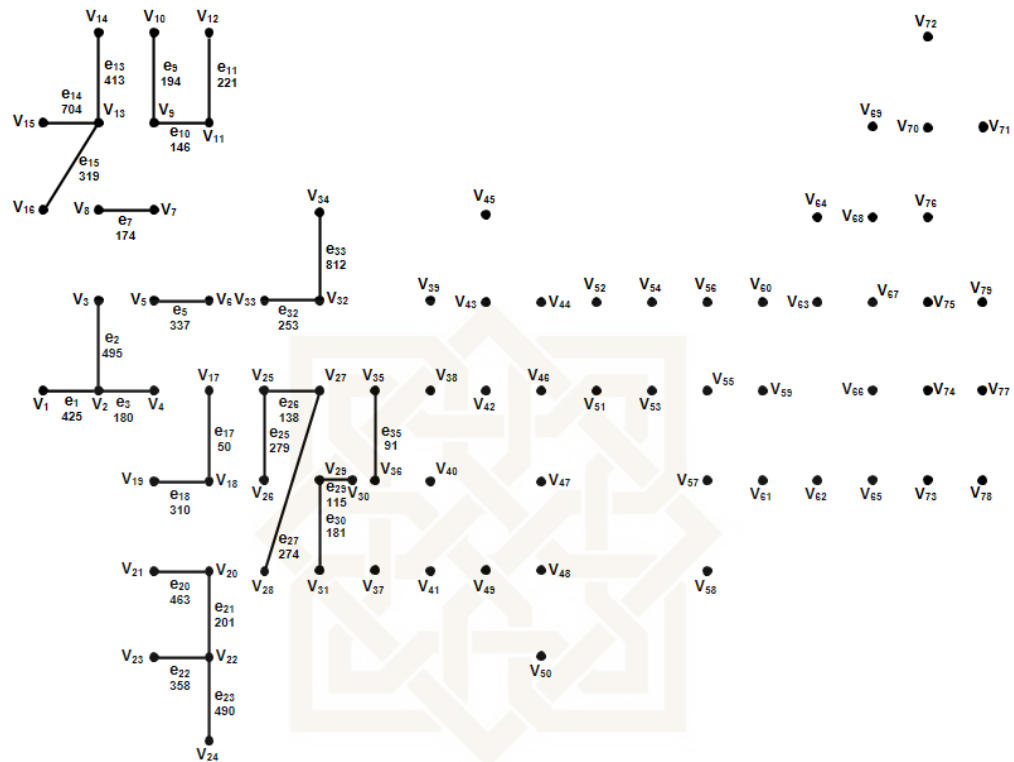
Plot sisi e_{32} :



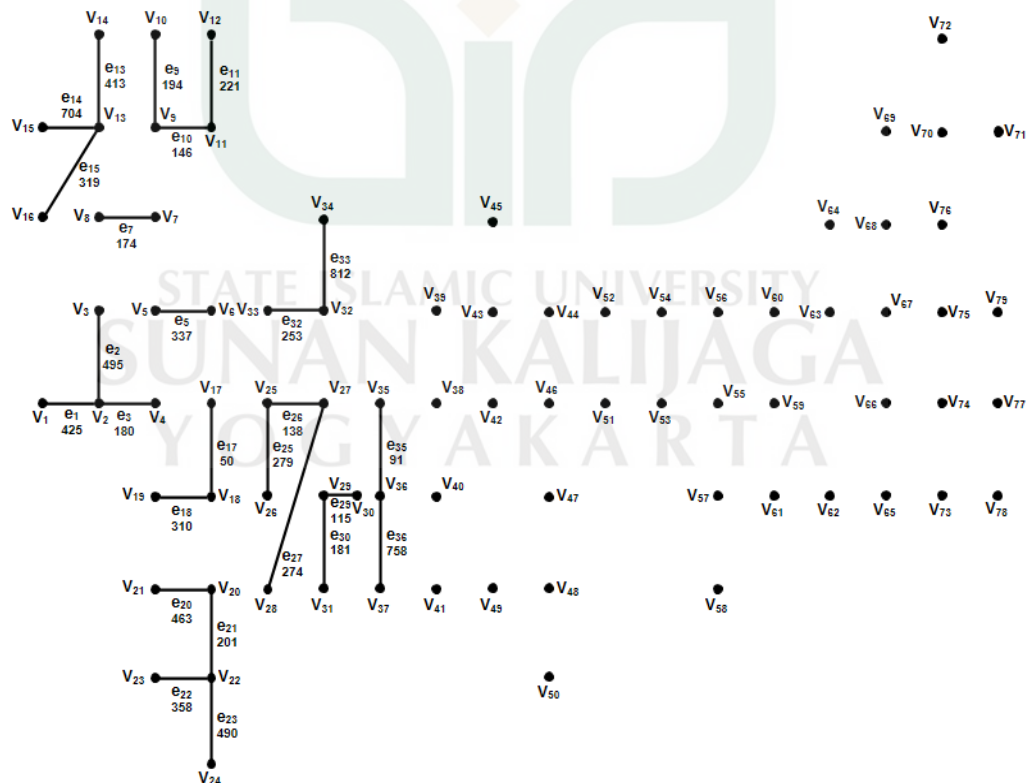
Plot sisi e_{33} :



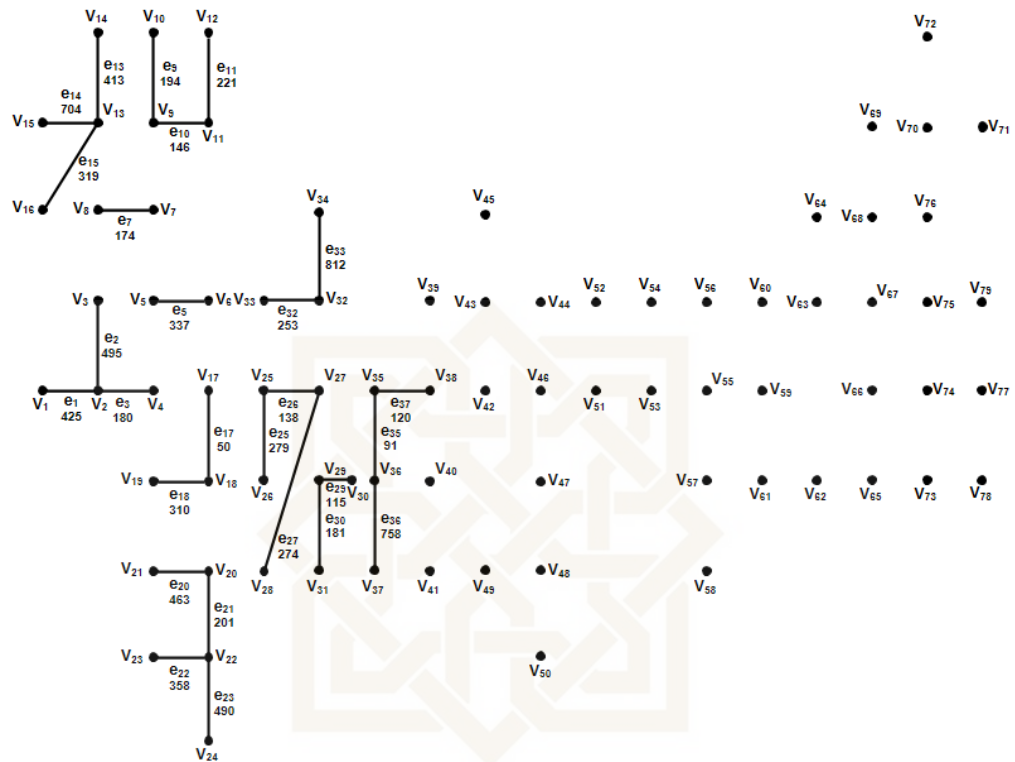
Plot sisi e_{35} :



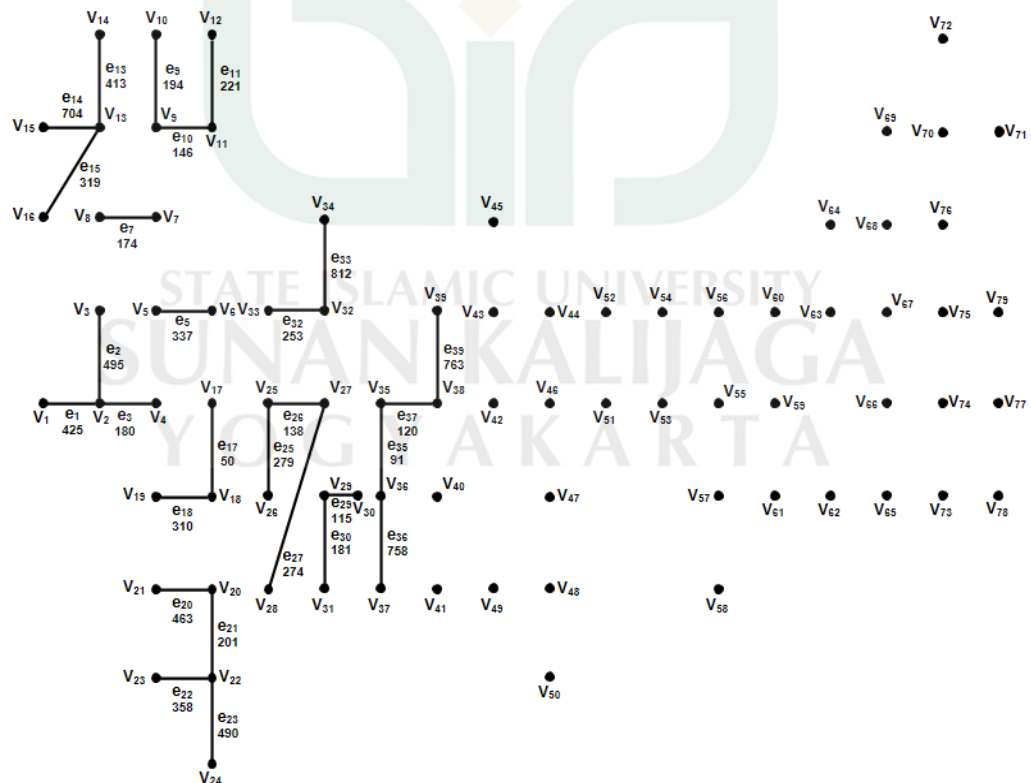
Plot sisi e_{36} :



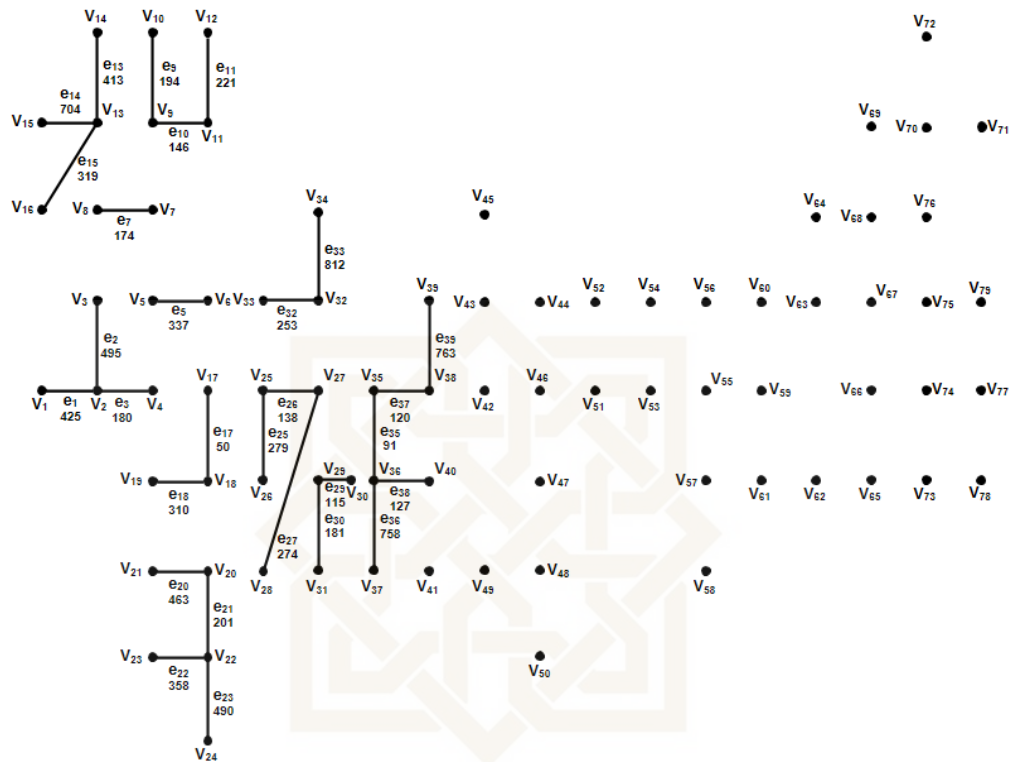
Plot sisi e_{37} :



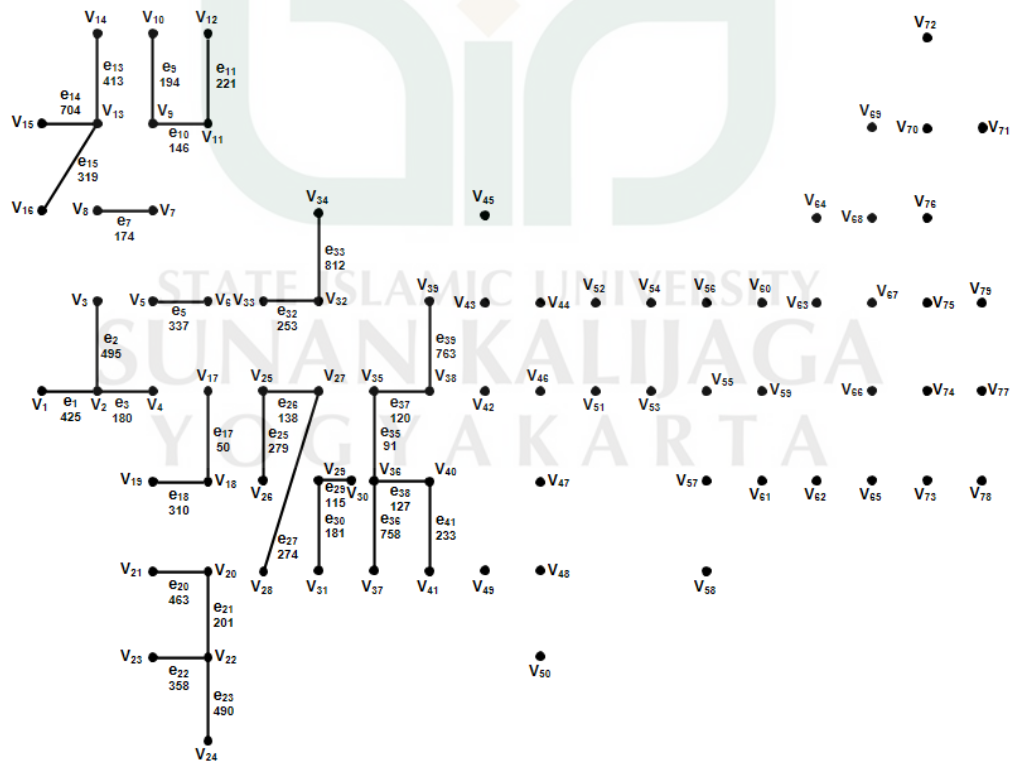
Plot sisi e_{39} :



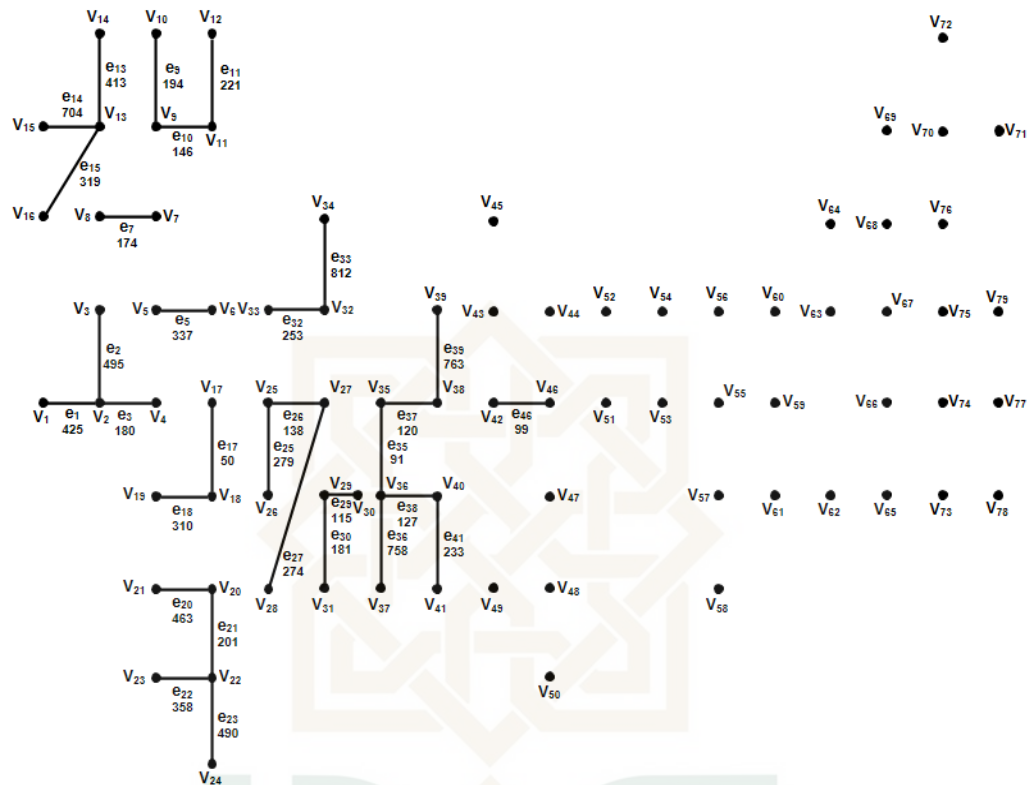
Plot sisi e_{38} :



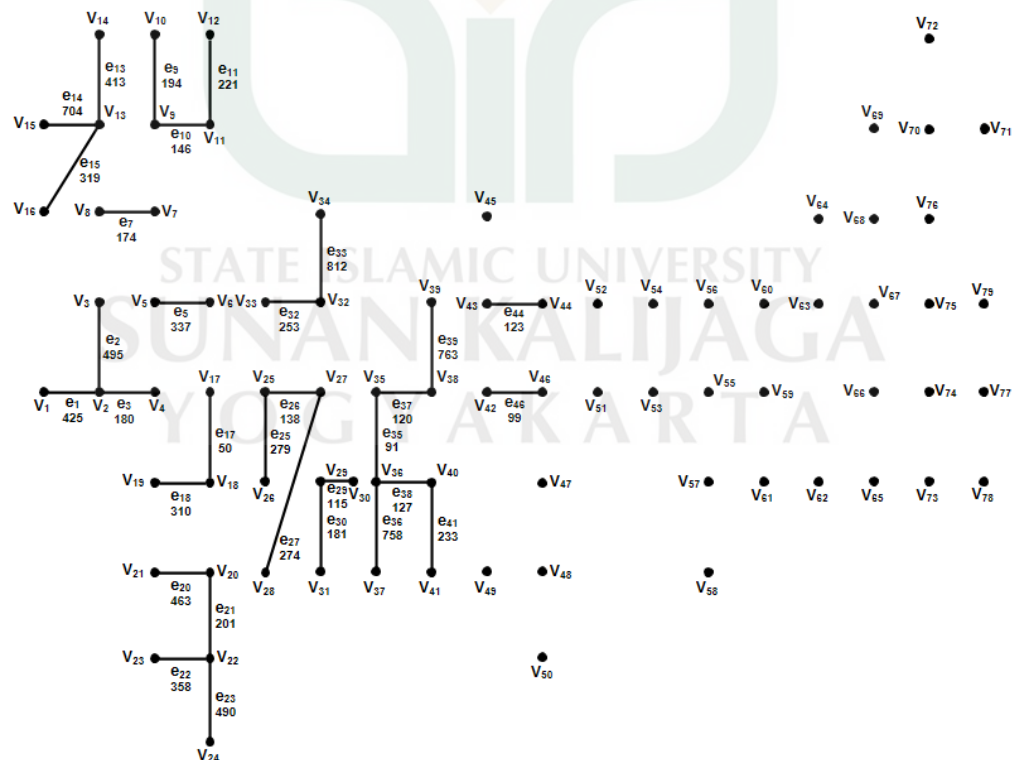
Plot sisi e_{41} :



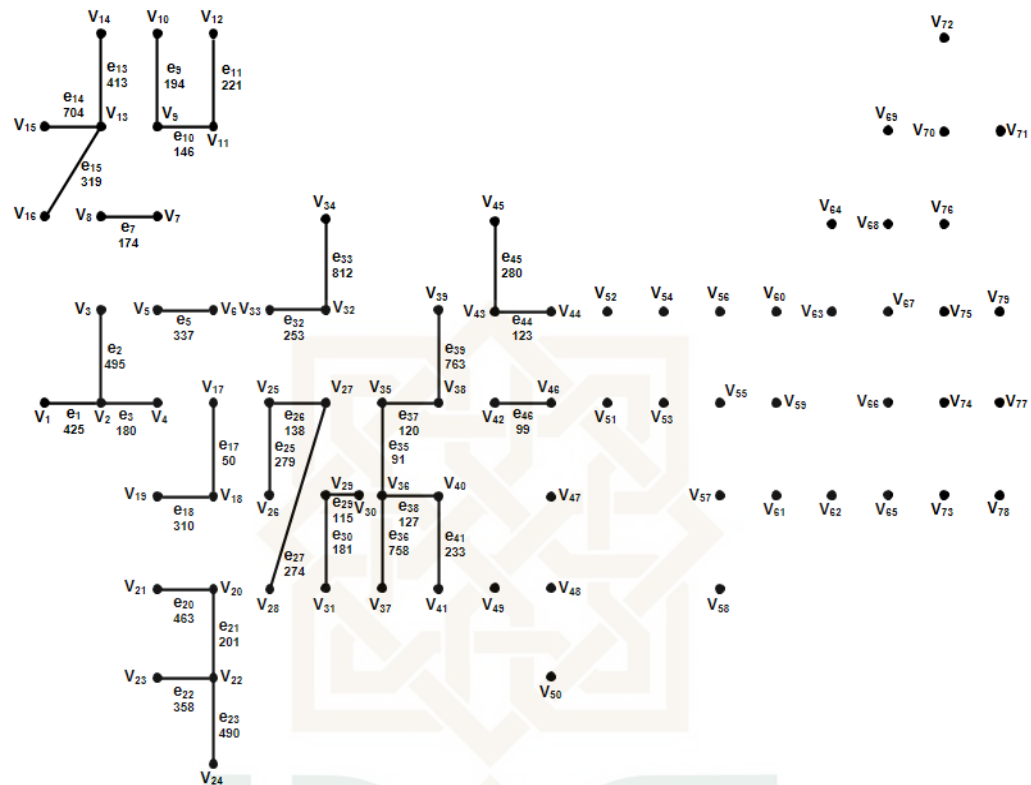
Plot sisi e_{46} :



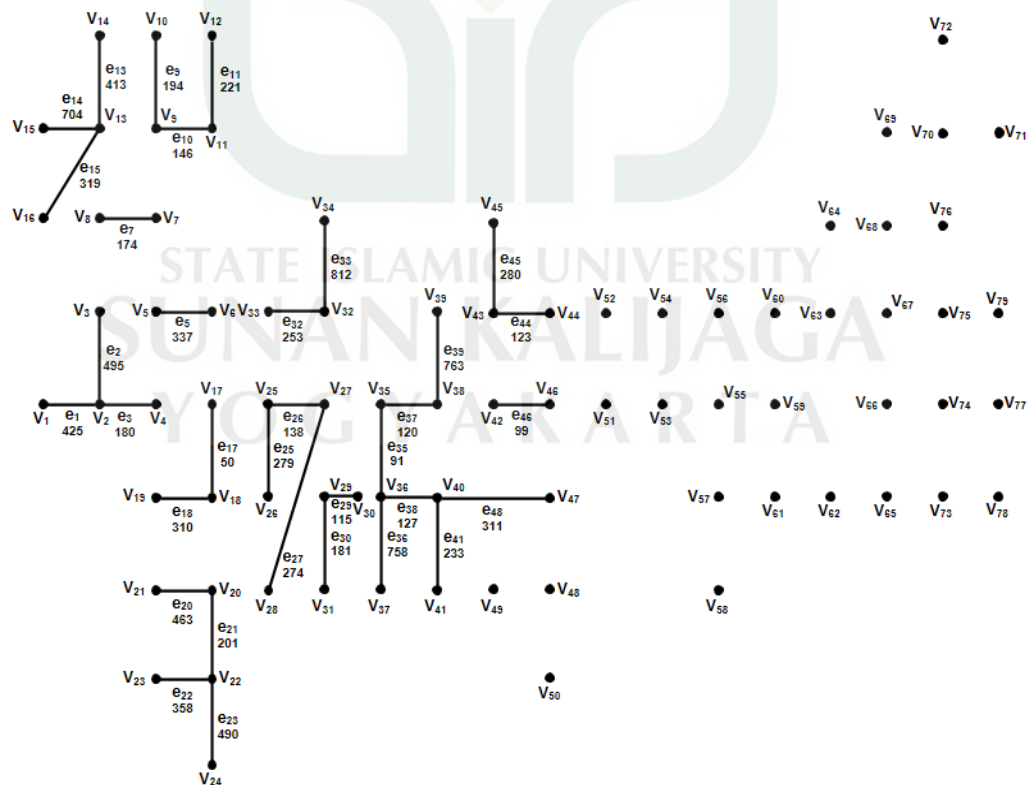
Plot sisi e_{44} :



