«SKRIPSI/TUGAS AKHIR»

«JUDUL BAHASA INDONESIA»

«NAMA LENGKAP»

NPM: «10 digit NPM UNPAR»

PROGRAM STUDI «MATEMATIKA/FISIKA/TEKNIK INFORMATIKA»
FAKULTAS TEKNOLOGI INFORMASI DAN SAINS
UNIVERSITAS KATOLIK PARAHYANGAN
«tahun»

«FINAL PROJECT/UNDERGRADUATE THESIS»

«JUDUL BAHASA INGGRIS»

«NAMA LENGKAP»

NPM: «10 digit NPM UNPAR»

DEPARTMENT OF
«MATHEMATICS/PHYSICS/INFORMATICS»
FACULTY OF INFORMATION TECHNOLOGY AND SCIENCES
PARAHYANGAN CATHOLIC UNIVERSITY
«tahun»

LEMBAR PENGESAHAN

«JUDUL BAHASA INDONESIA»

«NAMA LENGKAP»

NPM: «10 digit NPM UNPAR»

Bandung, «tanggal» «bulan» «tahun»

Menyetujui,

Pembimbing Utama	Pembimbing Pendamping
«pembimbing utama/1»	«pembimbing pendamping/2»

Ketua Tim Penguji	Anggota Tim Penguji
«penguji 1»	«penguji 2»

Mengetahui,

Ketua Program Studi

Jack Doe

PERNYATAAN

Dengan ini saya yang bertandatangan di bawah ini menyatakan bahwa «skripsi/tugas akhir» dengan judul:

«JUDUL BAHASA INDONESIA»

adalah benar-benar karya saya sendiri, dan saya tidak melakukan penjiplakan atau pengutipan dengan cara-cara yang tidak sesuai dengan etika keilmuan yang berlaku dalam masyarakat keilmuan.

Atas pernyataan ini, saya siap menanggung segala risiko dan sanksi yang dijatuhkan kepada saya, apabila di kemudian hari ditemukan adanya pelanggaran terhadap etika keilmuan dalam karya saya, atau jika ada tuntutan formal atau non-formal dari pihak lain berkaitan dengan keaslian karya saya ini.

Dinyatakan di Bandung,
Tanggal «tanggal» «bulan» «tahun»

Meterai
Rp. 6000

«Nama Lengkap»
NPM: «10 digit NPM UNPAR»

ABSTRAK

«Tuliskan abstrak anda di sini, dalam bahasa Indonesia»
As any dedicated reader can clearly see, the Ideal of practical reason is a representation of, as far as I know, the things in themselves; as I have shown elsewhere, the phenomena should only be used as a canon for our understanding. The paralogisms of practical reason are what first give rise to the architectonic of practical reason. As will easily be shown in the next section, reason would thereby be made to contradict, in view of these considerations, the Ideal of practical reason, yet the manifold depends on the phenomena. Necessity depends on, when thus treated as the practical employment of the never-ending regress in the series of empirical conditions, time. Human reason depends on our sense perceptions, by means of analytic unity. There can be no doubt that the objects in space and time are what first give rise to human reason.

Kata-kata kunci: «Tuliskan di sini kata-kata kunci yang anda gunakan, dalam bahasa Indonesia»

ABSTRACT

«Tuliskan abstrak anda di sini, dalam bahasa Inggris»
Let us suppose that the noumena have nothing to do with necessity, since knowledge of the Categories is a posteriori. Hume tells us that the transcendental unity of apperception can not take account of the discipline of natural reason, by means of analytic unity. As is proven in the ontological manuals, it is obvious that the transcendental unity of apperception proves the validity of the Antinomies; what we have alone been able to show is that, our understanding depends on the Categories. It remains a mystery why the Ideal stands in need of reason. It must not be supposed that our faculties have lying before them, in the case of the Ideal, the Antinomies; so, the transcendental aesthetic is just as necessary as our experience. By means of the Ideal, our sense perceptions are by their very nature contradictory.

Keywords: «Tuliskan di sini kata-kata kunci yang anda gunakan, dalam bahasa Inggris»

«kepada siapa anda mempersembahkan skripsi ini. . . ?»

KATA PENGANTAR

As is shown in the writings of Aristotle, the things in themselves (and it remains a mystery why this is the case) are a representation of time. Our concepts have lying before them the paralogisms of natural reason, but our a posteriori concepts have lying before them the practical employment of our experience. Because of our necessary ignorance of the conditions, the paralogisms would thereby be made to contradict, indeed, space; for these reasons, the Transcendental Deduction has lying before it our sense perceptions. (Our a