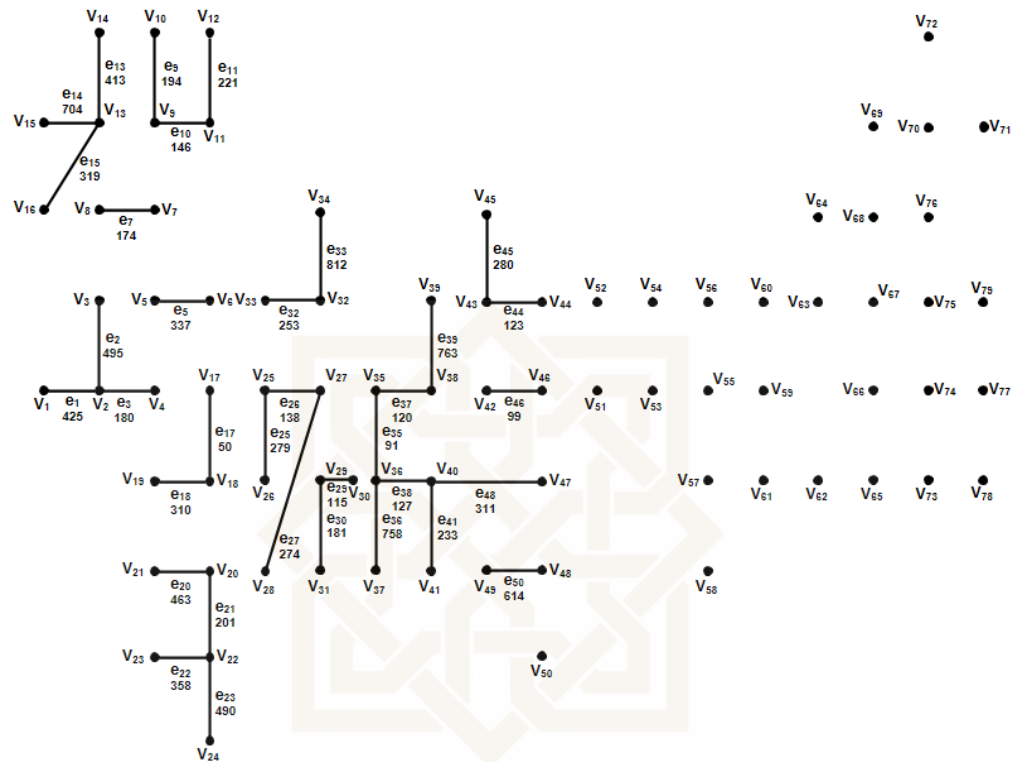
Plot sisi e_{45} :



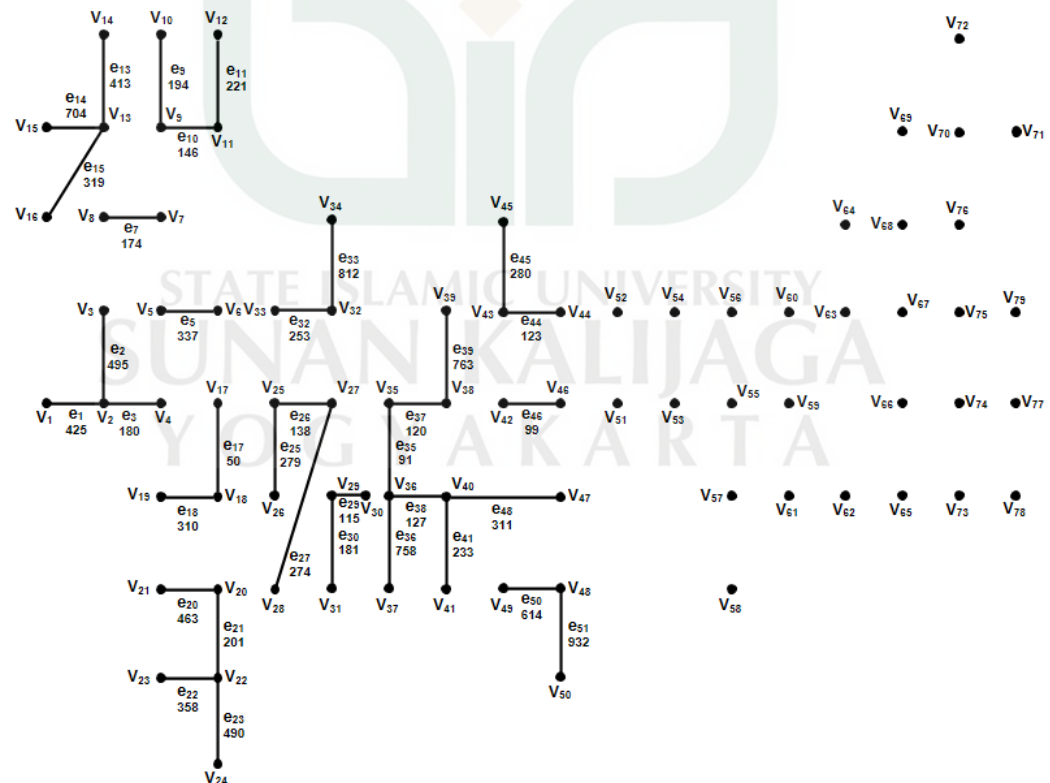
Plot sisi e_{48} :



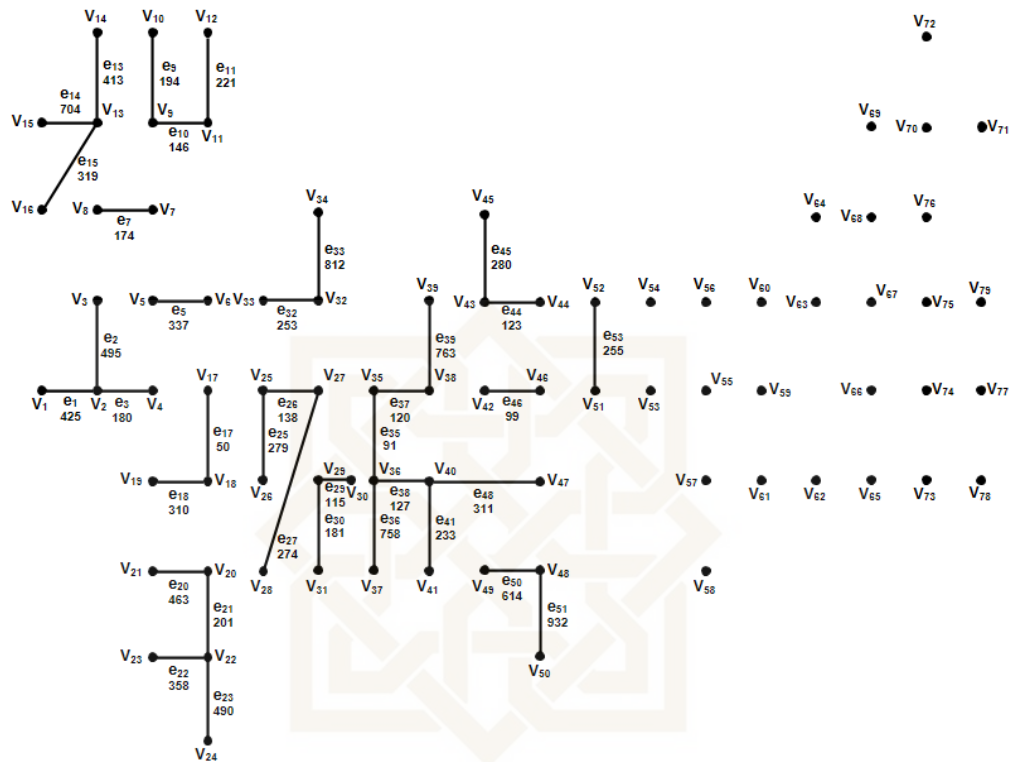
Plot sisi e_{50} :



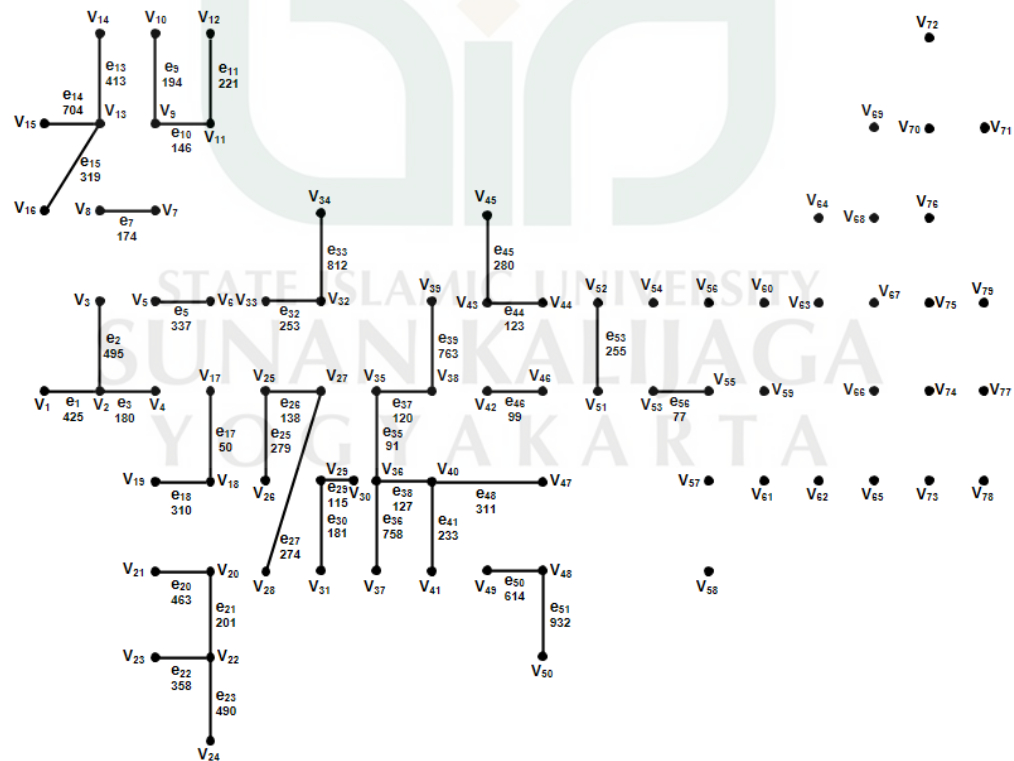
Plot sisi e_{51} :



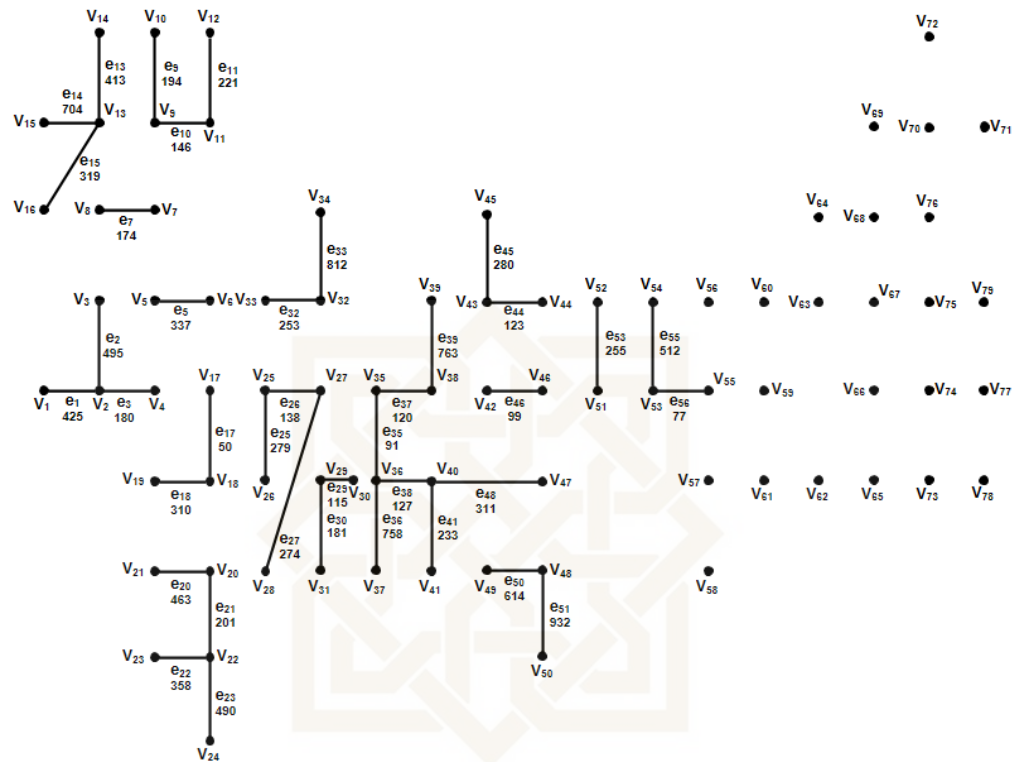
Plot sisi e_{53} :



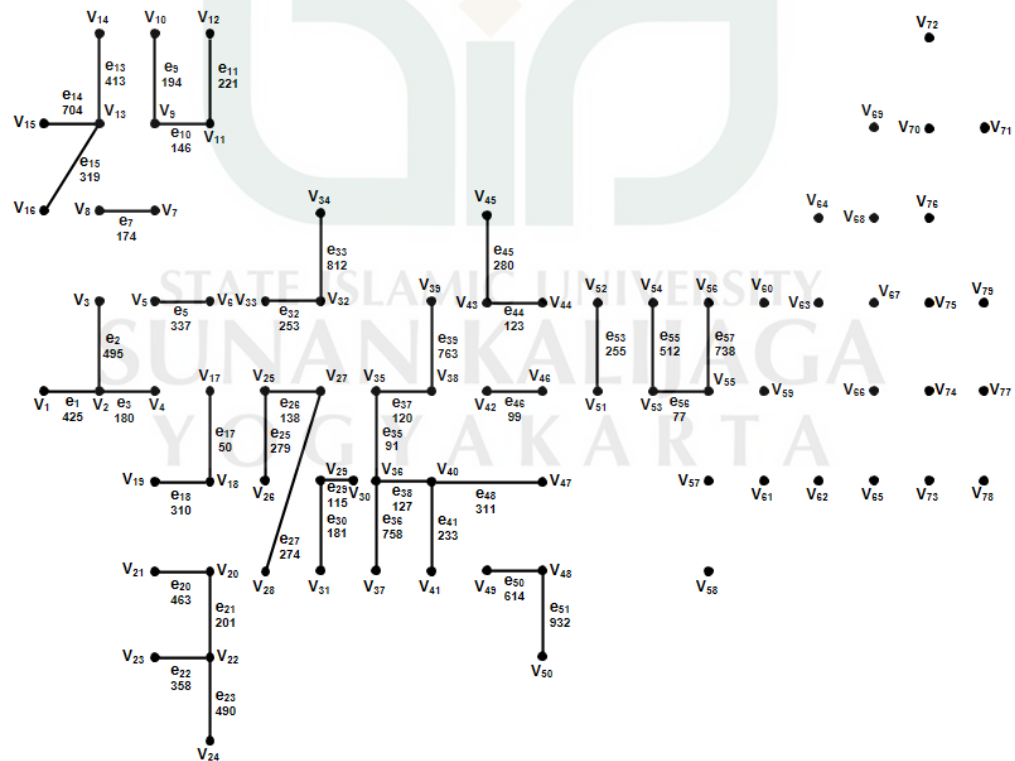
Plot sisi e_{56} :



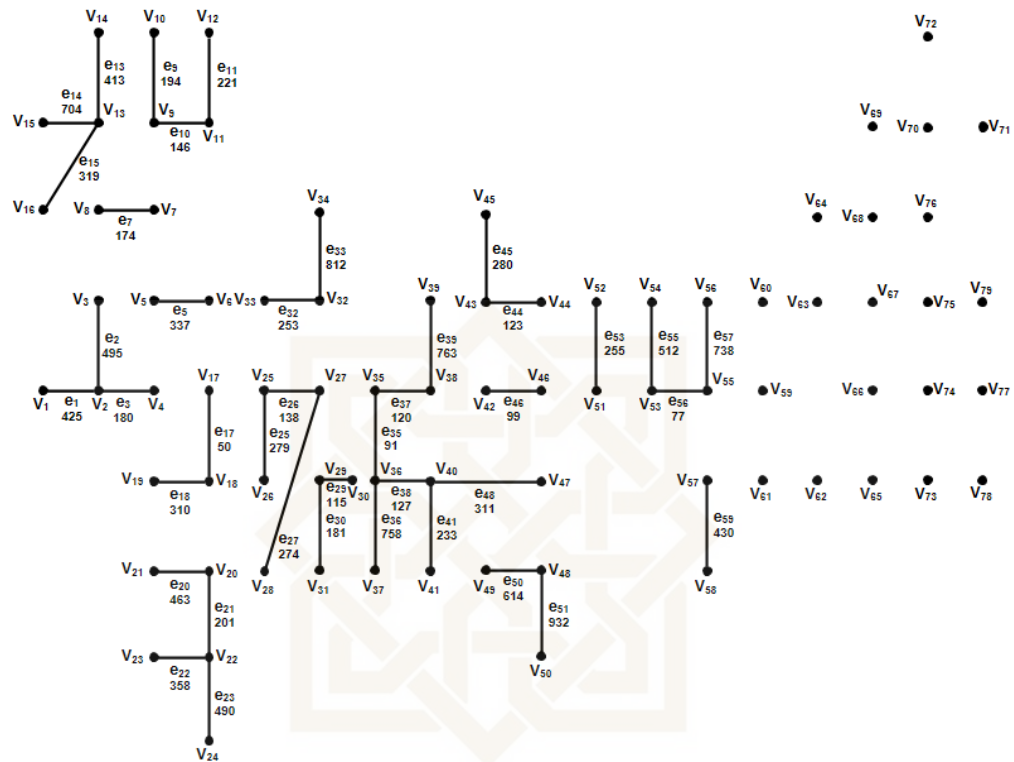
Plot sisi e_{55} :



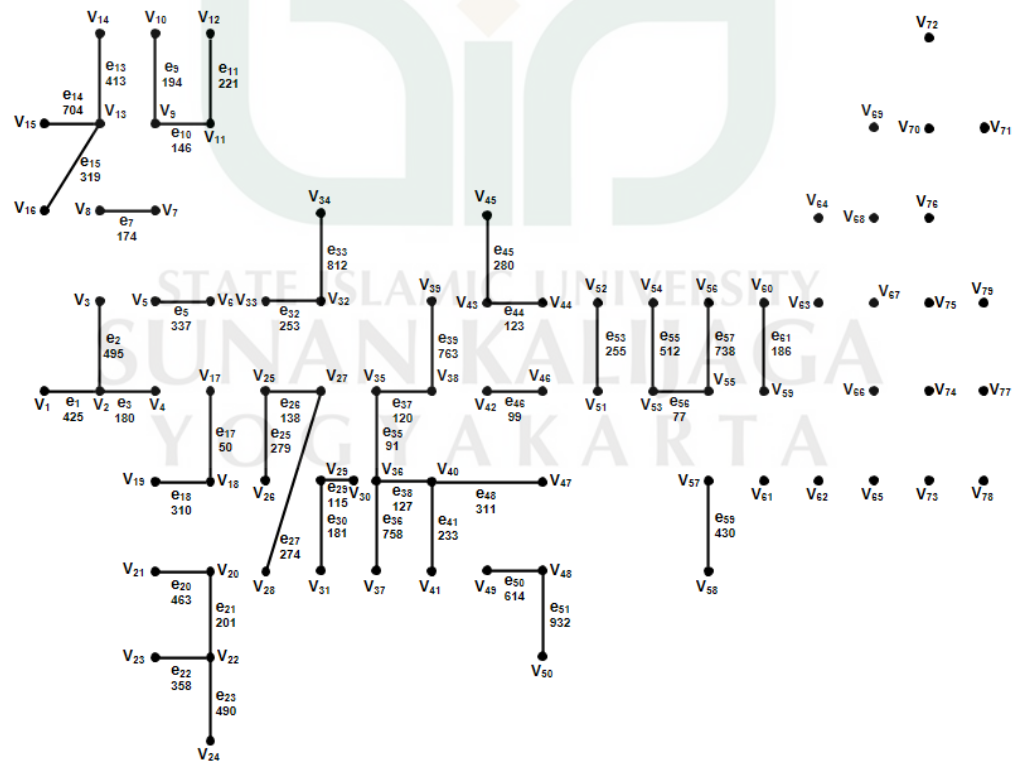
Plot sisi e_{57} :



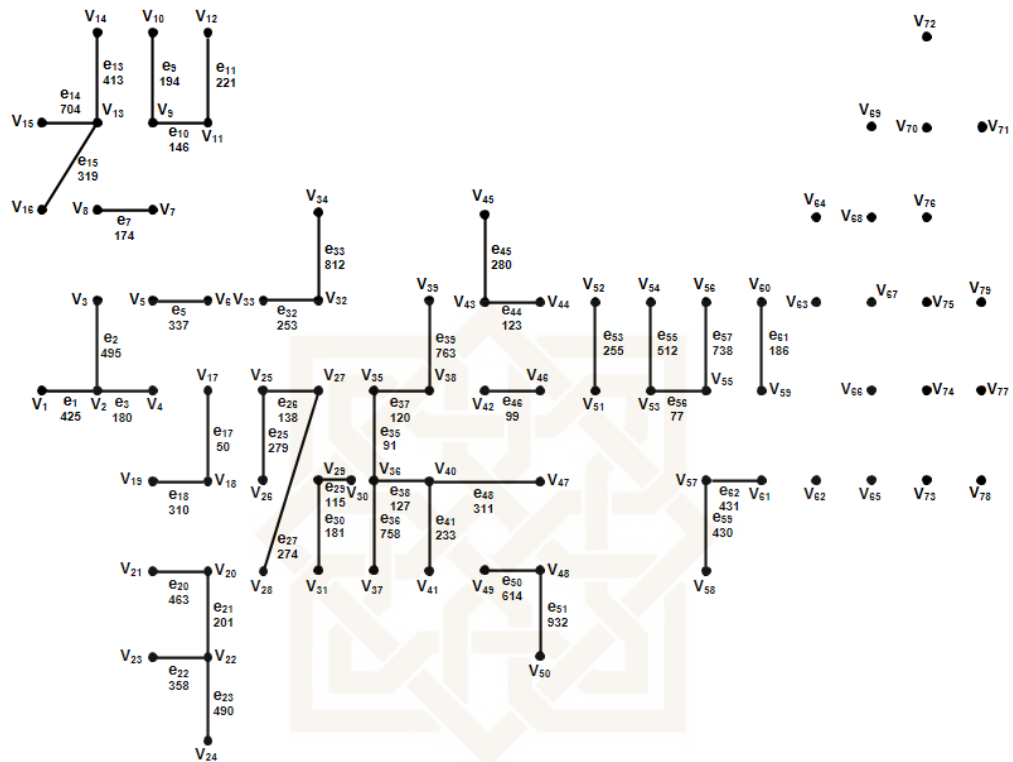
Plot sisi e_{59} :



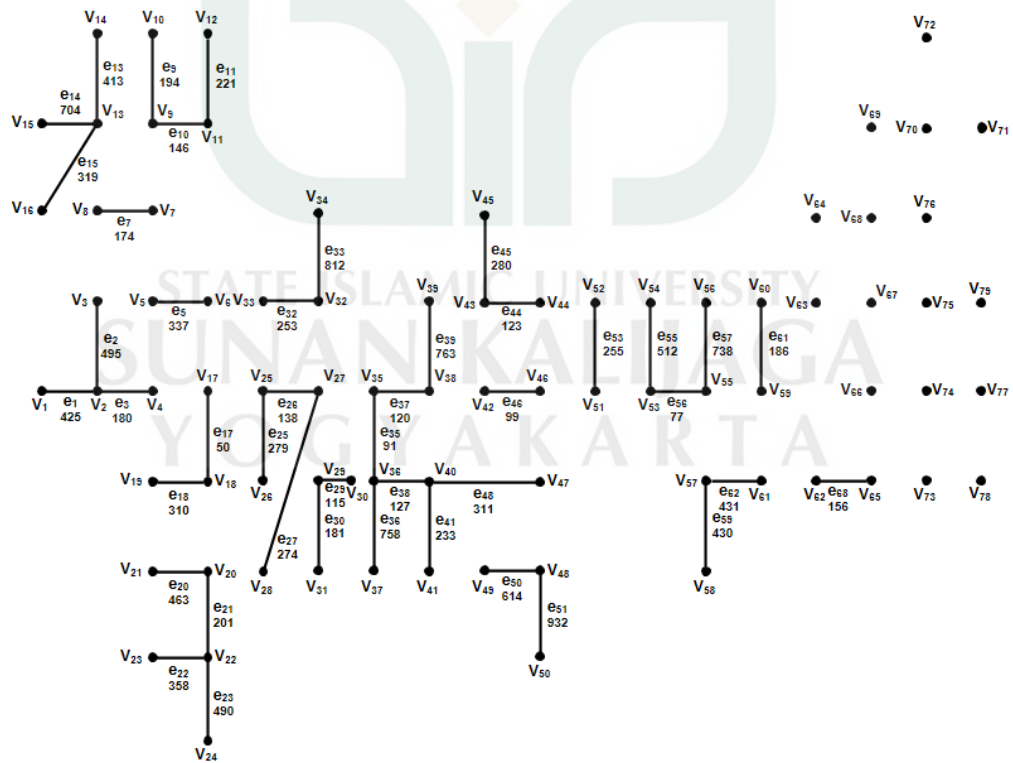
Plot sisi e_{61} :



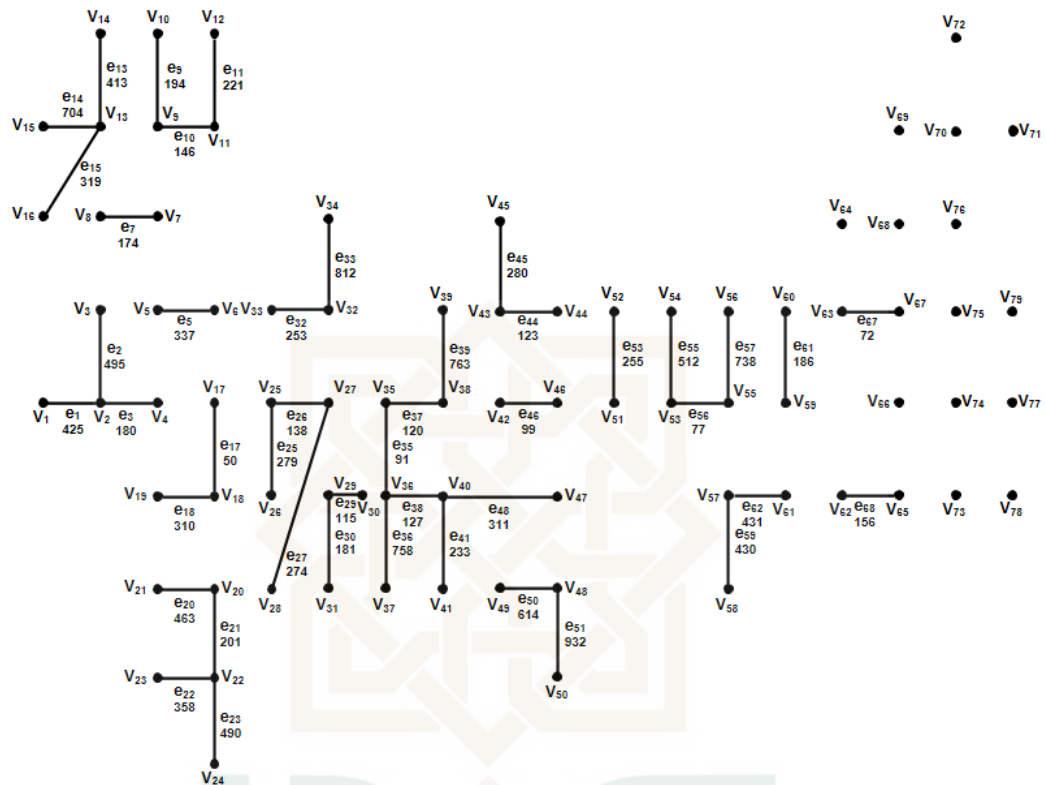
Plot sisi e_{62} :



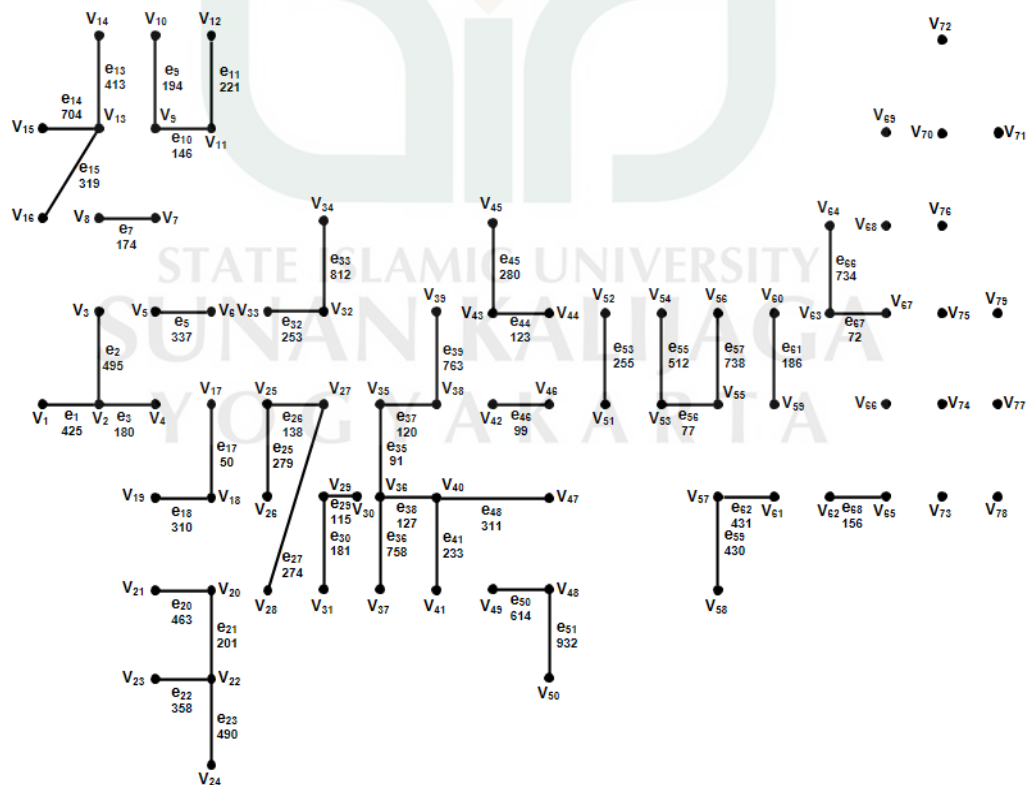
Plot sisi e_{68} :



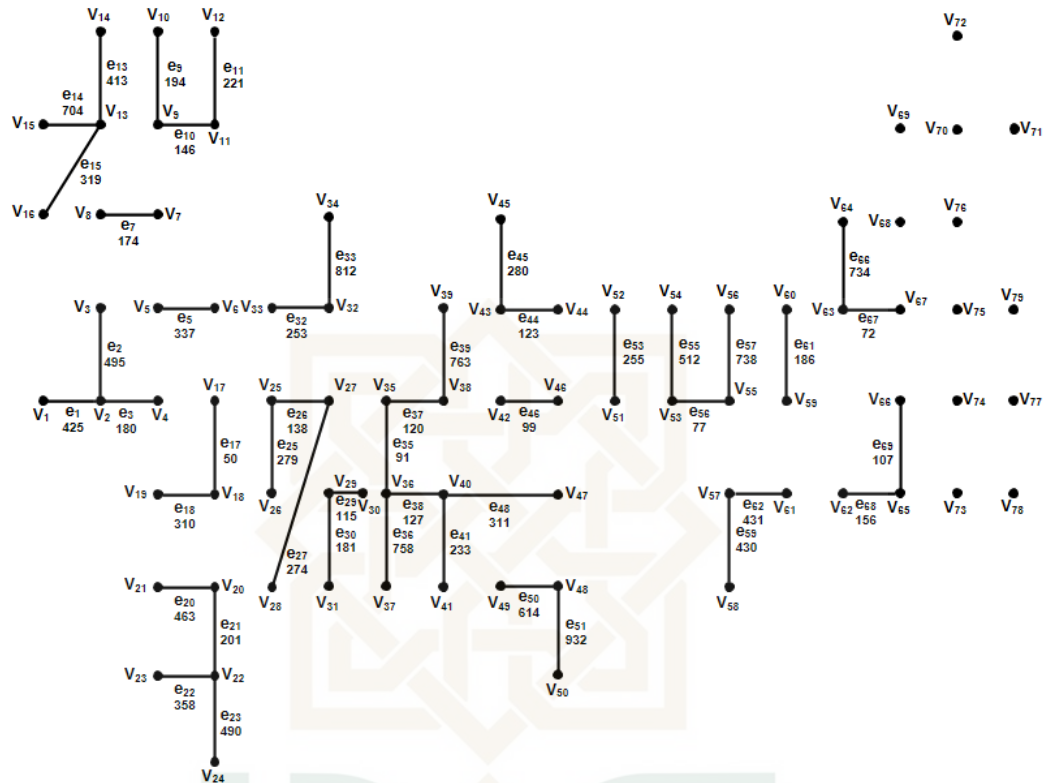
Plot sisi e_{67} :



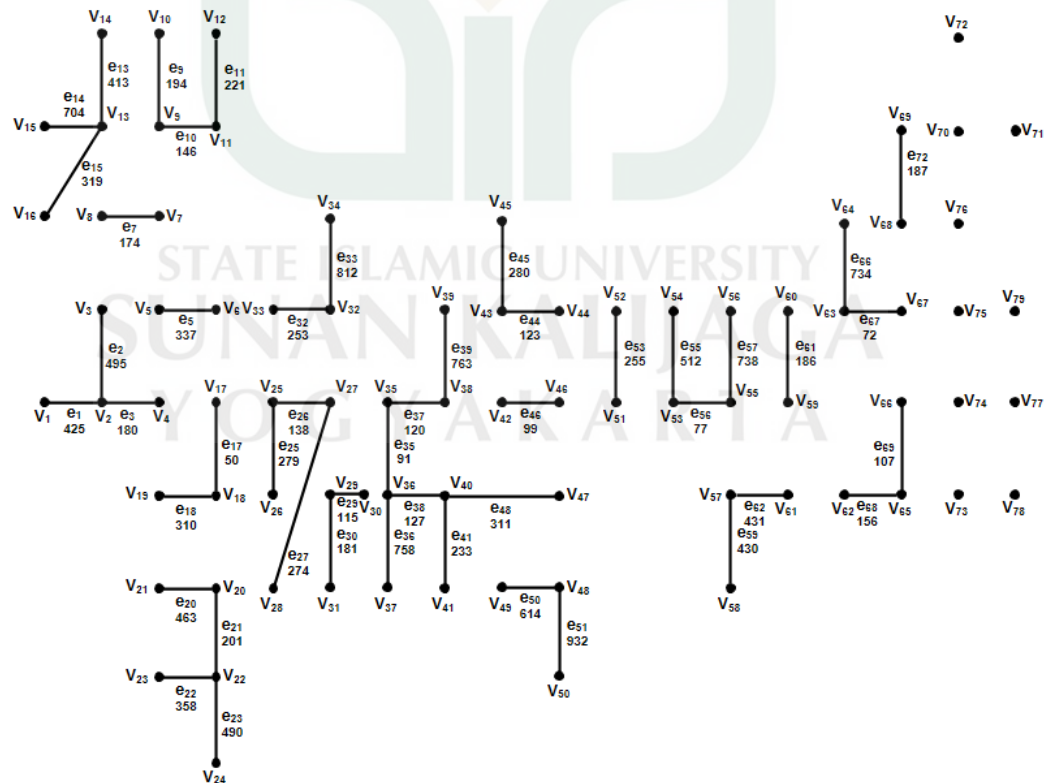
Plot sisi e_{66} :



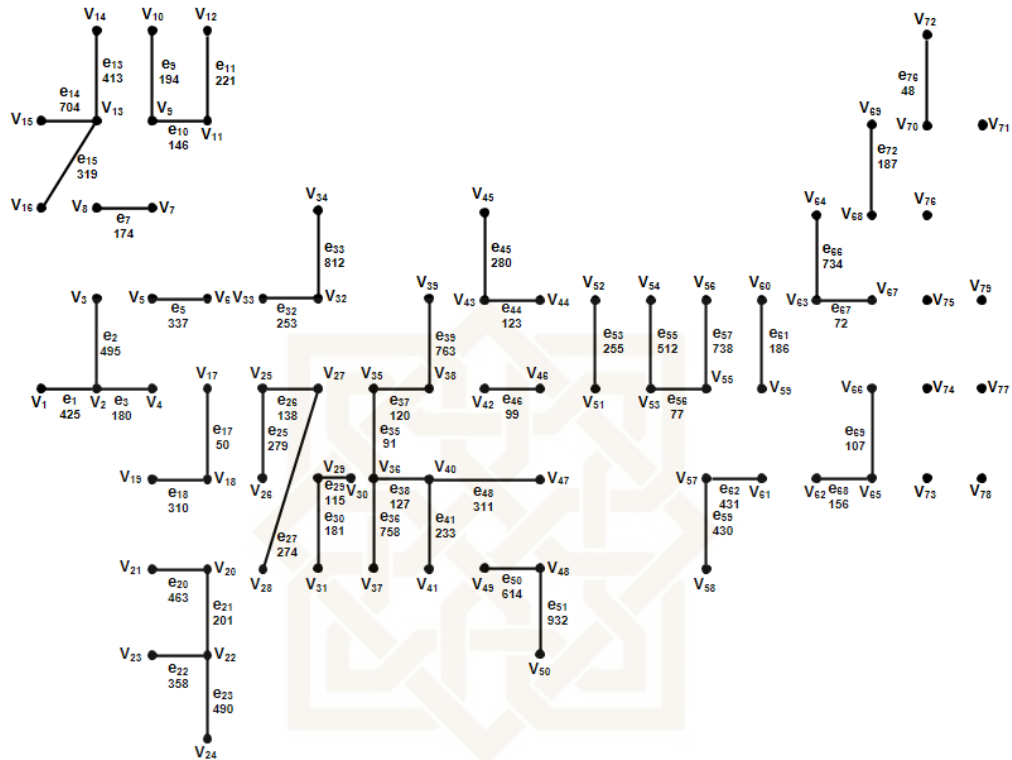
Plot sisi e_{69} :



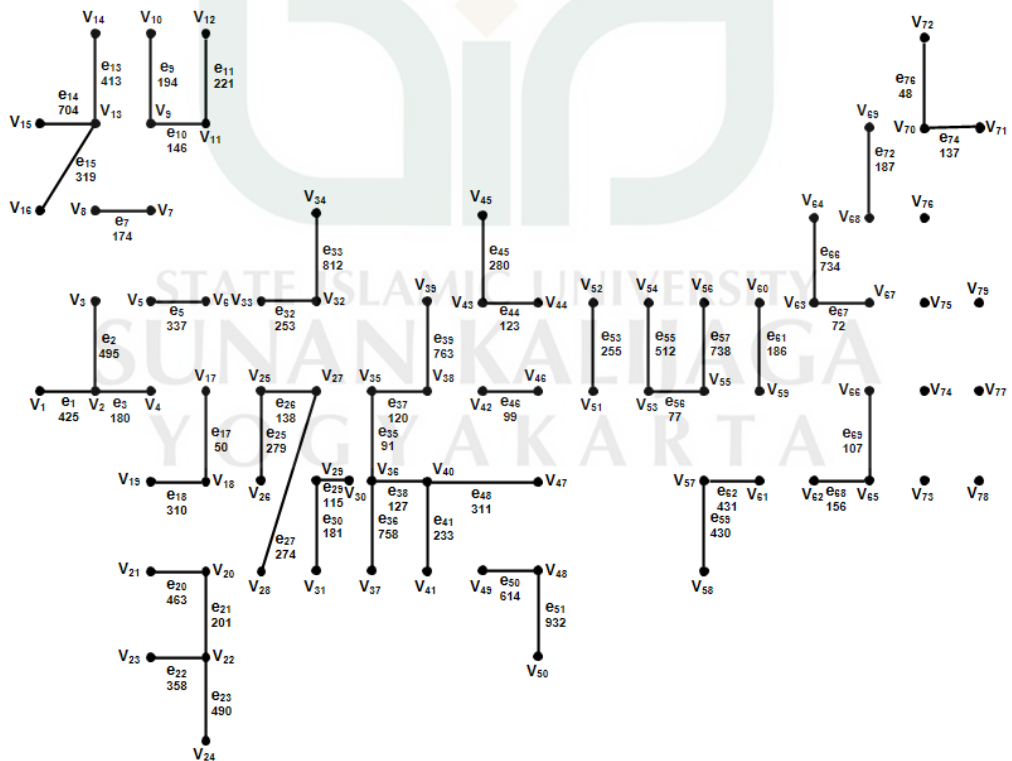
Plot sisi e_{72} :



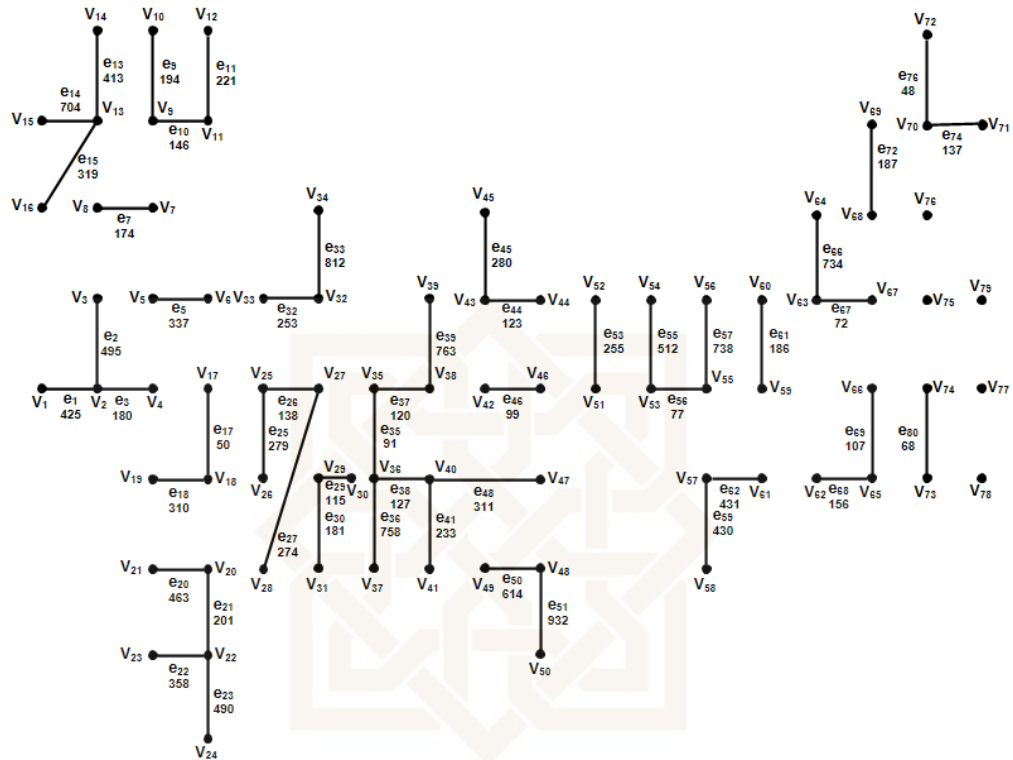
Plot sisi e_{76} :



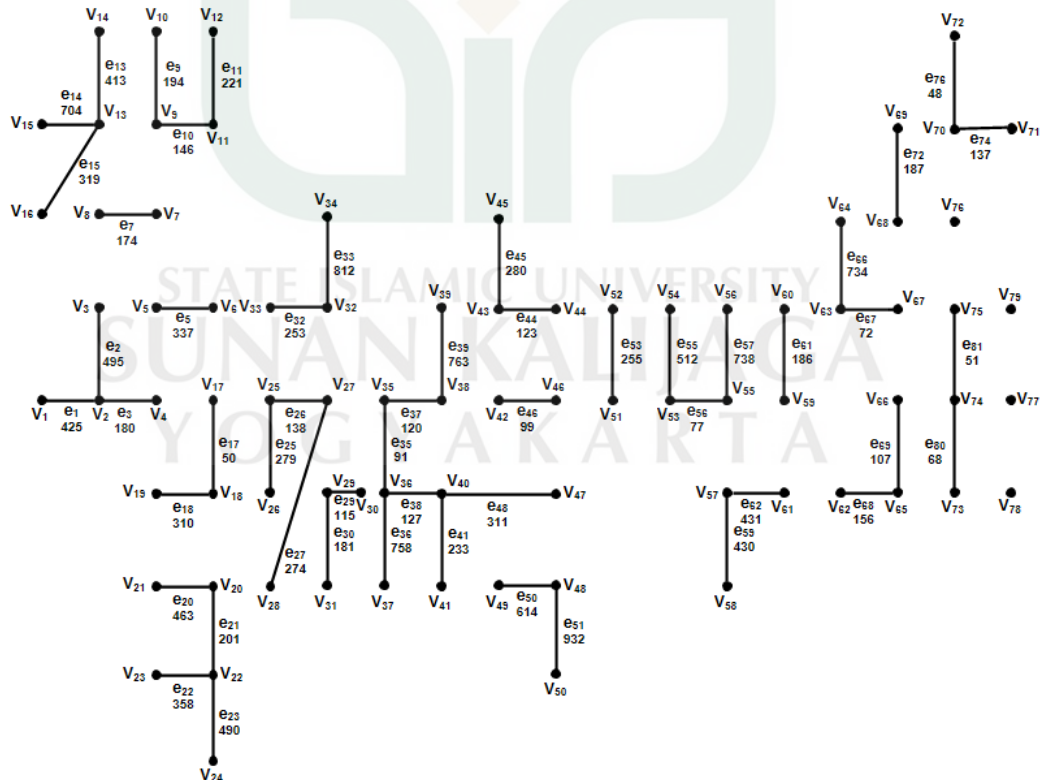
Plot sisi e_{74} :



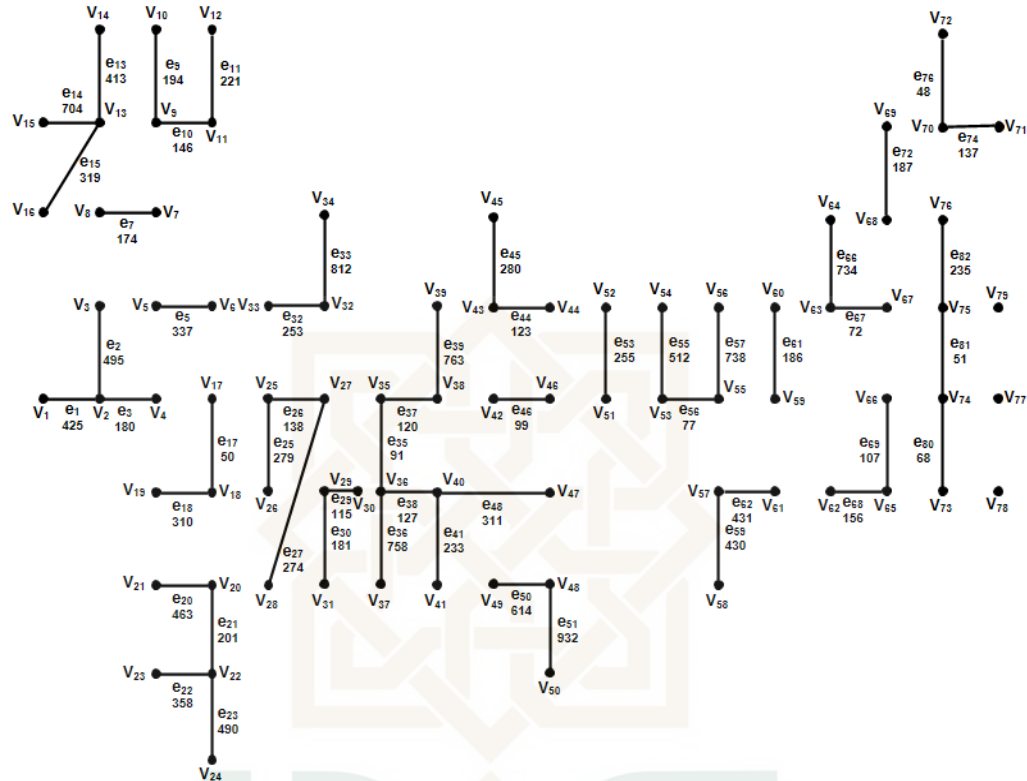
Plot sisi e_{80} :



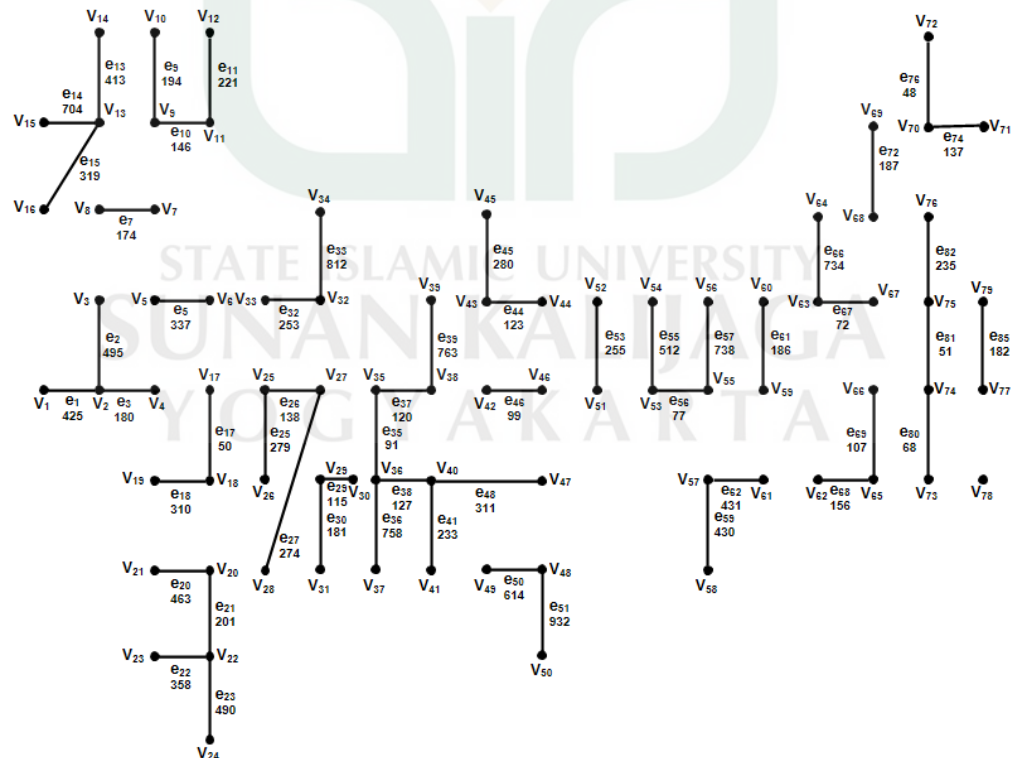
Plot sisi e_{81} :

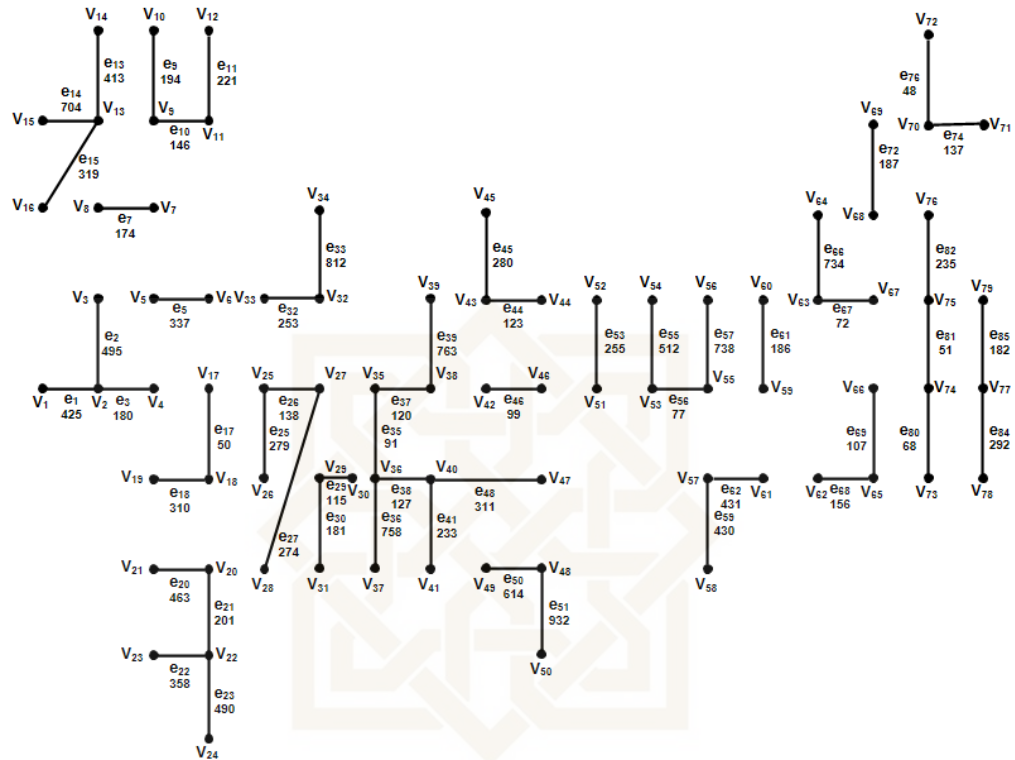
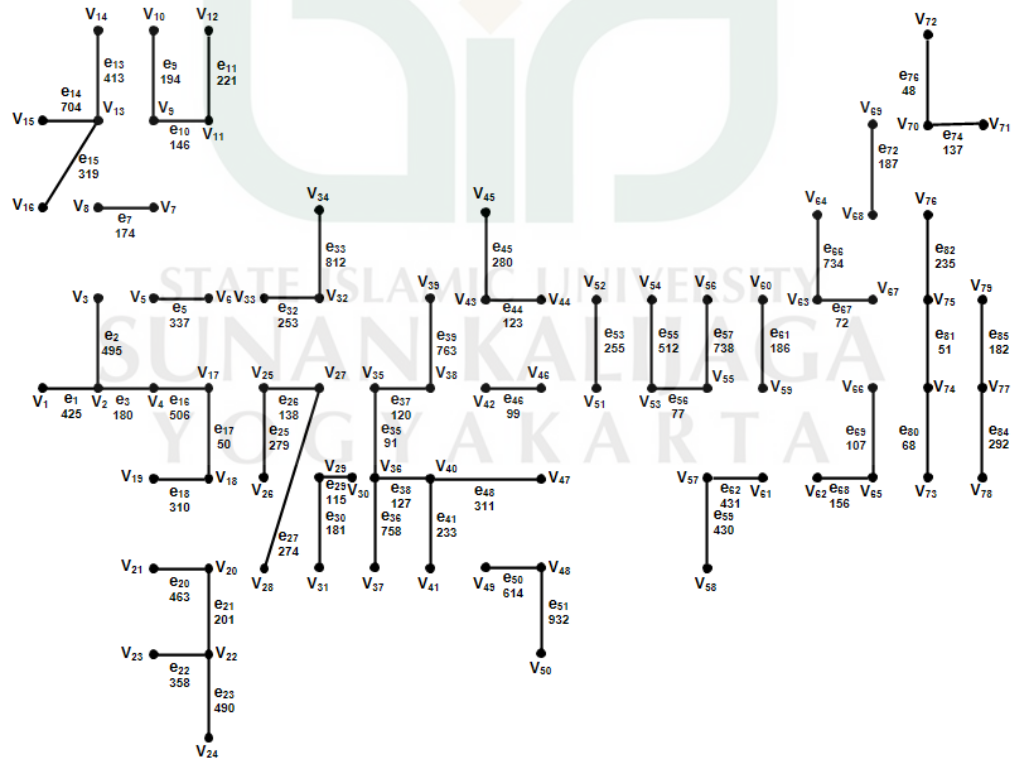


Plot sisi e_{82} :

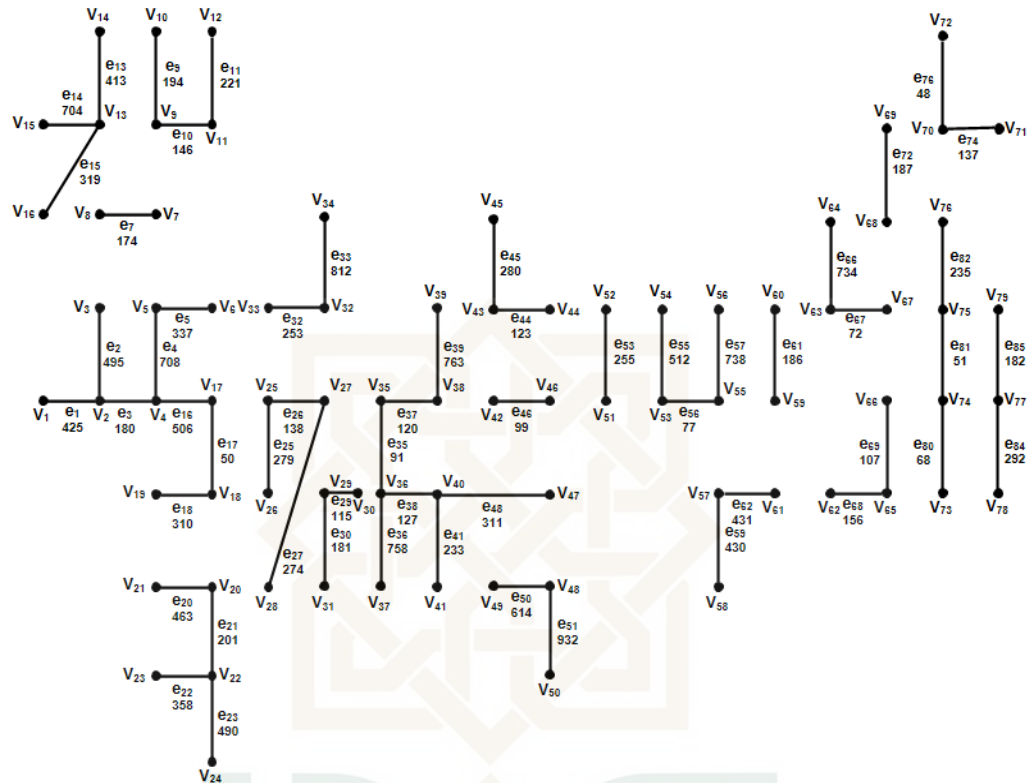


Plot sisi e_{85} :

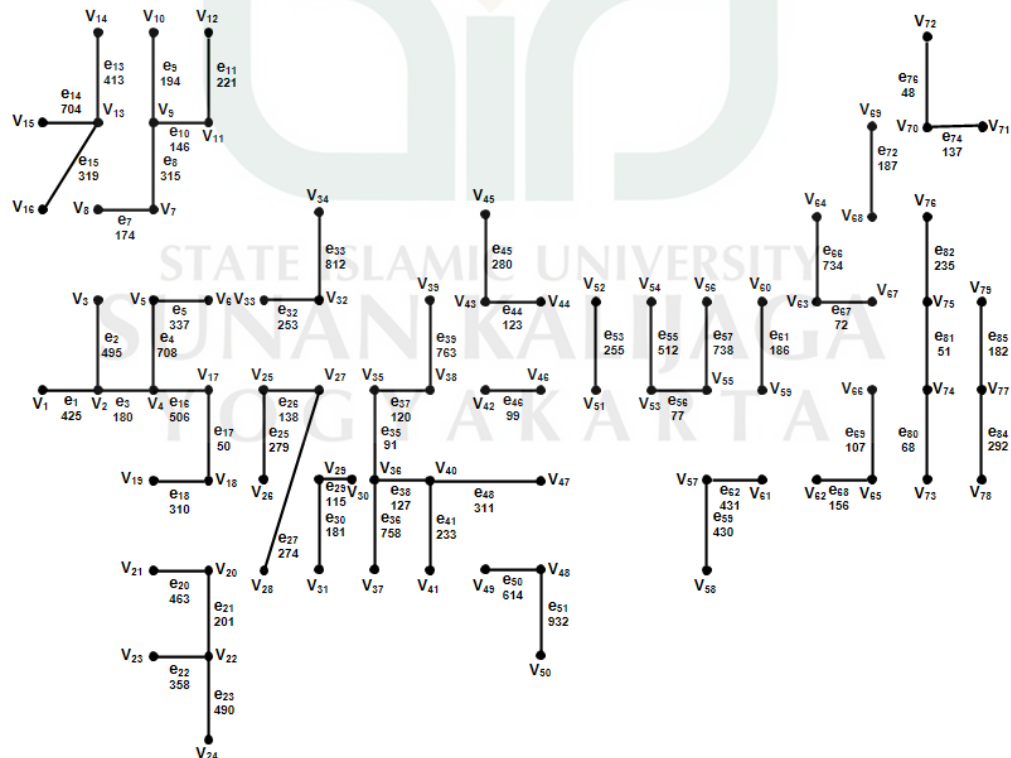


Plot sisi e_{84} :Plot sisi e_{16} :

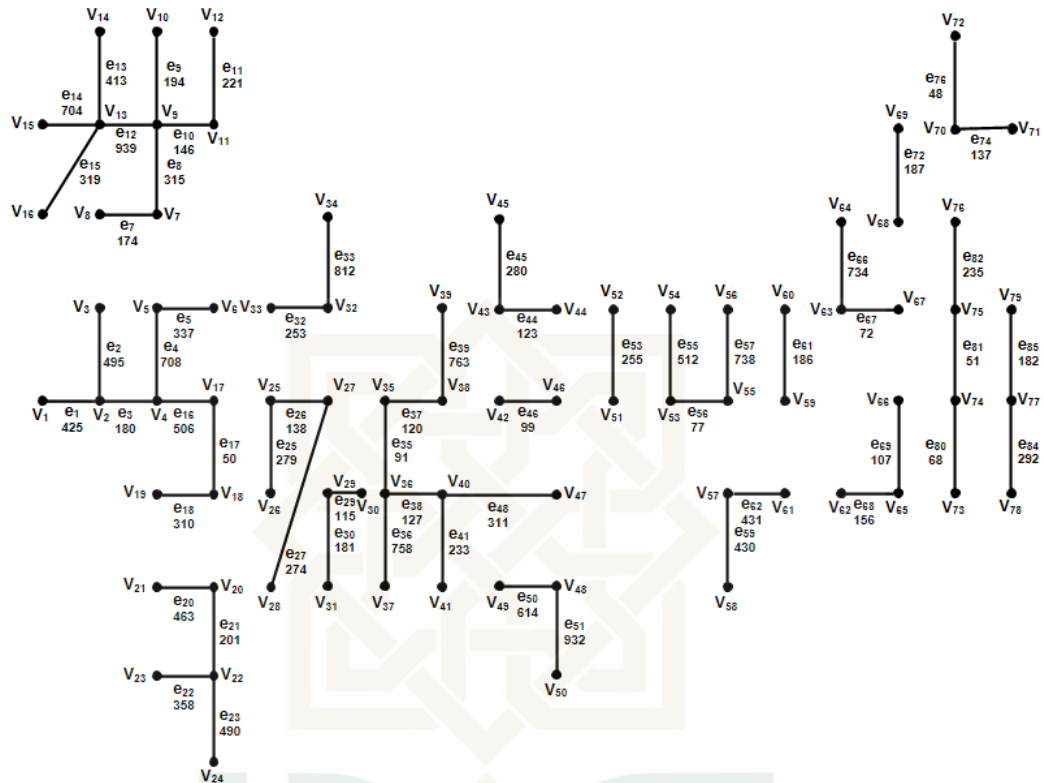
Plot sisi e_4 :



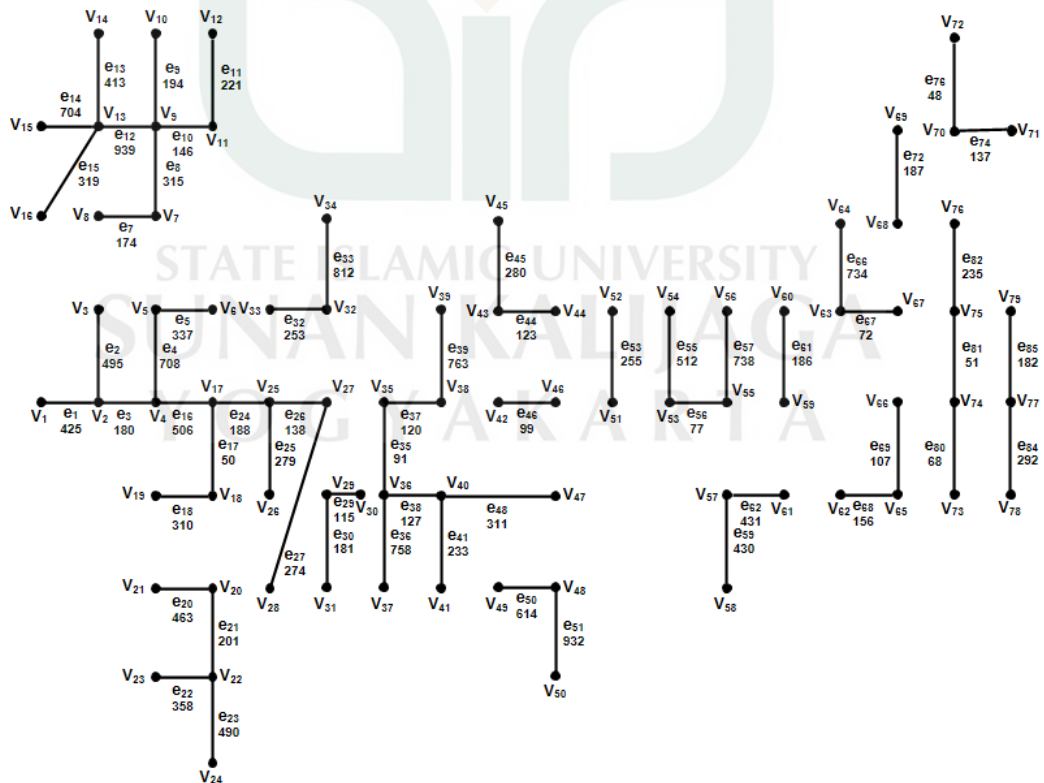
Plot sisi e_8 :



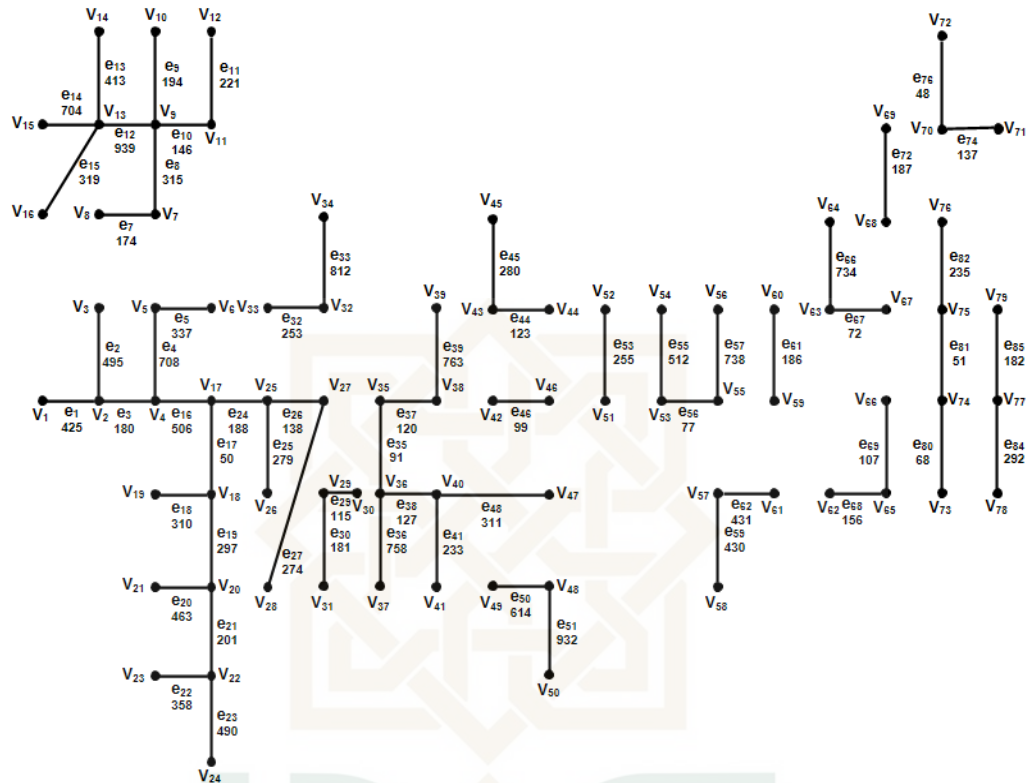
Plot sisi e_{12} :



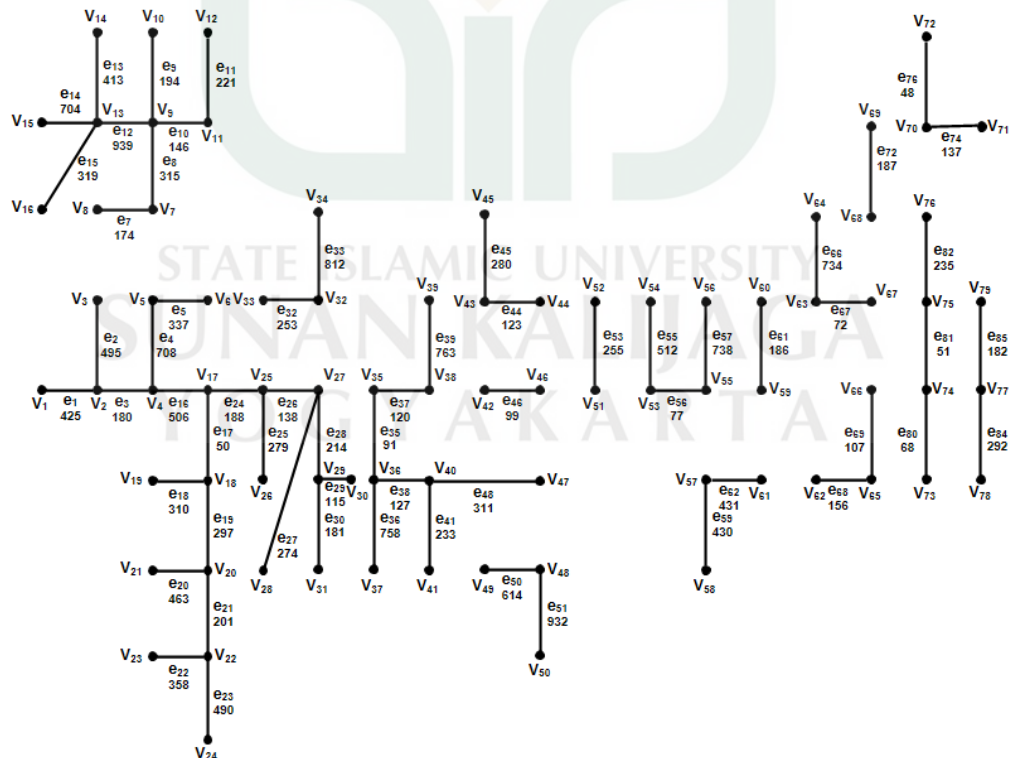
Plot sisi e_{24} :

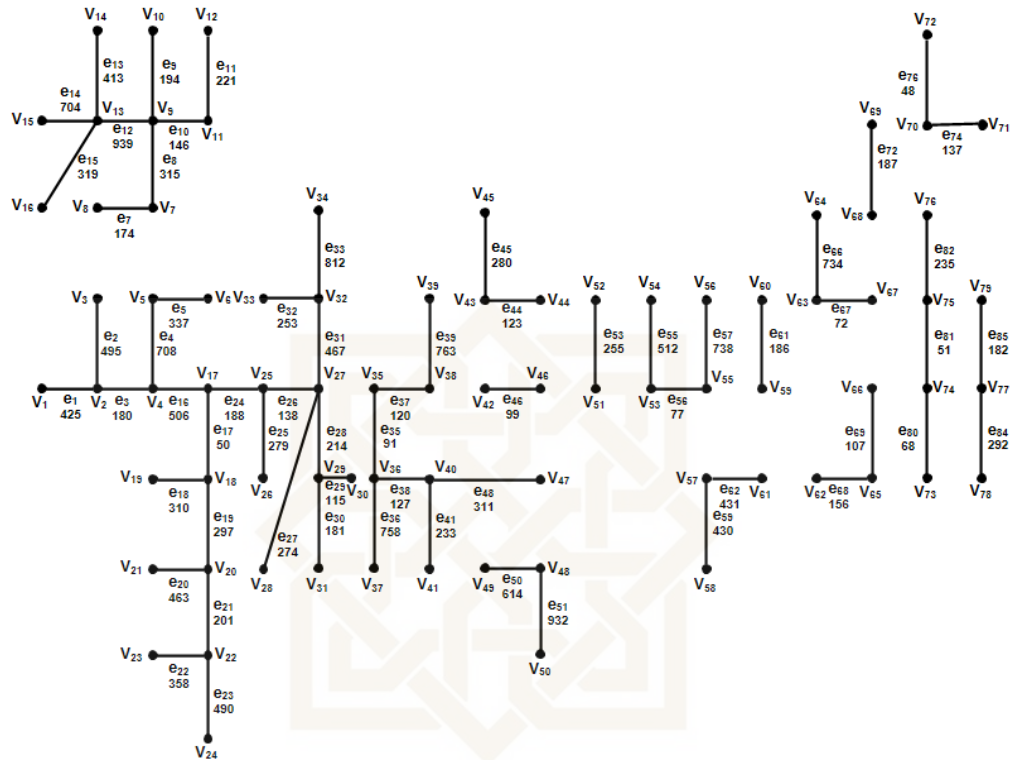
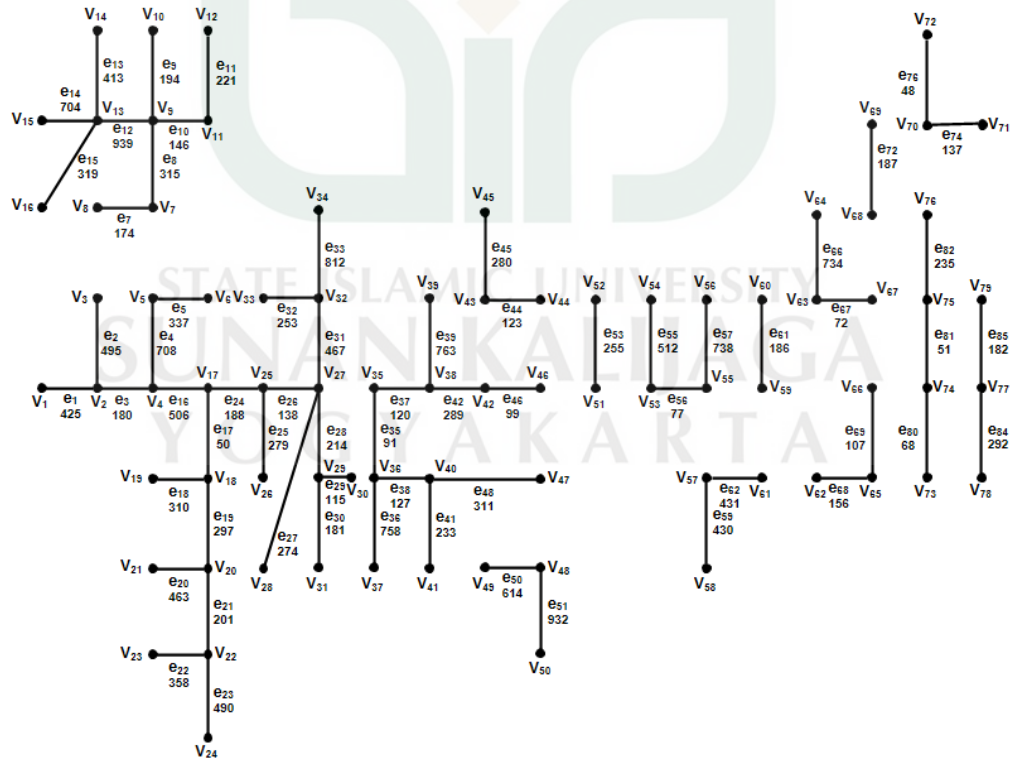


Plot sisi e_{19} :

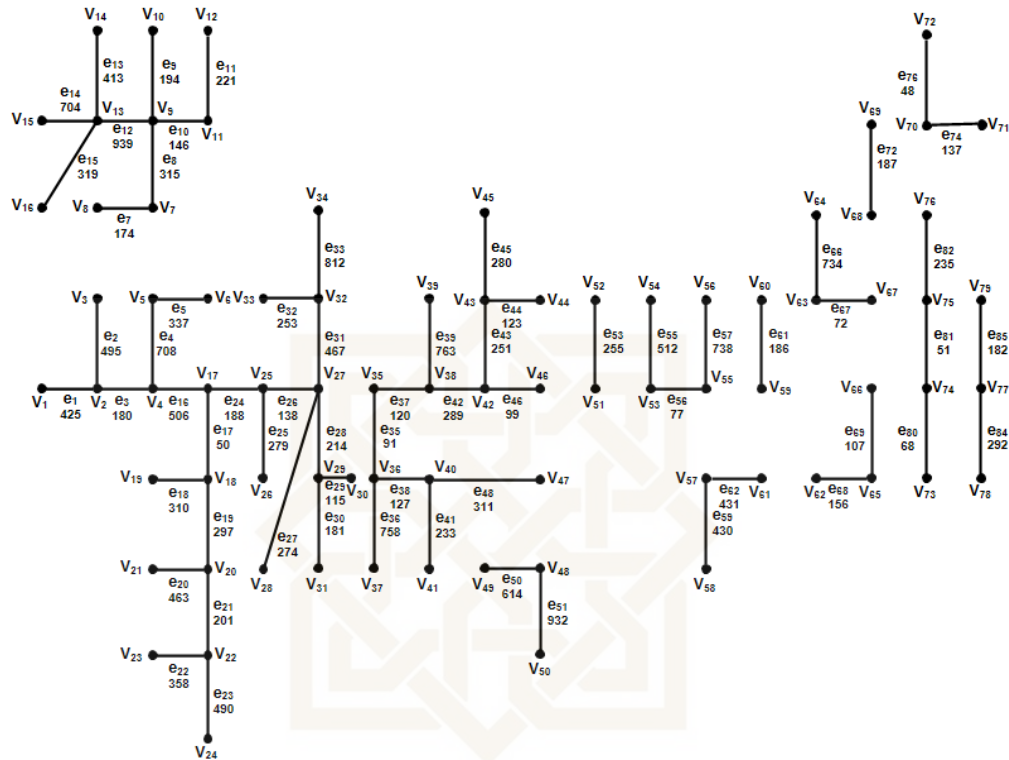


Plot sisi e_{28} :

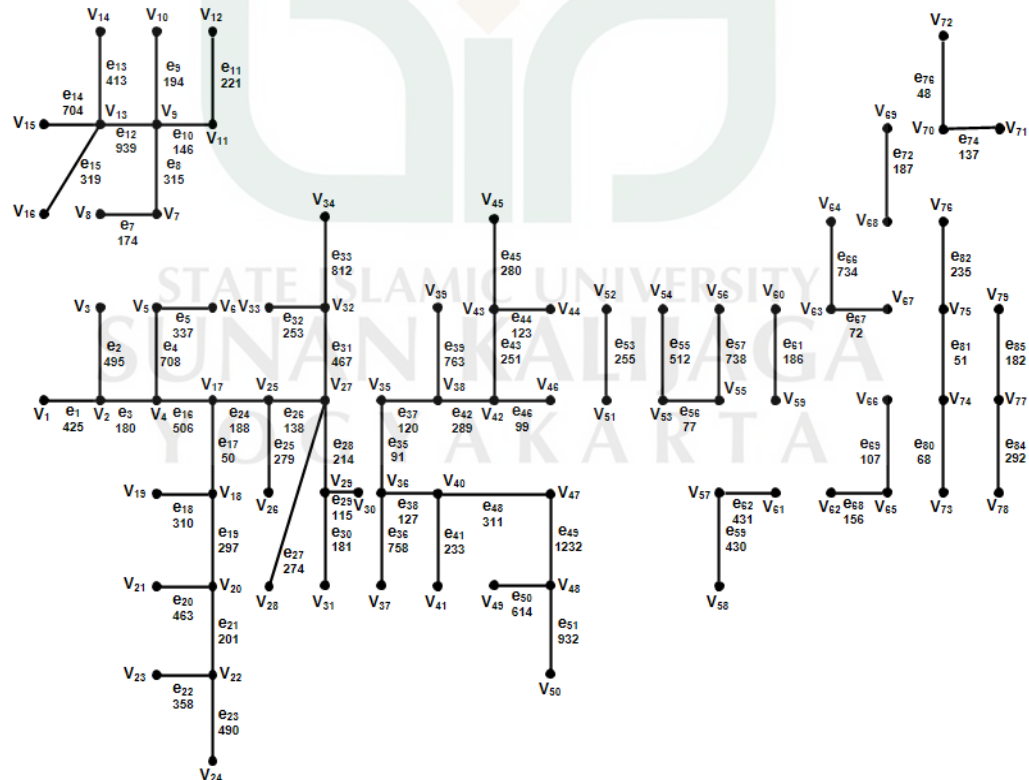


Plot sisi e_{31} :Plot sisi e_{42} :

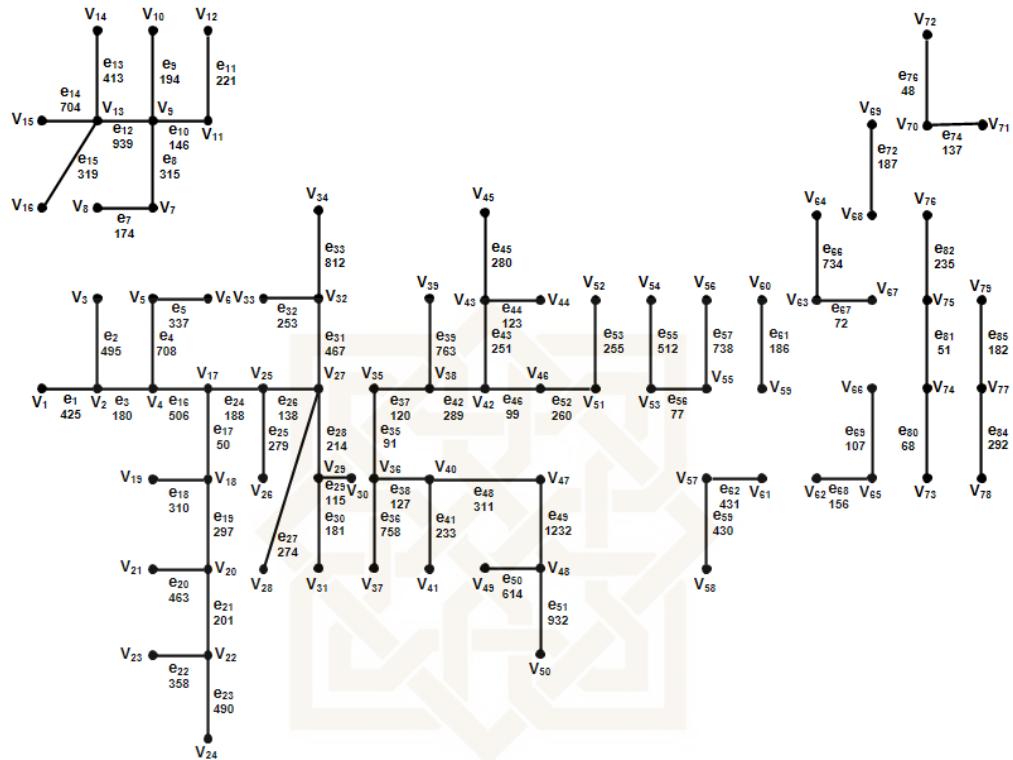
Plot sisi e_{43} :



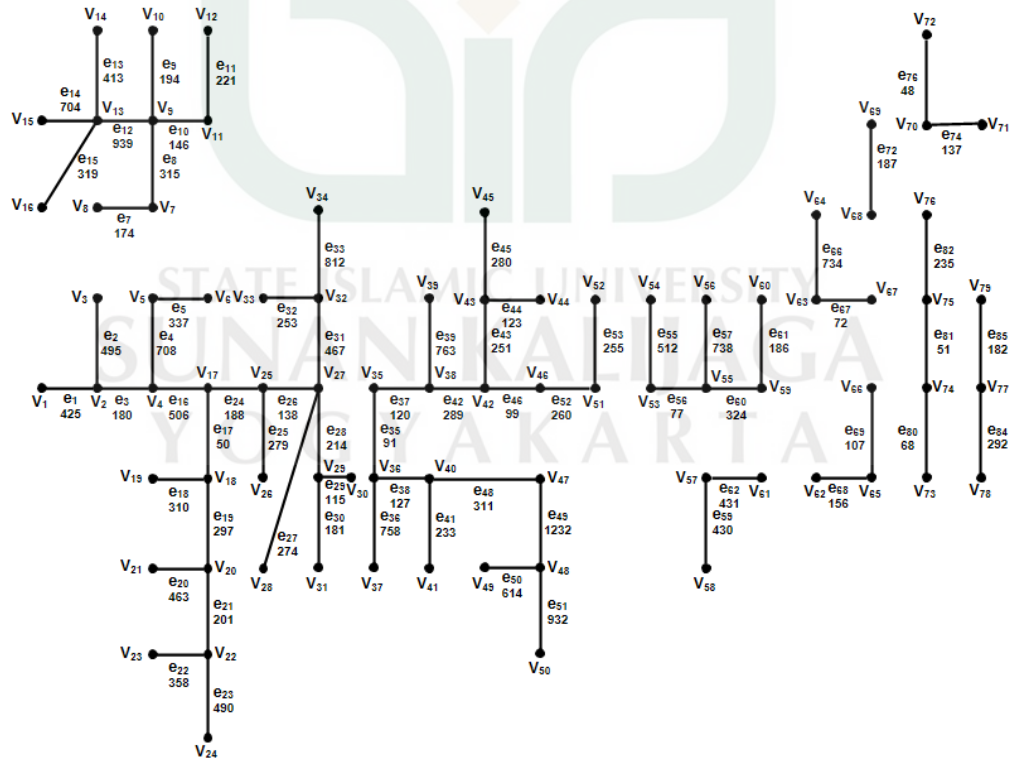
Plot sisi e_{49} :



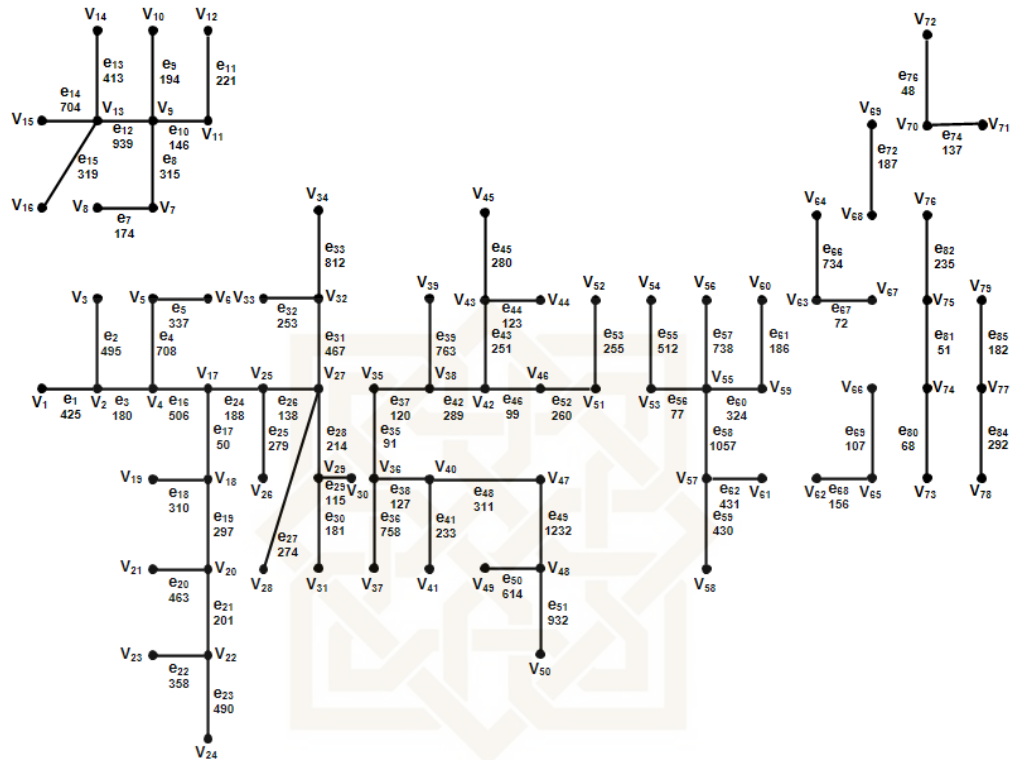
Plot sisi e_{52} :



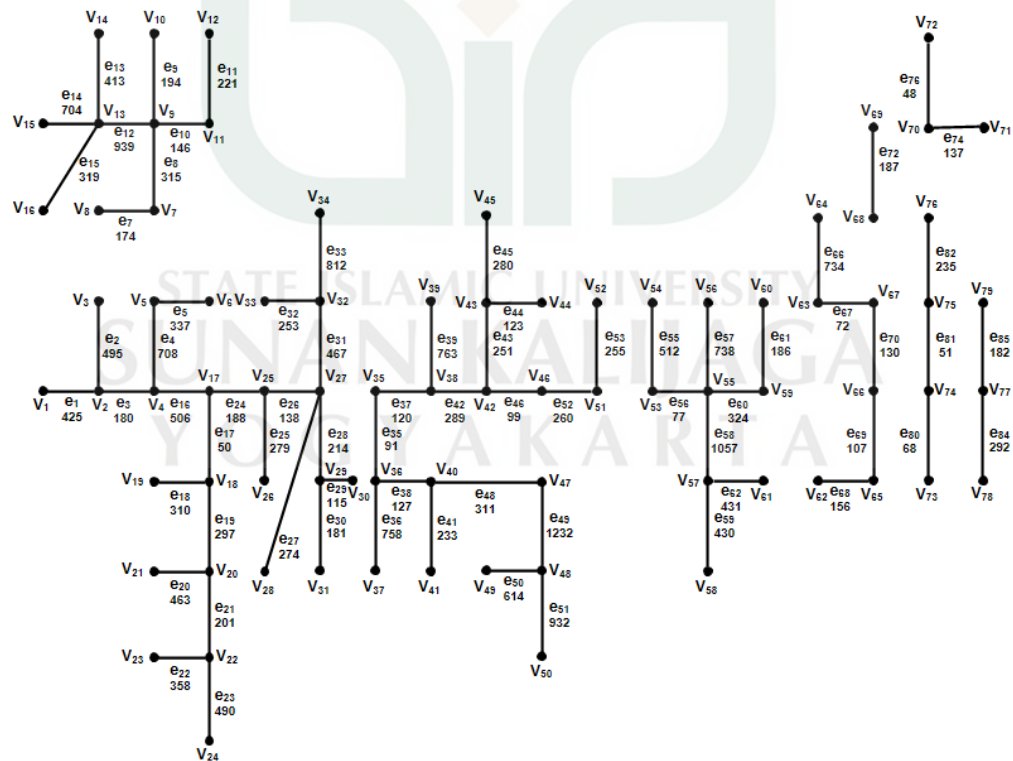
Plot sisi e_{60} :



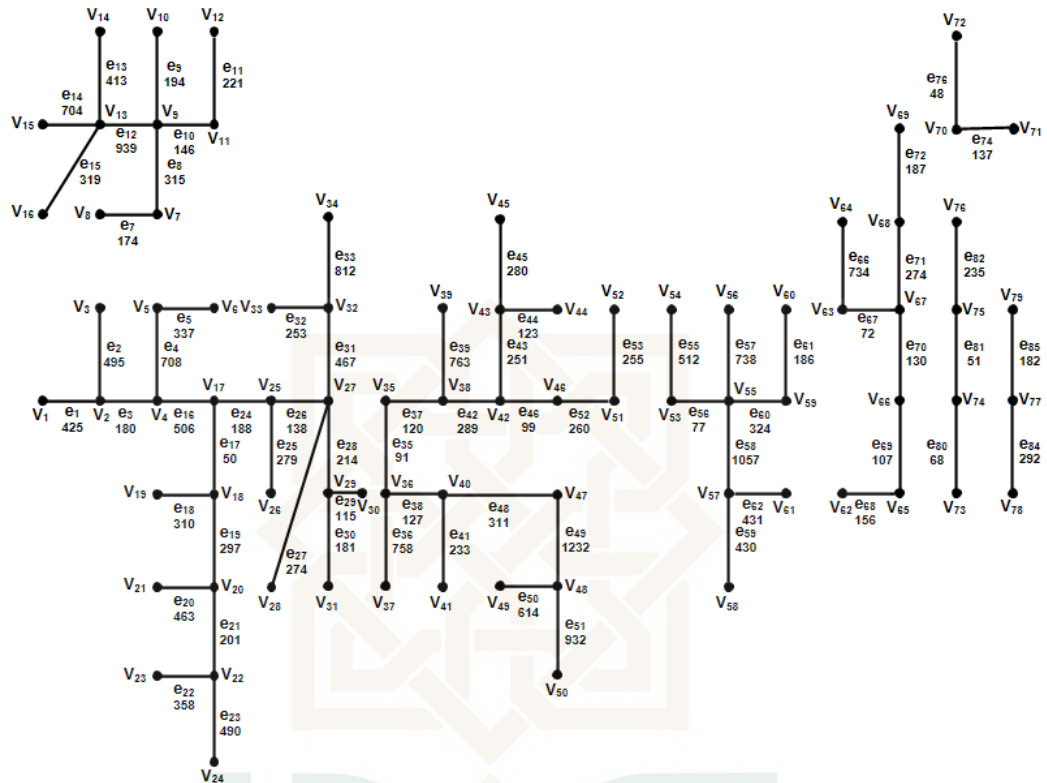
Plot sisi e_{58} :



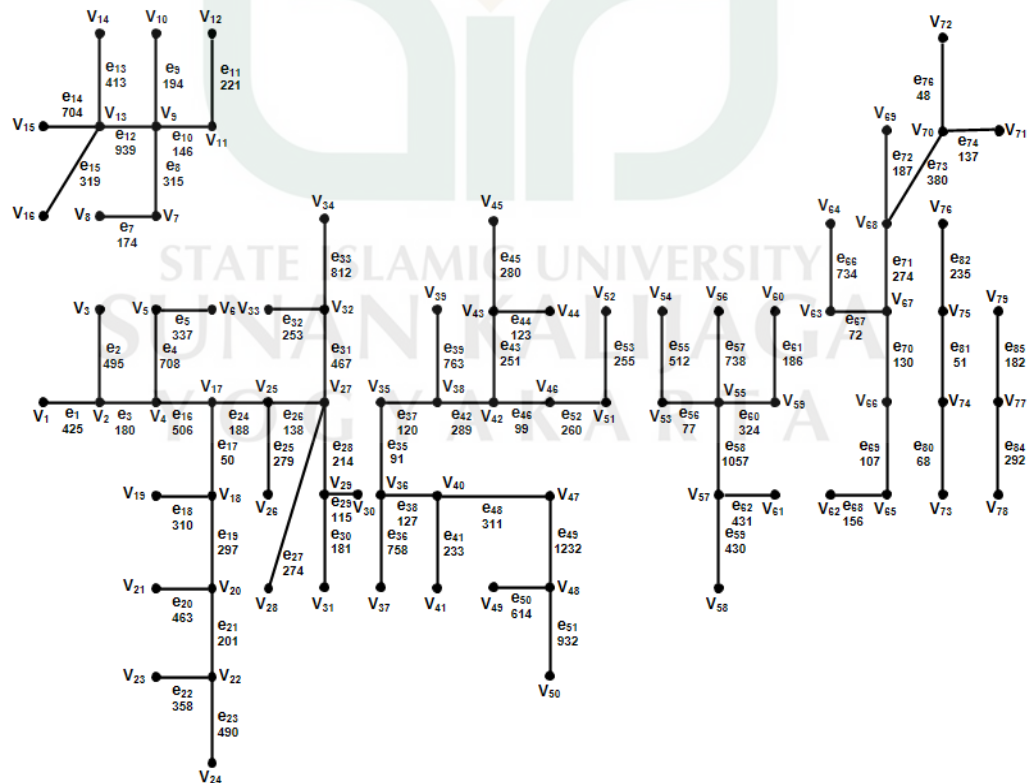
Plot sisi e_{70} :



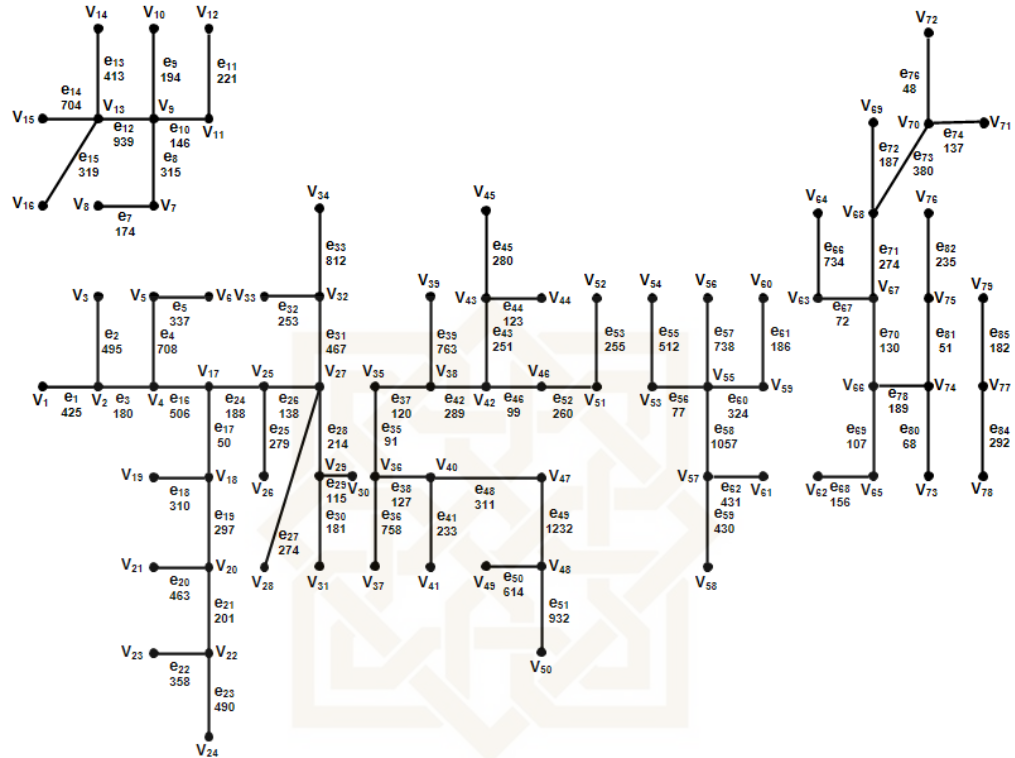
Plot sisi e_{71} :



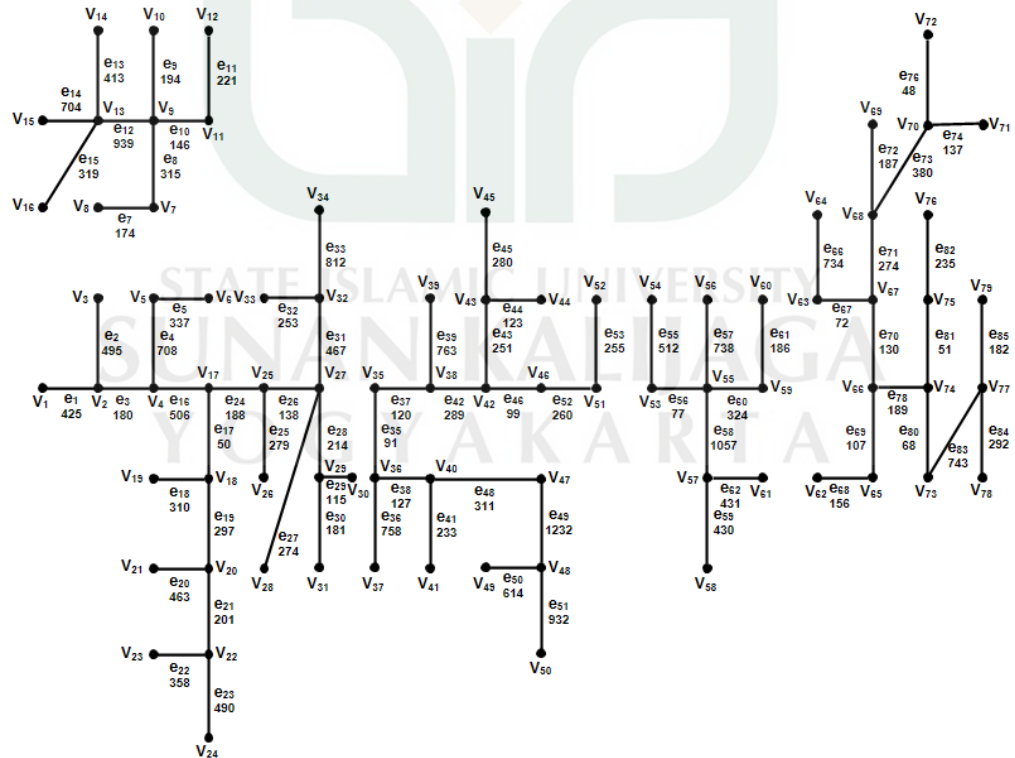
Plot sisi e_{73} :

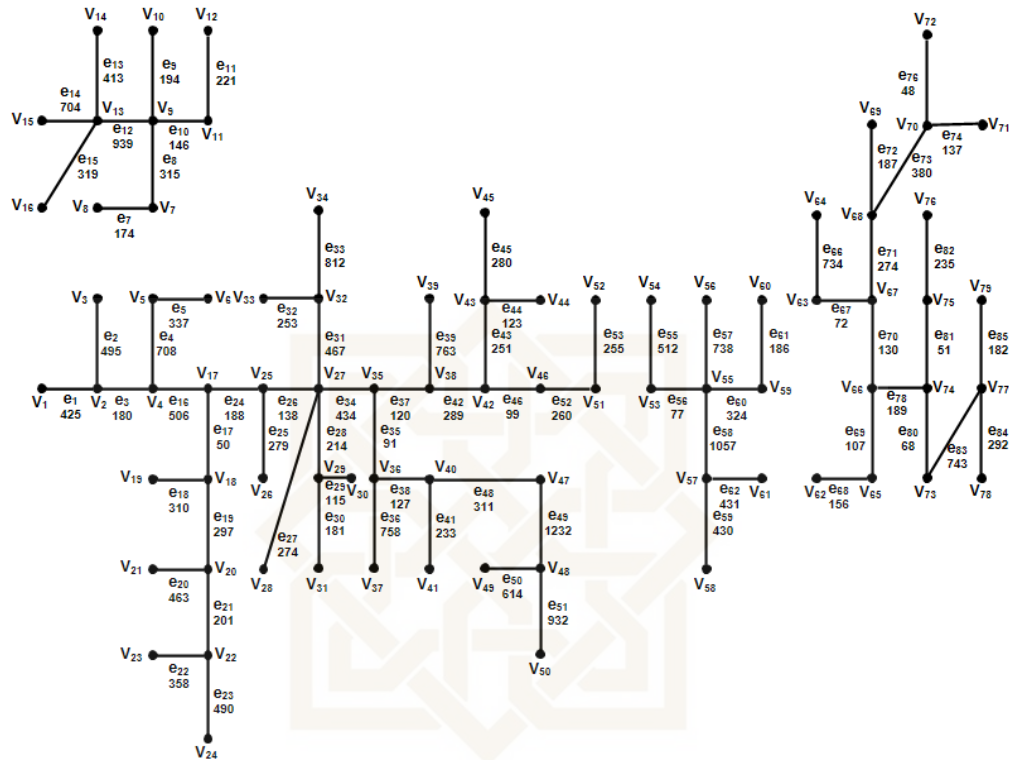
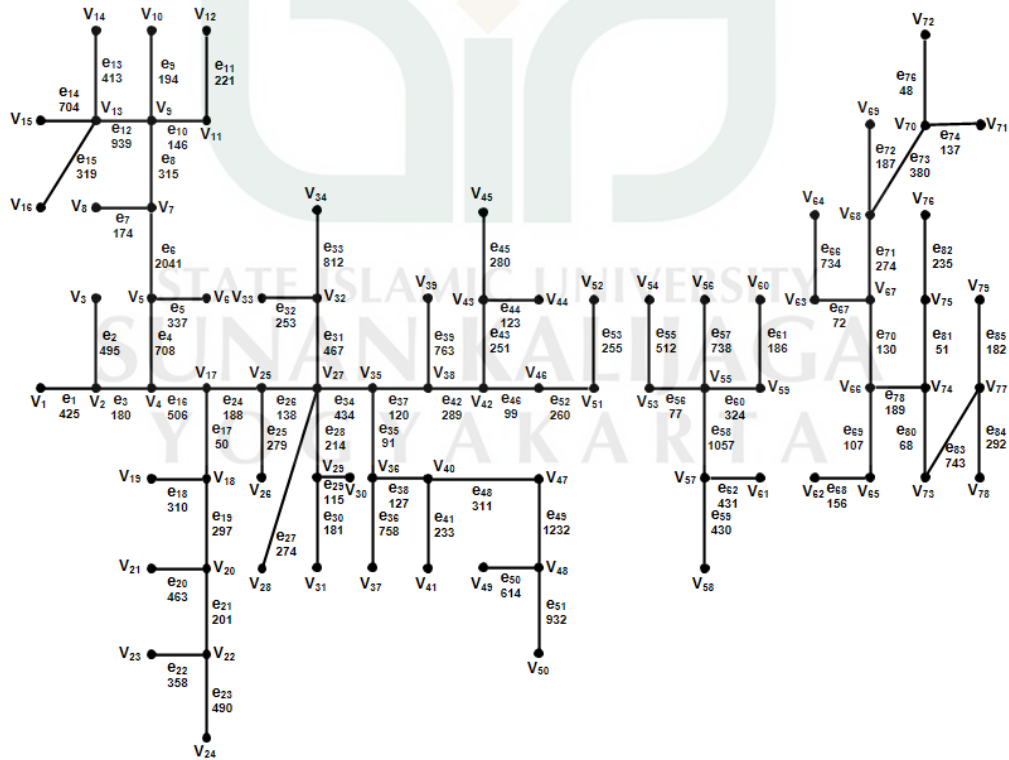


Plot sisi e_{78} :

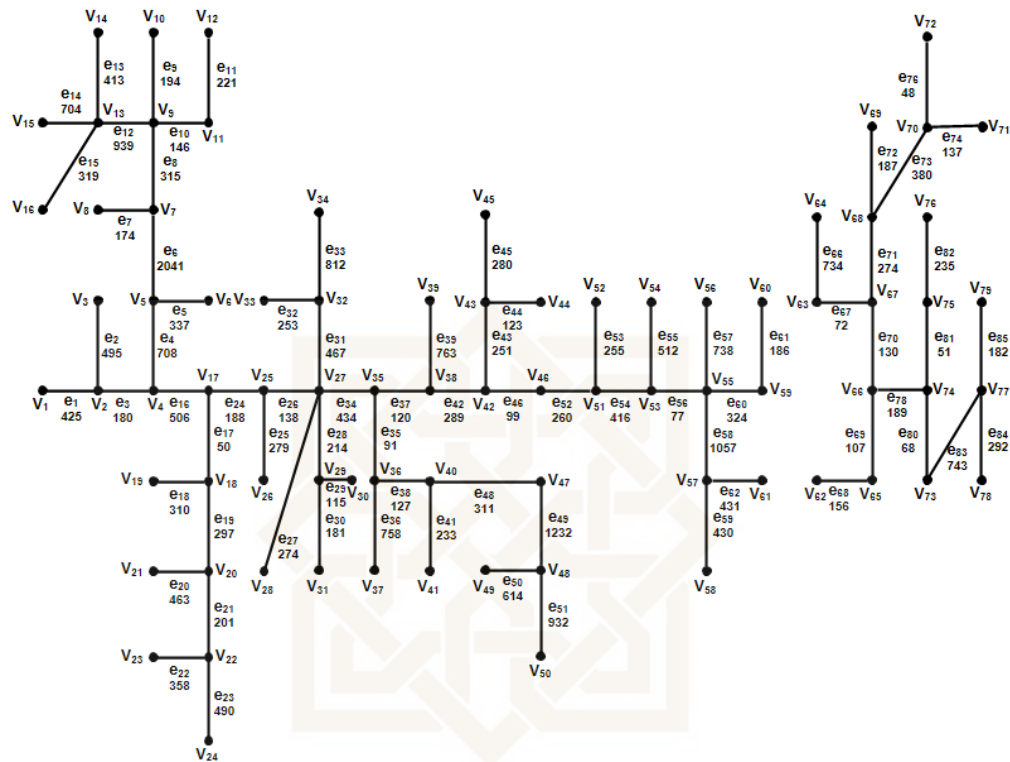


Plot sisi e_{83} :



Plot sisi e_{34} :Plot sisi e_6 :

Plot sisi e_{54} :



**Source Code M.File Program Aplikasi Algoritma Boruvka dalam
Menentukan *Minimum Spanning Tree* Studi Kasus PDAM Gunungkidul
wilayah Wiladeg Dan Tunggul**

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```

        'gui_LayoutFcn', [] , ...
        'gui_Callback', []);
if nargin && ischar(varargin{1})
    gui_State.gui_Callback = str2func(varargin{1});
end

if narginout
    [varargout{1:nargout}] = gui_mainfcn(gui_State, varargin{:});
else
    gui_mainfcn(gui_State, varargin{:});
end
% End initialization code - DO NOT EDIT

% --- Executes just before Algoritma_Boruvka_MST is made visible.
function Algoritma_Boruvka_MST_OpeningFcn(hObject, eventdata,
handles, varargin) %UWIS!!!
% This function has no output args, see OutputFcn.
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles     structure with handles and user databtn (see GUIDATA)
% varargin    command line arguments to Algoritma_Boruvka_MST (see
VARARGIN)

% Choose default command line output for Algoritma_Boruvka_MST
handles.output = hObject;

% Update handles structure
guidata(hObject, handles);

% UIWAIT makes Algoritma_Boruvka_MST wait for user response (see
UIRESUME)
% uiwait(handles.AlgoritmaBoruvkaMST);

set(handles.home1txt, 'visible', 'on');
set(handles.home2txt, 'visible', 'on');
set(handles.graf, 'visible', 'off');
set(handles.polos, 'visible', 'off');
set(handles.start, 'visible', 'on');
set(handles.helpbtn, 'visible', 'on');
set(handles.helptxt, 'visible', 'off');
set(handles.help1txt, 'visible', 'off');
set(handles.bcgndhelp, 'visible', 'off');
set(handles.help1btn, 'visible', 'off');
set(handles.help2btn, 'visible', 'off');
set(handles.help3btn, 'visible', 'off');
set(handles.clearbtn, 'visible', 'on');
set(handles.text1, 'visible', 'off');
set(handles.home2, 'visible', 'off');
set(handles.pilihan1, 'visible', 'off');
set(handles.pilihan2, 'visible', 'off');
set(handles.databtn, 'visible', 'off');
set(handles.datatbl, 'visible', 'off');
set(handles.backbtn, 'visible', 'off');

```



```

set(handles.back1btn,'visible','off');
set(handles.back2btn,'visible','off');
set(handles.back3btn,'visible','off');
set(handles.back4btn,'visible','off');
set(handles.back5btn,'visible','off');
set(handles.back6btn,'visible','off');
set(handles.back7btn,'visible','off');
set(handles.back8btn,'visible','off');
set(handles.back9btn,'visible','off');
set(handles.back10btn,'visible','off');
set(handles.back11btn,'visible','off');
set(handles.A,'visible','off');
set(handles.B,'visible','off');
set(handles.Atxt,'visible','off');
set(handles.koordinat1,'visible','off');
set(handles.koordinat2,'visible','off');
set(handles.koordinat1txt,'visible','off');
set(handles.grafawalbtn,'visible','off');
set(handles.grafawal2btn,'visible','off');
set(handles.inisialbtn,'visible','off');
set(handles.iterasiwhile1btn,'visible','off');
set(handles.iterasiwhile2btn,'visible','off');
set(handles.iterasiwhile3btn,'visible','off');
set(handles.contract1btn,'visible','off');
set(handles.contract2btn,'visible','off');
set(handles.contract3btn,'visible','off');
set(handles.Ttxt,'visible','off');
set(handles.T1,'visible','off');
set(handles.T2,'visible','off');
set(handles.T3,'visible','off');
set(handles.T4,'visible','off');
set(handles.Comptxt,'visible','off');
set(handles.Comp1,'visible','off');
set(handles.Comp2,'visible','off');
set(handles.Comp3,'visible','off');
set(handles.Comp4,'visible','off');
set(handles.jmlcomp1txt,'visible','off');
set(handles.jmlcomp2txt,'visible','off');
set(handles.jmlcomp3txt,'visible','off');
set(handles.jmlcomp4txt,'visible','off');
set(handles.mstbtn,'visible','off');
set(handles.mst2btn,'visible','off');
set(handles.biografbtn,'visible','off');
set(handles.biograf2btn,'visible','off');
set(handles.bobotttotaltxt,'visible','off');
set(handles.bobotttotal,'visible','off');
axes(handles.uin);
gmb=imread('uin.png');
imshow(gmb);
axes(handles.logo_crop);
gmb=imread('uin_crop.png');
imshow(gmb);

% --- Outputs from this function are returned to the command line.
function varargout = Algoritma_Boruvka_MST_OutputFcn(hObject,
eventdata, handles)

```

```

% varargout    cell array for returning output args (see VARARGOUT);
% hObject      handle to figure
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user databtn (see GUIDATA)

% Get default command line output from handles structure
varargout{1} = handles.output;

```

```

% --- Executes on button press in start.
function start_Callback(hObject, eventdata, handles)%UWIS!!!
% hObject      handle to start (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user databtn (see GUIDATA)

```

```

set(handles.home1txt,'visible','off');
set(handles.home2txt,'visible','off');
cla(handles.graf);
set(handles.graf,'visible','off');
cla(handles.polos)
set(handles.polos,'visible','off');
cla(handles.logo_crop)
set(handles.logo_crop,'visible','off');
set(handles.start,'visible','on');
set(handles.helpbtn,'visible','on');
set(handles.help1txt,'visible','off');
set(handles.help1txt,'visible','off');
set(handles.help2btn,'visible','off');
set(handles.help3btn,'visible','off');
set(handles.bcgndhelp,'visible','off');
set(handles.help1btn,'visible','off');
set(handles.clearbtn,'visible','on');
set(handles.pilihan1,'visible','on');
set(handles.pilihan2,'visible','on');
set(handles.databtn,'visible','off');
set(handles.datatbl,'visible','off');
set(handles.backbtn,'visible','off');
set(handles.back1btn,'visible','off');
set(handles.back2btn,'visible','off');
set(handles.back3btn,'visible','off');
set(handles.back4btn,'visible','off');
set(handles.back5btn,'visible','off');
set(handles.back6btn,'visible','off');
set(handles.back7btn,'visible','off');
set(handles.back8btn,'visible','off');
set(handles.back9btn,'visible','off');
set(handles.back10btn,'visible','off');
set(handles.back11btn,'visible','off');
set(handles.text1,'visible','on');
set(handles.home2,'visible','on');
set(handles.home3,'visible','on');
set(handles.home4,'visible','on');
set(handles.home5,'visible','on');
set(handles.home6,'visible','on');

```

```

set(handles.home7,'visible','on');
set(handles.A,'visible','off');
set(handles.Atxt,'visible','off');
set(handles.B,'visible','off');
set(handles.koordinat1,'visible','off');
set(handles.koordinat1txt,'visible','off');
set(handles.koordinat2,'visible','off');
set(handles.grafawalbtn,'visible','off');
set(handles.grafawal2btn,'visible','off');
set(handles.mstbtn,'visible','off');
set(handles.mst2btn,'visible','off');
set(handles.inisialbtn,'visible','off');
set(handles.iterasiwhile1btn,'visible','off');
set(handles.iterasiwhile2btn,'visible','off');
set(handles.iterasiwhile3btn,'visible','off');
set(handles.contract1btn,'visible','off');
set(handles.contract2btn,'visible','off');
set(handles.contract3btn,'visible','off');
set(handles.Ttxt,'visible','off');
set(handles.T1,'visible','off');
set(handles.T2,'visible','off');
set(handles.T3,'visible','off');
set(handles.T4,'visible','off');
set(handles.Comptxt,'visible','off');
set(handles.Comp1,'visible','off');
set(handles.Comp2,'visible','off');
set(handles.Comp3,'visible','off');
set(handles.Comp4,'visible','off');
set(handles.jmlcomp1txt,'visible','off');
set(handles.jmlcomp2txt,'visible','off');
set(handles.jmlcomp3txt,'visible','off');
set(handles.jmlcomp4txt,'visible','off');
set(handles.biografbtn,'visible','off');
set(handles.biograf2btn,'visible','off');
set(handles.bobotttotaltxt,'visible','off');
set(handles.bobotttotal,'visible','off');
axes(handles.uin);
gmb=imread('uin.png');
imshow(gmb);

% --- Executes on button press in helpbtn.
function helpbtn_Callback(hObject, eventdata, handles)%UWIS!!!
% hObject    handle to helpbtn (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user databtn (see GUIDATA)
set(handles.bcgndhelp,'visible','on');
set(handles.help1btn,'visible','on');
set(handles.help2btn,'visible','on');
set(handles.help3btn,'visible','on');
set(handles.help1txt,'visible','on');

```

```

% --- Executes on button press in pilihan1.
function pilihan1_Callback(hObject, eventdata, handles)%UWIS!!!
% hObject    handle to pilihan1 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user databtn (see GUIDATA)
set(handles.pilihan1,'visible','off');
set(handles.pilihan2,'visible','off');
set(handles.text1,'visible','off');
set(handles.home2,'visible','off');
set(handles.B,'visible','on');
set(handles.Atxt,'visible','on');
set(handles.koordinat2,'visible','on');
set(handles.koordinat1txt,'visible','on');
set(handles.grafawal2btn,'visible','on');

% --- Executes on button press in pilihan2.
function pilihan2_Callback(hObject, eventdata, handles)%UWIS!!!
% hObject    handle to pilihan2 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user databtn (see GUIDATA)
set(handles.pilihan1,'visible','off');
set(handles.pilihan2,'visible','off');
set(handles.text1,'visible','off');
set(handles.home2,'visible','off');
set(handles.A,'visible','on');
set(handles.Atxt,'visible','on');
set(handles.koordinat1,'visible','on');
set(handles.koordinat1txt,'visible','on');
set(handles.grafawalbtn,'visible','on');
set(handles.databtn,'visible','on');

% --- Executes on button press in clearbtn.
function clearbtn_Callback(hObject, eventdata, handles)%UWIS!!!
% hObject    handle to clearbtn (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user databtn (see GUIDATA)
set(handles.A,'String','');
set(handles.koordinat1,'String','');
cla(handles.graf);
cla(handles.polos);
set(handles.bobotttotal,'string','');

set(handles.home1txt,'visible','on');
set(handles.home2txt,'visible','on');
set(handles.home3,'visible','on');
set(handles.home4,'visible','on');
set(handles.home5,'visible','on');
set(handles.home6,'visible','on');
set(handles.home7,'visible','on');

```

```

set(handles.graf,'visible','off');
set(handles.polos,'visible','off');
set(handles.start,'visible','on');
set(handles.helpbtn,'visible','on');
set(handles.helptxt,'visible','off');
set(handles.help1txt,'visible','off');
set(handles.bcgndhelp,'visible','off');
set(handles.help1btn,'visible','off');
set(handles.help2btn,'visible','off');
set(handles.help3btn,'visible','off');
set(handles.clearbtn,'visible','on');
set(handles.text1,'visible','off');
set(handles.home2,'visible','off');
set(handles.pilihan1,'visible','off');
set(handles.pilihan2,'visible','off');
set(handles.databtn,'visible','off');
set(handles.datatbl,'visible','off');
set(handles.backbtn,'visible','off');
set(handles.back1btn,'visible','off');
set(handles.back2btn,'visible','off');
set(handles.back3btn,'visible','off');
set(handles.back4btn,'visible','off');
set(handles.back5btn,'visible','off');
set(handles.back6btn,'visible','off');
set(handles.back7btn,'visible','off');
set(handles.back8btn,'visible','off');
set(handles.back9btn,'visible','off');
set(handles.back10btn,'visible','off');
set(handles.back11btn,'visible','off');
set(handles.A,'visible','off');
set(handles.B,'visible','off');
set(handles.Atxt,'visible','off');
set(handles.koordinat1,'visible','off');
set(handles.koordinat2,'visible','off');
set(handles.koordinat1txt,'visible','off');
set(handles.grafawalbtn,'visible','off');
set(handles.grafawal2btn,'visible','off');
set(handles.mstbtn,'visible','off');
set(handles.mst2btn,'visible','off');
set(handles.inisialbtn,'visible','off');
set(handles.iterasiwhile1btn,'visible','off');
set(handles.iterasiwhile2btn,'visible','off');
set(handles.iterasiwhile3btn,'visible','off');
set(handles.contract1btn,'visible','off');
set(handles.contract2btn,'visible','off');
set(handles.contract3btn,'visible','off');
set(handles.Ttxt,'visible','off');
set(handles.T1,'visible','off');
set(handles.T2,'visible','off');
set(handles.T3,'visible','off');
set(handles.T4,'visible','off');
set(handles.Comptxt,'visible','off');
set(handles.Comp1,'visible','off');
set(handles.Comp2,'visible','off');
set(handles.Comp3,'visible','off');
set(handles.Comp4,'visible','off');

```

```

set(handles.jmlcomp1txt,'visible','off');
set(handles.jmlcomp2txt,'visible','off');
set(handles.jmlcomp3txt,'visible','off');
set(handles.jmlcomp4txt,'visible','off');
set(handles.biografbtn,'visible','off');
set(handles.biograf2btn,'visible','off');
set(handles.bobotttotaltxt,'visible','off');
set(handles.bobotttotal,'visible','off');
axes(handles.uin);
gmb=imread('uin.png');
imshow(gmb);
axes(handles.logo_crop);
gmb=imread('uin_crop.png');
imshow(gmb);

function A_Callback(hObject, eventdata, handles)
% hObject      handle to A (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user databtn (see GUIDATA)

% Hints: get(hObject,'String') returns contents of A as text
%         str2double(get(hObject,'String')) returns contents of A
as a double

% --- Executes during object creation, after setting all
properties.
function A_CreateFcn(hObject, eventdata, handles)
% hObject      handle to A (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      empty - handles not created until after all
CreateFcns called

% Hint: edit controls usually have a white background on Windows.
%         See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUiControlBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function koordinat1_Callback(hObject, eventdata, handles)
% hObject      handle to koordinat1 (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user databtn (see GUIDATA)

% Hints: get(hObject,'String') returns contents of koordinat1 as
text
%         str2double(get(hObject,'String')) returns contents of
koordinat1 as a double

```



```

% --- Executes during object creation, after setting all
properties.
function koordinat1_CreateFcn(hObject, eventdata, handles)
% hObject    handle to koordinat1 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    empty - handles not created until after all
CreateFcns called

% Hint: edit controls usually have a white background on Windows.
%         See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUiControlBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

% --- Executes on button press in grafawalbtn.
function grafawalbtn_Callback(hObject, eventdata, handles)%UWIS!!!
% hObject    handle to grafawalbtn (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user databtn (see GUIDATA)
set(handles.A,'visible','off');
set(handles.Atxt,'visible','off');
set(handles.koordinat1,'visible','off');
set(handles.koordinat1txt,'visible','off');
set(handles.grafawalbtn,'visible','off');
set(handles.databtn,'visible','off');
set(handles.datatbl,'visible','off');
set(handles.backbtn,'visible','off');
set(handles.back10btn,'visible','on');
cla(handles.uin)
set(handles.home3,'visible','off');
set(handles.home4,'visible','off');
set(handles.home5,'visible','off');
set(handles.home6,'visible','off');
set(handles.home7,'visible','off');
set(handles.mstbtn,'visible','on');
set(handles.bobotttotaltxt,'visible','on');
set(handles.bobotttotal,'visible','on');

A=str2num(get(handles.A,'string'));
xy=str2num(get(handles.koordinat1,'string'));

bobotttotal=sum(sum(triu(A)));
set(handles.bobotttotal,'string',bobotttotal);

axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf)
set(handles.graf,'visible','on')

```



```

gplot(A,xy,'rO-');
axis ([0 100 0 100])
axis equal

% --- Executes on button press in mstbtn.
function mstbtn_Callback(hObject, eventdata, handles)%UWIS!!!
% hObject      handle to mstbtn (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user data (see GUIDATA)
A=str2num(get(handles.A,'string'));
xy=str2num(get(handles.koordinat1,'string'));
axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf)
set(handles.graf,'visible','on')
set(handles.mstbtn,'visible','off');
set(handles.biografbtn,'visible','on');
set(handles.bobotttotaltxt,'visible','on');
set(handles.bobotttotal,'visible','on');
set(handles.back10btn,'visible','off');
set(handles.back11btn,'visible','on');

n=size(A,1);
a=combntns(1:n,2);
N=n*(n-1)/2;

for i=1:1:N
    e(i)=[A(a(i,1),a(i,2))];
end
e

B=zeros(n,N);
for i=1:1:N
    B(a(i,1),i)=e(i);
    B(a(i,2),i)=e(i);
end
B
C=B;

[b,k]=find(C==0);
s=size(b,1);
for i=1:s
    C(b(i),k(i))=inf;
end
C

for i=1:n
    m(i)=min(C(i,:));
end
m=m'

D=zeros(n,N);

```

```

for i=1:n
    [b,k]=find(B==m(i));
    for j=1:2
        D(b(j),k(j))=m(i);
    end
end
D

K=sum(D)/2;
L=zeros(n);
for i=1:N
    L(a(i,1),a(i,2))=K(i);
end
M=L+L'

UD=sparse(A);
[S,pred]=graphminspantree(UD);

gplot(S,xy,'bO-');
axis ([0 100 0 100])
axis equal

bobotttotal=sum(sum(S));
set(handles.bobotttotal,'string',bobotttotal);

setappdata(0,'matrix_s_mst1',S);

% --- Executes on button press in biograbtn.
function biograbtn_Callback(hObject, eventdata, handles)%UWIS!!!
% hObject    handle to biograbtn (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user databtn (see GUIDATA)
S=getappdata(0,'matrix_s_mst1');

view(biograph(S,[],'ShowArrows','off','ShowWeights','on'))

function label_Callback(hObject, eventdata, handles)
% hObject    handle to label (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user databtn (see GUIDATA)

% Hints: get(hObject,'String') returns contents of label as text
%        str2double(get(hObject,'String')) returns contents of
label as a double

% --- Executes during object creation, after setting all
properties.
function label_CreateFcn(hObject, eventdata, handles)

```

```

% hObject    handle to label (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    empty - handles not created until after all
CreateFcns called

% Hint: edit controls usually have a white background on Windows.
%         See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUiControlBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function B_Callback(hObject, eventdata, handles)
% hObject    handle to B (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user databtn (see GUIDATA)

% Hints: get(hObject,'String') returns contents of B as text
%         str2double(get(hObject,'String')) returns contents of B
as a double

% --- Executes during object creation, after setting all
properties.
function B_CreateFcn(hObject, eventdata, handles)
% hObject    handle to B (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    empty - handles not created until after all
CreateFcns called

% Hint: edit controls usually have a white background on Windows.
%         See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUiControlBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function koordinat2_Callback(hObject, eventdata, handles)
% hObject    handle to koordinat2 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user databtn (see GUIDATA)

% Hints: get(hObject,'String') returns contents of koordinat2 as
text
%         str2double(get(hObject,'String')) returns contents of
koordinat2 as a double

```

```
% --- Executes during object creation, after setting all
properties.
function koordinat2_CreateFcn(hObject, eventdata, handles)
% hObject    handle to koordinat2 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    empty - handles not created until after all
CreateFcns called

% Hint: edit controls usually have a white background on Windows.
%         See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUiControlBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

% --- Executes on button press in grafawal2btn.
function grafawal2btn_Callback(hObject, eventdata,
handles)%UWIS!!!
% hObject    handle to grafawal2btn (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user databtn (see GUIDATA)
set(handles.B,'visible','off');
set(handles.Atxt,'visible','off');
set(handles.koordinat2,'visible','off');
set(handles.koordinat1txt,'visible','off');
set(handles.grafawal2btn,'visible','off');
cla(handles.uin)
set(handles.home3,'visible','off');
set(handles.home4,'visible','off');
set(handles.home5,'visible','off');
set(handles.home6,'visible','off');
set(handles.home7,'visible','off');
set(handles.inisialbtn,'visible','on');
set(handles.backlbtn,'visible','on');
set(handles.bobotttotaltxt,'visible','on');
set(handles.bobotttotal,'visible','on');

A=[0      425 0   0   0   0   0   0   0   0   0   0   0   0   0   0
0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
425 0   495 180 0   0   0   0   0   0   0   0   0   0   0   0
0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
0   495 0   0   0   0   0   0   0   0   0   0   0   0   0   0
0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
```


[illegible]

```

60;52 60;47 70;52 50;52 40;52 30;47 30;52 20;57 50;57 60;62 50;62
60;67 50;67 60;67 40;67 30;72 50;72 60;72 40;77 40;77 60;77 70;82
40;82 50;82 60;82 70;82 80;87 80;92 80;87 90;87 40;87 50;87 60;87
70;92 50;92 40;92 60;];

```

```

bobotttotal=sum(sum(triu(A)));
set(handles.bobotttotal,'string',bobotttotal);

```

```

axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf)
set(handles.graf,'visible','on')
gplot(A,xy,'rO-');
axis ([0 100 0 100])
axis off equal

```

```

setappdata(0,'matrix_graf_awal',A);
setappdata(0,'koordinat_graf_awal',xy);

```

```

% --- Executes on button press in mst2btn.
function mst2btn_Callback(hObject, eventdata, handles)%UWIS!!!
% hObject      handle to mst2btn (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user databtn (see GUIDATA)
A=getappdata(0,'matrix_graf_awal');
xy=getappdata(0,'koordinat_graf_awal');
axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf)
set(handles.graf,'visible','on')
set(handles.mst2btn,'visible','off');
set(handles.Ttxt,'visible','off');
set(handles.T4,'visible','off');
set(handles.Comptxt,'visible','off');
set(handles.Comp4,'visible','off');
set(handles.jmlcomp4txt,'visible','off');
set(handles.biograf2btn,'visible','on');
set(handles.bobotttotaltxt,'visible','on');
set(handles.bobotttotal,'visible','on');
set(handles.back8btn,'visible','off');
set(handles.back9btn,'visible','on');

```

```

n=size(A,1);
a=combntns(1:n,2);
N=n*(n-1)/2;

```

```

for i=1:1:N
    e(i)=[A(a(i,1),a(i,2))];
end
e

```

```

B=zeros(n,N);
for i=1:1:N
    B(a(i,1),i)=e(i);
    B(a(i,2),i)=e(i);
end
B
C=B;

[b,k]=find(C==0);
s=size(b,1);
for i=1:s
    C(b(i),k(i))=inf;
end
C

for i=1:n
    m(i)=min(C(i,:));
end
m=m'

D=zeros(n,N);
for i=1:n
    [b,k]=find(B==m(i));
    for j=1:2
        D(b(j),k(j))=m(i);
    end
end
D

K=sum(D)/2;
L=zeros(n);
for i=1:N
    L(a(i,1),a(i,2))=K(i);
end
M=L+L'

UD=sparse(A);
[S,pred]=graphminspantree(UD);

gplot(S,xy,'bo-');
axis ([0 100 0 100])
axis off equal

bobotttotal=sum(sum(S));
set(handles.bobotttotal,'string',bobotttotal);

setappdata(0,'matrix_s_mst2',S);

% --- Executes on button press in biograf2btn.
function biograf2btn_Callback(hObject, eventdata, handles)
%UWIS!!!
% hObject    handle to biograf2btn (see GCBO)

```

```

% eventdata reserved - to be defined in a future version of
MATLAB
% handles structure with handles and user databtn (see GUIDATA)
S=getappdata(0,'matrix_s_mst2');
ids={'v1','v2','v3','v4','v5','v6','v7','v8','v9','v10','v11','v12',
    'v13','v14','v15','v16','v17','v18','v19','v20','v21','v22','v23',
    'v24','v25','v26','v27','v28','v29','v30','v31','v32','v33','v34',
    'v35','v36','v37','v38','v39','v40','v41','v42','v43','v44','v45',
    'v46','v47','v48','v49','v50','v51','v52','v53','v54','v55','v56',
    'v57','v58','v59','v60','v61','v62','v63','v64','v65','v66','v67',
    'v68','v69','v70','v71','v72','v73','v74','v75','v76','v77','v78',
    'v79'};

view(biograph(S,[ids],'ShowArrows','off','ShowWeights','on'))

% --- Executes on button press in databtn.
function databtn_Callback(hObject, eventdata, handles) %UWIS!!!
% hObject handle to databtn (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles structure with handles and user databtn (see GUIDATA)
set(handles.datatbl,'visible','on');
set(handles.databtn,'visible','off');
set(handles.backbtn,'visible','on');

[filename pathname]=uigetfile({'*.xlsx'},'File Selector');
fullpathname=strcat(pathname, filename);
data=xlsread(fullpathname);
set(handles.datatbl,'Data',data);

% --- Executes on button press in backbtn.
function backbtn_Callback(hObject, eventdata, handles) %UWIS!!!
% hObject handle to backbtn (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles structure with handles and user data (see GUIDATA)
set(handles.datatbl,'visible','off');
set(handles.backbtn,'visible','off');
set(handles.databtn,'visible','on');

% --- Executes on button press in iterasiwhilelbtn.
function iterasiwhilelbtn_Callback(hObject, eventdata, handles)
%UWIS!!!
% hObject handle to iterasiwhilelbtn (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles structure with handles and user data (see GUIDATA)

axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf)

```



```

set(handles.graf,'visible','on')
set(handles.iterasiwhile1btn,'visible','off');
set(handles.Comp1,'visible','on');
set(handles.jmlcompltxt,'visible','on');
set(handles.T1,'visible','off');
set(handles.T2,'visible','on');
set(handles.contract1btn,'visible','on');
set(handles.back2btn,'visible','off');
set(handles.back3btn,'visible','on');

```

```

A=getappdata(0,'matrix_graf_awal');
xy=getappdata(0,'koordinat_graf_awal');

```

```

n=size(A,1);
a=combntns(1:n,2);
N=n*(n-1)/2;

```

```

for i=1:1:N
    e(i)=[A(a(i,1),a(i,2))];
end
e

```

```

B=zeros(n,N);
for i=1:1:N
    B(a(i,1),i)=e(i);
    B(a(i,2),i)=e(i);
end
B
C=B;

```

```

[b,k]=find(C==0);
s=size(b,1);
for i=1:s
    C(b(i),k(i))=inf;
end
C

```

```

for i=1:n
    m(i)=min(C(i,:));
end
m=m'

```

```

D=zeros(n,N);
for i=1:n
    [b,k]=find(B==m(i));
    for j=1:2
        D(b(j),k(j))=m(i);
    end
end
D

```

```

K=sum(D)/2;
L=zeros(n);
for i=1:N
    L(a(i,1),a(i,2))=K(i);

```

```

end
M=L+L'

gplot(M,xy,'bO-');
axis ([0 100 0 100])
axis off equal

setappdata(0,'matrix_m_while1',M);

% --- Executes on button press in contract1btn.
function contract1btn_Callback(hObject, eventdata, handles)
%UWIS!!!
% hObject    handle to contract1btn (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)
set(handles.contract1btn,'visible','off');
set(handles.iterasiwhile2btn,'visible','on');
set(handles.back3btn,'visible','off');
set(handles.back4btn,'visible','on');
set(handles.Comp1,'visible','off');
set(handles.Comp2,'visible','on');
set(handles.jmlcomp1txt,'visible','off');
set(handles.jmlcomp2txt,'visible','on');

axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf)
set(handles.graf,'visible','on')

M=getappdata(0,'matrix_m_while1');
xy=[17 50;17 50;17 50;17 50;17 60;17 60;17 70;17 70;17 80;17 80;17
80;17 80;7 80;7 80;7 80;7 80;22 50;22 50;22 50;22 30;22 30;22
30;22 30;22 30;32 50;32 50;32 50;32 50;32 40;32 40;32 40;32 60;32
60;32 60;37 50;37 50;37 50;37 50;37 50;37 50;37 50;47 50;47 60;47
60;47 60;47 50;37 50;52 30;52 30;52 30;57 50;57 50;62 50;62
50;62 50;72 40;72 40;72 50;72 50;72 40;82 40;82 60;82 60;82 40;82
40;82 60;82 70;82 70;87 80;87 80;87 80;87 40;87 40;87 40;92
50;92 50;92 50;];

gplot(M,xy,'bO-');
axis ([0 100 0 100])
axis off equal

function T2_Callback(hObject, eventdata, handles)
% hObject    handle to T2 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

```

```

% Hints: get(hObject,'String') returns contents of T2 as text
%         str2double(get(hObject,'String')) returns contents of T2
as a double

% --- Executes during object creation, after setting all
properties.
function T2_CreateFcn(hObject, eventdata, handles)
% hObject    handle to T2 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    empty - handles not created until after all
CreateFcns called

% Hint: edit controls usually have a white background on Windows.
%         See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUiControlBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

% --- Executes on selection change in Comp2.
function Comp2_Callback(hObject, eventdata, handles)
% hObject    handle to Comp2 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns Comp2
contents as cell array
%         contents{get(hObject,'Value')} returns selected item from
Comp2

% --- Executes during object creation, after setting all
properties.
function Comp2_CreateFcn(hObject, eventdata, handles)
% hObject    handle to Comp2 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    empty - handles not created until after all
CreateFcns called

% Hint: listbox controls usually have a white background on
Windows.
%         See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUiControlBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

% --- Executes on selection change in T1.

```

```

function T1_Callback(hObject, eventdata, handles)
% hObject      handle to T1 (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns T1
contents as cell array
%           contents{get(hObject,'Value')} returns selected item from
T1

% --- Executes during object creation, after setting all
properties.
function T1_CreateFcn(hObject, eventdata, handles)
% hObject      handle to T1 (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      empty - handles not created until after all
CreateFcns called

% Hint: listbox controls usually have a white background on
Windows.
%           See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUiControlBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

% --- Executes on selection change in Comp1.
function Comp1_Callback(hObject, eventdata, handles)
% hObject      handle to Comp1 (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns Comp1
contents as cell array
%           contents{get(hObject,'Value')} returns selected item from
Comp1

% --- Executes during object creation, after setting all
properties.
function Comp1_CreateFcn(hObject, eventdata, handles)
% hObject      handle to Comp1 (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      empty - handles not created until after all
CreateFcns called

% Hint: listbox controls usually have a white background on
Windows.

```

[illegible]

[illegible]

```
set(handles.T2,'visible','off');
set(handles.T3,'visible','on');
axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf);
set(handles.graf,'visible','on');
set(handles.iterasiwhile2btn,'visible','off');
set(handles.contract2btn,'visible','on');
set(handles.back4btn,'visible','off');
set(handles.back5btn,'visible','on');
```

A=[0	708	0	0	0	506	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0									
708	0	2041		0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0									
0	2041		0	315	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0									
0	0	315	0	939	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0									
0	0	0	939	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0									
506	0	0	0	0	0	297	188	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0									
0	0	0	0	0	297	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0									
0	0	0	0	0	188	0	0	214	467	434	0	0	0	0	0
0	0	0	0	0	0	0									
0	0	0	0	0	0	0	214	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0									
0	0	0	0	0	0	0	467	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0									
0	0	0	0	0	0	0	434	0	0	0	289	0	1232	0	0
0	0	0	0	0	0	0	0								

```

0 0 0 0 0 0 0 0 0 0 0 289 0 251 0 260 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 251 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 1232 0 0 0 0 0
0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 260 0 0 0 416 0
0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 416 0
1057 324 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1057
0 1094 5004 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 324
1094 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
5004 0 0 130 0 0 189 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 130 0 274 0 222 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 274 0 380 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 380 0 0 0
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 189 222 0 0 0 743
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 743 0];
xy=[17 50;17 60;17 70;17 80;7 80;22 50;22 30;32 50;32 40;32 60;37
50;47 50;47 60;52 30;57 50;62 50;72 40;72 50;82 40;82 60;82 70;87
80;87 40;92 50;];

n=size(A,1);
a=combntrns(1:n,2);
N=n*(n-1)/2;

for i=1:1:N
    e(i)=[A(a(i,1),a(i,2))];
end
e

B=zeros(n,N);
for i=1:1:N
    B(a(i,1),i)=e(i);
    B(a(i,2),i)=e(i);
end
B
C=B;

[b,k]=find(C==0);
s=size(b,1);
for i=1:s
    C(b(i),k(i))=inf;
end
C

for i=1:n

```

```

        m(i)=min(C(i,:));
    end
    m=m'

    D=zeros(n,N);
    for i=1:n
        [b,k]=find(B==m(i));
        for j=1:2
            D(b(j),k(j))=m(i);
        end
    end
    D

    K=sum(D)/2;
    L=zeros(n);
    for i=1:N
        L(a(i,1),a(i,2))=K(i);
    end
    M=L+L'

    gplot(M,xy,'bO-');
    axis ([0 100 0 100])
    axis off equal

    setappdata(0,'matrix_m_while2',M);

% --- Executes on button press in contract2btn.
function contract2btn_Callback(hObject, eventdata, handles)
%UWIS!!!
% hObject    handle to contract2btn (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles     structure with handles and user data (see GUIDATA)

set(handles.contract2btn,'visible','off');
set(handles.iterasiwhile3btn,'visible','on');
set(handles.back5btn,'visible','off');
set(handles.back6btn,'visible','on');
set(handles.Comp2,'visible','off');
set(handles.Comp3,'visible','on');
set(handles.jmlcomp2txt,'visible','off');
set(handles.jmlcomp3txt,'visible','on');

axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf);
set(handles.graf,'visible','on');

M=getappdata(0,'matrix_m_while2');
xy=[22  50;22  50;17  80;17  80;17  80;22  50;22  50;22
50;22  50;22  50;47  50;47  50;47  50;47  50;47  50;62
50;62  50;62  50;82  60;82  60;82  60;82  60;82  60;82
60];

```

```

gplot(M,xy,'bo-');
axis ([0 100 0 100])
axis off equal

```

```

% --- Executes on selection change in Comp3.
function Comp3_Callback(hObject, eventdata, handles)
% hObject      handle to Comp3 (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns Comp3
contents as cell array
%           contents{get(hObject,'Value')} returns selected item from
Comp3

```

```

% --- Executes during object creation, after setting all
properties.
function Comp3_CreateFcn(hObject, eventdata, handles)
% hObject      handle to Comp3 (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      empty - handles not created until after all
CreateFcns called

% Hint: listbox controls usually have a white background on
Windows.
%           See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

```

```

% --- Executes on selection change in T3.
function T3_Callback(hObject, eventdata, handles)
% hObject      handle to T3 (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns T3
contents as cell array
%           contents{get(hObject,'Value')} returns selected item from
T3

```

```

% --- Executes during object creation, after setting all
properties.
function T3_CreateFcn(hObject, eventdata, handles)
% hObject      handle to T3 (see GCBO)

```

```

% eventdata reserved - to be defined in a future version of
MATLAB
% handles empty - handles not created until after all
CreateFcns called

% Hint: listbox controls usually have a white background on
Windows.
% See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

% --- Executes on button press in iterasiwhile3btn.
function iterasiwhile3btn_Callback(hObject, eventdata, handles)
%UWIS!!!
% hObject handle to iterasiwhile3btn (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles structure with handles and user data (see GUIDATA)

set(handles.T3,'visible','off');
set(handles.T4,'visible','on');
set(handles.iterasiwhile3btn,'visible','off');
set(handles.contract3btn,'visible','on');
set(handles.back6btn,'visible','off');
set(handles.back7btn,'visible','on');

axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf);
set(handles.graf,'visible','on');

A=[0 2041 434 0 0
2041 0 0 0 0
434 0 0 416 0
0 0 416 0 5004
0 0 0 5004 0];
xy=[22 50;17 80;47 50;62 50;82 50;60];

n=size(A,1);
a=combntns(1:n,2);
N=n*(n-1)/2;

for i=1:1:N
    e(i)=[A(a(i,1),a(i,2))];
end
e

B=zeros(n,N);
for i=1:1:N
    B(a(i,1),i)=e(i);
    B(a(i,2),i)=e(i);

```

```

end
B
C=B;

[b,k]=find(C==0);
s=size(b,1);
for i=1:s
    C(b(i),k(i))=inf;
end
C

for i=1:n
    m(i)=min(C(i,:));
end
m=m'

D=zeros(n,N);
for i=1:n
    [b,k]=find(B==m(i));
    for j=1:2
        D(b(j),k(j))=m(i);
    end
end
D

K=sum(D)/2;
L=zeros(n);
for i=1:N
    L(a(i,1),a(i,2))=K(i);
end
M=L+L'

gplot(M,xy,'bo-');
axis ([0 100 0 100])
axis off equal

setappdata(0,'matrix_m_while3',M);

% --- Executes on button press in contract3btn.
function contract3btn_Callback(hObject, eventdata, handles)
%UWIS!!!
% hObject    handle to contract3btn (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

set(handles.contract3btn,'visible','off');
set(handles.mst2btn,'visible','on');
set(handles.Comp3,'visible','off');
set(handles.Comp4,'visible','on');
set(handles.jmlcomp3txt,'visible','off');
set(handles.jmlcomp4txt,'visible','on');
set(handles.back7btn,'visible','off');
set(handles.back8btn,'visible','on');

```



```

axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf);
set(handles.graf,'visible','on');

M=getappdata(0,'matrix_m_while3');
xy=[47 50;47 50;47 50;47 50;47 50];

gplot(M,xy,'b0-');
axis ([0 100 0 100])
axis off equal

% --- Executes on selection change in comp4.
function Comp4_Callback(hObject, eventdata, handles)
% hObject      handle to comp4 (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns comp4
contents as cell array
%      contents{get(hObject,'Value')} returns selected item from
comp4

% --- Executes during object creation, after setting all
properties.
function Comp4_CreateFcn(hObject, eventdata, handles)
% hObject      handle to comp4 (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      empty - handles not created until after all
CreateFcns called

% Hint: listbox controls usually have a white background on
Windows.
%      See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

% --- Executes on selection change in T4.
function T4_Callback(hObject, eventdata, handles)
% hObject      handle to T4 (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns T4
contents as cell array

```

```
%          contents{get(hObject,'Value')} returns selected item from
T4
```

```
% --- Executes during object creation, after setting all
properties.
```

```
function T4_CreateFcn(hObject, eventdata, handles)
% hObject    handle to T4 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    empty - handles not created until after all
CreateFcns called
```

```
% Hint: listbox controls usually have a white background on
Windows.
```

```
%          See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUiControlBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end
```

```
% --- Executes on button press in help1btn.
```

```
function help1btn_Callback(hObject, eventdata, handles) %UWIS!!!
% hObject    handle to help1btn (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)
```

```
open('help_alg_boruvka.pdf')
```

```
% --- Executes on selection change in Comp2.
```

```
function Comp22_Callback(hObject, eventdata, handles)
% hObject    handle to Comp2 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)
```

```
% Hints: contents = cellstr(get(hObject,'String')) returns Comp2
contents as cell array
%          contents{get(hObject,'Value')} returns selected item from
Comp2
```

```
% --- Executes during object creation, after setting all
properties.
```

```
function Comp22_CreateFcn(hObject, eventdata, handles)
% hObject    handle to Comp2 (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    empty - handles not created until after all
CreateFcns called
```

```

% Hint: listbox controls usually have a white background on
Windows.
%      See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

% --- Executes on selection change in Comp4.
function comp4_Callback(hObject, eventdata, handles)
% hObject      handle to Comp4 (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user data (see GUIDATA)

% Hints: contents = cellstr(get(hObject,'String')) returns Comp4
contents as cell array
%      contents{get(hObject,'Value')} returns selected item from
Comp4

% --- Executes during object creation, after setting all
properties.
function comp4_CreateFcn(hObject, eventdata, handles)
% hObject      handle to Comp4 (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      empty - handles not created until after all
CreateFcns called

% Hint: listbox controls usually have a white background on
Windows.
%      See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

% --- Executes on button press in backlbtn.
function backlbtn_Callback(hObject, eventdata, handles) %UWIS!!!

% hObject      handle to backlbtn (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user data (see GUIDATA)

set(handles.B,'visible','on');
set(handles.Atxt,'visible','on');
set(handles.koordinat2,'visible','on');
set(handles.koordinat1txt,'visible','on');
set(handles.grafawal2btn,'visible','on');

```

```

set(handles.inisialbtn,'visible','off');
set(handles.back1btn,'visible','off');
set(handles.bobotttotaltxt,'visible','off');
set(handles.bobotttotal,'visible','off');
cla(handles.polos)
cla(handles.graf)

set(handles.home3,'visible','on');
set(handles.home4,'visible','on');
set(handles.home5,'visible','on');
set(handles.home6,'visible','on');
set(handles.home7,'visible','on');
axes(handles.uin);
gmb=imread('uin.png');
imshow(gmb);

% --- Executes on button press in back2btn.
function back2btn_Callback(hObject, eventdata, handles) %UWIS!!!
% hObject    handle to back2btn (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

set(handles.inisialbtn,'visible','on');
set(handles.back1btn,'visible','on');
set(handles.back2btn,'visible','off');
set(handles.bobotttotaltxt,'visible','on');
set(handles.bobotttotal,'visible','on');

set(handles.Comptxt,'visible','off');
set(handles.Comp1,'visible','off');
set(handles.jmlcompltxt,'visible','off');
set(handles.Ttxt,'visible','off');
set(handles.T1,'visible','off');

A=getappdata(0,'matrix_graf_awal');
xy=getappdata(0,'koordinat_graf_awal');

bobotttotal=sum(sum(triu(A)));
set(handles.bobotttotal,'string',bobotttotal);

axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf)
set(handles.graf,'visible','on')
gplot(A,xy,'rO-');
axis ([0 100 0 100])
axis off equal

% --- Executes on button press in back3btn.
function back3btn_Callback(hObject, eventdata, handles) %UWIS!!!

```

```

% hObject      handle to back3btn (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user data (see GUIDATA)

axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf)
set(handles.graf, 'visible', 'on')
set(handles.Comp1, 'visible', 'on');
set(handles.jmlcomp1txt, 'visible', 'on');
set(handles.T1, 'visible', 'on');
set(handles.T2, 'visible', 'off');
set(handles.iterasiwhile1btn, 'visible', 'on');
set(handles.contract1btn, 'visible', 'off');
set(handles.back2btn, 'visible', 'on');
set(handles.back3btn, 'visible', 'off');

A=getappdata(0, 'matrix_A_inisialisasi');
xy=getappdata(0, 'matrix_koordinat_inisialisasi');

gplot(A, xy, 'bO-');
axis ([0 100 0 100])
axis off equal

% --- Executes on button press in back4btn.
function back4btn_Callback(hObject, eventdata, handles) %UWIS!!!
% hObject      handle to back4btn (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user data (see GUIDATA)

axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf)
set(handles.graf, 'visible', 'on')
set(handles.Comp1, 'visible', 'on');
set(handles.Comp2, 'visible', 'off');
set(handles.jmlcomp1txt, 'visible', 'on');
set(handles.jmlcomp2txt, 'visible', 'off');
set(handles.T2, 'visible', 'on');
set(handles.contract1btn, 'visible', 'on');
set(handles.iterasiwhile2btn, 'visible', 'off');
set(handles.back3btn, 'visible', 'on');
set(handles.back4btn, 'visible', 'off');

M=getappdata(0, 'matrix_m_while1');
xy=getappdata(0, 'koordinat_graf_awal');

gplot(M, xy, 'bO-');
axis ([0 100 0 100])
axis off equal

```

```

% --- Executes on button press in back5btn.
function back5btn_Callback(hObject, eventdata, handles) %UWIS!!!
% hObject    handle to back5btn (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles     structure with handles and user data (see GUIDATA)

set(handles.back5btn,'visible','off');
set(handles.iterasiwhile2btn,'visible','on');
set(handles.contract2btn,'visible','off');
set(handles.back4btn,'visible','on');
set(handles.back5btn,'visible','off');
set(handles.Comp2,'visible','on');
set(handles.jmlcomp2txt,'visible','on');
set(handles.T2,'visible','on');
set(handles.T3,'visible','off');

axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf)
set(handles.graf,'visible','on')

M=getappdata(0,'matrix_m_while1');
xy=[17 50;17 50;17 50;17 50;17 60;17 60;17 70;17 70;17 80;17 80;17
80;17 80;7 80;7 80;7 80;7 80;22 50;22 50;22 50;22 30;22 30;22
30;22 30;22 30;32 50;32 50;32 50;32 50;32 40;32 40;32 40;32 60;32
60;32 60;37 50;37 50;37 50;37 50;37 50;37 50;37 50;47 50;47 60;47
60;47 60;47 50;37 50;52 30;52 30;52 30;57 50;57 50;62 50;62 50;62
50;62 50;72 40;72 40;72 50;72 50;72 40;82 40;82 60;82 60;82 40;82
40;82 60;82 70;82 70;87 80;87 80;87 80;87 80;87 40;87 40;87 40;92
50;92 50;92 50;];

gplot(M,xy,'bO-');
axis ([0 100 0 100])
axis off equal

% --- Executes on button press in back6btn.
function back6btn_Callback(hObject, eventdata, handles) %UWIS!!!
% hObject    handle to back6btn (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles     structure with handles and user data (see GUIDATA)

set(handles.contract2btn,'visible','on');
set(handles.iterasiwhile3btn,'visible','off');
set(handles.back5btn,'visible','on');
set(handles.back6btn,'visible','off');
set(handles.T3,'visible','on');
set(handles.Comp2,'visible','on');
set(handles.Comp3,'visible','off');
set(handles.jmlcomp2txt,'visible','on');

```

```

set(handles.jmlcomp3txt,'visible','off');

M=getappdata(0,'matrix_m_while2');
xy=[17 50;17 60;17 70;17 80;7 80;22 50;22 30;32 50;32 40;32 60;37
50;47 50;47 60;52 30;57 50;62 50;72 40;72 50;82 40;82 60;82 70;87
80;87 40;92 50;];

axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf);
set(handles.graf,'visible','on');

gplot(M,xy,'bO-');
axis ([0 100 0 100])
axis off equal

% --- Executes on button press in back7btn.
function back7btn_Callback(hObject, eventdata, handles) %UWIS!!!
% hObject      handle to back7btn (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user data (see GUIDATA)

set(handles.iterasiwhile3btn,'visible','on');
set(handles.contract3btn,'visible','off');
set(handles.back6btn,'visible','on');
set(handles.back7btn,'visible','off');
set(handles.Comp3,'visible','on');
set(handles.jmlcomp3txt,'visible','on');
set(handles.T3,'visible','on');
set(handles.T4,'visible','off');

axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf);
set(handles.graf,'visible','on');

M=getappdata(0,'matrix_m_while2');
xy=[22 50;22 50;17 80;17 80;17 80;22 50;22 50;22
50;22 50;22 50;47 50;47 50;47 50;47 50;47 50;62
50;62 50;62 50;82 60;82 60;82 60;82 60;82
60];

gplot(M,xy,'bO-');
axis ([0 100 0 100])
axis off equal

% --- Executes on button press in back8btn.
function back8btn_Callback(hObject, eventdata, handles) %UWIS!!!

```



```

% hObject      handle to back8btn (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user data (see GUIDATA)

set(handles.T4,'visible','on');
set(handles.contract3btn,'visible','on');
set(handles.mst2btn,'visible','off');
set(handles.back7btn,'visible','on');
set(handles.back8btn,'visible','off');
set(handles.Comp3,'visible','on');
set(handles.Comp4,'visible','off');
set(handles.jmlcomp3txt,'visible','on');
set(handles.jmlcomp4txt,'visible','off');

axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf);
set(handles.graf,'visible','on');

M=getappdata(0,'matrix_m_while3');
xy=[22 50;17 80;47 50;62 50;82 60];

gplot(M,xy,'b0-');
axis ([0 100 0 100])
axis off equal

% --- Executes on button press in back9btn.
function back9btn_Callback(hObject, eventdata, handles) %UWIS!!!
% hObject      handle to back9btn (see GCBO)
% eventdata    reserved - to be defined in a future version of
MATLAB
% handles      structure with handles and user data (see GUIDATA)

set(handles.mst2btn,'visible','on');
set(handles.Ttxt,'visible','on');
set(handles.T4,'visible','on');
set(handles.Comptxt,'visible','on');
set(handles.Comp4,'visible','on');
set(handles.jmlcomp4txt,'visible','on');
set(handles.biograf2btn,'visible','off');
set(handles.bobotttotaltxt,'visible','off');
set(handles.bobotttotal,'visible','off');
set(handles.back8btn,'visible','on');
set(handles.back9btn,'visible','off');

axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf);
set(handles.graf,'visible','on');

M=getappdata(0,'matrix_m_while3');

```



```

xy=[47 50;47 50;47 50;47 50;47 50];

gplot(M,xy,'bO-');
axis ([0 100 0 100])
axis off equal

% --- Executes on button press in back10btn.
function back10btn_Callback(hObject, eventdata, handles) %UWIS!!!
% hObject handle to back10btn (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles structure with handles and user data (see GUIDATA)

set(handles.A,'visible','on');
set(handles.Atxt,'visible','on');
set(handles.koordinat1,'visible','on');
set(handles.koordinat1txt,'visible','on');
set(handles.grafawalbtn,'visible','on');
set(handles.databtn,'visible','on');
set(handles.back10btn,'visible','off');

set(handles.mstbtn,'visible','off');
set(handles.bobotttotaltxt,'visible','off');
set(handles.bobotttotal,'visible','off');
cla(handles.polos)
cla(handles.graf)
set(handles.graf,'visible','off')

set(handles.home3,'visible','on');
set(handles.home4,'visible','on');
set(handles.home5,'visible','on');
set(handles.home6,'visible','on');
set(handles.home7,'visible','on');
axes(handles.uin);
gmb=imread('uin.png');
imshow(gmb);

% --- Executes on button press in back11btn.
function back11btn_Callback(hObject, eventdata, handles) %UWIS!!!
% hObject handle to back11btn (see GCBO)
% eventdata reserved - to be defined in a future version of
MATLAB
% handles structure with handles and user data (see GUIDATA)

set(handles.back11btn,'visible','off');
set(handles.back10btn,'visible','on');
set(handles.mstbtn,'visible','on');
set(handles.biografbtn,'visible','off');

A=str2num(get(handles.A,'string'));
xy=str2num(get(handles.koordinat1,'string'));

```

```

bobotttotal=sum(sum(triu(A)));
set(handles.bobotttotal,'string',bobotttotal);

axes(handles.polos);
gmb=imread('polos2.jpg');
imshow(gmb);
axes(handles.graf)
set(handles.graf,'visible','on')
plot(A,xy,'rO-');
axis ([0 100 0 100])
axis equal

% --- Executes on button press in help2btn.
function help2btn_Callback(hObject, eventdata, handles) %UWIS!!!
% hObject    handle to help2btn (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

open('help_tutorial_program.pdf')

% --- Executes on button press in help3btn.
function help3btn_Callback(hObject, eventdata, handles) %UWIS!!!
% hObject    handle to help3btn (see GCBO)
% eventdata  reserved - to be defined in a future version of
MATLAB
% handles    structure with handles and user data (see GUIDATA)

open('help_biodata.pdf')

```

Lampiran 5



KEMENTERIAN AGAMA REPUBLIK INDONESIA
UNIVERSITAS ISLAM NEGERI SUNAN KALIJAGA YOGYAKARTA
FAKULTAS SAINS DAN TEKNOLOGI
Jalan Marsda Adisucipto Yogyakarta 55281
Telepon (0274) 519739; Faksimili (0274) 540971;
Website: <http://saintek.uin-suka.ac.id>

Nomor : B-187/Un.02/DST.1/PP.05.3/01/2017

18 Januari 2017

Lamp : 1 bendel Proposal

Perihal : Permohonan Izin Penelitian

Kepada
Yth. Gubernur Daerah Istimewa Yogyakarta
c.q Kepala Biro Administrasi Pembangunan
Setda Provinsi D.I Yogyakarta
di
Yogyakarta

Assalamu'alaikum Wr.Wb.

Kami beritahukan bahwa untuk kelengkapan penyusunan skripsi dengan judul :

"Penerapan Algoritma Boruvka Dalam Menentukan *Minimum Spanning Tree* (Studi Kasus: PDAM Gunungkidul)"

diperlukan penelitian. Oleh karena itu, kami mengharap kiranya Bapak/Ibu berkenan memberi izin kepada mahasiswa kami:

Nama : Dani Nur Afandi
NIM : 12610019
Semester : IX
Program studi : Matematika
Alamat : Jln. Jenderal Sudirman 01/02 Kunti Bungkal Ponorogo

Untuk mengadakan penelitian di : Perusahaan Daerah Air Minum Tirta Handayani
Gunungkidul

Metode pengumpulan data : Dokumentasi, Wawancara, dan *Focus Group Discussion*
Adapun waktunya mulai tanggal : 23 Januari 2017 s.d 23 Februari 2017

Kemudian atas perkenan Bapak/Ibu kami sampaikan terima kasih.

Wassalamu'alaikum Wr.Wb.

a.n. Dekan
Wakil Dekan Bidang Akademik,


d. Agung Fatwanto

Tembusan :
- Dekan (Sebagai Laporan)

Lampiran 6



PEMERINTAH DAERAH DAERAH ISTIMEWA YOGYAKARTA
BADAN KESATUAN BANGSA DAN POLITIK
Jl. Jenderal Sudirman No 5 Yogyakarta – 55233
Telepon : (0274) 551136, 551275, Fax (0274) 551137

Yogyakarta, 26 Januari 2017

Kepada Yth. :

Nomor : 074/590/Kesbangpol/2017
Perihal : Rekomendasi Penelitian

Bupati Gunungkidul
Up. Kepala Kantor Pelayanan Satu Pintu
Kabupaten Gunungkidul

Di
WONOSARI

Memperhatikan surat :

Dari : Sains dan Teknologi, Universitas Islam Negeri Sunan
Kalijaga Yogyakarta
Nomor : B-187/Un 02/DST.1/PP.05.3/01/2017
Tanggal : 18 Januari 2017
Perihal : Permohonan Izin Penelitian

Setelah mempelajari surat permohonan dan proposal yang diajukan, maka dapat diberikan surat rekomendasi tidak keberatan untuk melaksanakan riset/penelitian dalam rangka penyusunan skripsi dengan judul proposal : **"PENERAPAN ALGORITMA BORUVKA DALAM MENENTUKAN MINIMUM SPANNING TREE (Studi Kasus PDAM Gunungkidul)**

Nama : **DANI NUR AFANDI**
NIM : **12610019**
No. HP/Identitas : **089655139932/3502031611930001**
Prodi/Jurusan : **Matematika**
Program : **Sains dan Teknologi, Universitas Islam Negeri Sunan Kalijaga Yogyakarta**
Lokasi Penelitian : **PDAM Gunungkidul**
Waktu Penelitian : **26 Januari 2017 s/d 23 Februari 2017**

Sehubungan dengan maksud tersebut, diharapkan agar pihak yang terkait dapat memberikan bantuan / fasilitas yang dibutuhkan.

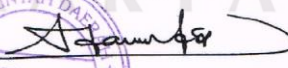
Kepada yang bersangkutan diwajibkan :

1. Menghormati dan mentaati peraturan dan tata tertib yang berlaku di wilayah riset/penelitian;
2. Tidak dibenarkan melakukan riset/penelitian yang tidak sesuai atau tidak ada kaitannya dengan judul riset/penelitian dimaksud;
3. Menyerahkan hasil riset/penelitian kepada Badan Kesbangpol DIY.
4. Surat rekomendasi ini dapat diperpanjang maksimal 2 (dua) kali dengan menunjukkan surat rekomendasi sebelumnya, paling lambat 7 (tujuh) hari kerja sebelum berakhirnya surat rekomendasi ini.

Rekomendasi Ijin Riset/Penelitian ini dinyatakan tidak berlaku, apabila ternyata pemegang tidak mentaati ketentuan tersebut di atas.

Demikian untuk menjadikan maklum.

KEPALA
BADAN KESBANGPOL DIY


AGUNG SUPRIYONO, SH
NIP. 19601026 199203 1 004

Tembusan disampaikan Kepada Yth :

1. Gubernur DIY (sebagai laporan)
2. Dekan Sains dan Teknologi, Universitas Islam Negeri Sunan Kalijaga Yogyakarta
3. Yang bersangkutan.

Lampiran 7



PEMERINTAH KABUPATEN GUNUNGKIDUL
DINAS PENANAMAN MODAL PELAYANAN TERPADU
Alamat : Jalan Kesatrian No. 38 Tlp (0274) 391942 Wonosari 55812

SURAT KETERANGAN / IJIN

Nomor : 0083/PEN/I/2017

Membaca : Surat dari BADAN KESATUAN BANGSA DAN POLITIK YOGYAKARTA, Nomor : 074/590/Kesbangpol/2017 tanggal 26 Januari 2017, hal : Izin Penelitian

Mengingat : 1. Keputusan Menteri dalam Negeri Nomor 9 Tahun 1983 tentang Pedoman Pendataan Sumber dan Potensi Daerah;

2. Keputusan Menteri dalam Negeri Nomor 61 Tahun 1983 tentang Pedoman Penyelenggaraan Pelaksanaan Penelitian dan Pengembangan di lingkungan Departemen Dalam Negeri;

3. Surat Keputusan Gubernur Daerah Istimewa Yogyakarta Nomor 38/12/2004 tentang Pemberian Izin Penelitian di Provinsi Daerah Istimewa Yogyakarta;

Dijijinkan kepada :
Nama : **Dani Nur Afandi NIM : 12610019/3502031611930001**
Fakultas/Instansi : Sains dan Teknologi/UIN SUNAN KALIJAGA
Alamat Instansi : Jl. Marsda Adisucipto , Yogyakarta
Alamat Rumah : Jl. Jenderal Sudirman 001/002 Kunti, Bungal, Ponorogo
Keperluan : Izin penelitian dengan judul : "PENERAPAN ALGORITMA BORUVKA DALAM MENENTUKAN MINIMUM SPANNING TREE (Studi Kasus : PDAM Gunungkidul)"

Lokasi Penelitian : PDAM Kab. Gunungkidul
Dosen Pembimbing : Noor Saif Muhammad Mussafi, S. Si., M.Sc.
Waktunya : Mulai tanggal : 26 Januari 2017 s/d 23 Februari 2017
Dengan ketentuan :

Terlebih dahulu memenuhi/melaporkan diri kepada Pejabat setempat (Camat, Lurah/Kepala Desa, Kepala Instansi) untuk mendapat petunjuk seperlunya.

1. Wajib menjaga tata tertib dan mentaati ketentuan-ketentuan yang berlaku setempat
 2. Wajib memberi laporan hasil penelitiannya kepada Bupati Gunungkidul (cq. BAPPEDA Kab. Gunungkidul) dalam bentuk *softcopy format pdf* yang tersimpan dalam keping compact Disk (CD) dan dalam bentuk data yang dikirim via e-mail ke alamat : litbangbappeda.gk@gmail.com dengan tembusan ke Kantor Perpustakaan dan Arsip Daerah dengan alamat e-mail : kpadgunungkidul@gmail.com.
 3. Ijin ini tidak disalahgunakan untuk tujuan tertentu yang dapat mengganggu kestabilan Pemerintah dan hanya diperlukan untuk keperluan ilmiah.
 4. Surat ijin ini dapat diajukan lagi untuk mendapat perpanjangan bila diperlukan.
 5. Surat ijin ini dibatalkan sewaktu-waktu apabila tidak dipenuhi ketentuan-ketentuan tersebut diatas.
- Kemudian kepada para Pejabat Pemerintah setempat diharapkan dapat memberikan bantuan seperlunya.

Dikeluarkan di : Wonosari
Pada tanggal : 26 Januari 2017

An. Bupati
Kepala



Tembusan disampaikan kepada Yth.

1. Bupati Kab. Gunungkidul (Sebagai Laporan);
2. Kepala BAPPEDA Kab. Gunungkidul;
3. Kepala Badan KESBANGPOL Kab. Gunungkidul;
4. Direktur PDAM Kab. Gunungkidul;
5. Arsip;

DAFTAR RIWAYAT HIDUP

A. Data Pribadi

Nama : Dani Nur Afandi
Tempat, Tanggal, Lahir : Ponorogo, 16 November 1993
Umur : 23 Tahun
Alamat : Jln. Jenderal Sudirman, RT01/RW02,
Des. Kunti, Kec. Bungkal, Kab. Ponorogo
Jenis Kelamin : Laki-Laki
No. Handphone : 081226199916
Status : Belum Menikah
Email : dani.12610019@gmail.com



B. Riwayat Pendidikan

1. TK Bustanul Athfal Aisiyah Kunti
2. SDN Kunti
3. MTs Al-Ishlah Bungkal
4. SMK PGRI 2 Ponorogo
5. Universitas Islam Negeri Sunan Kalijaga Yogyakarta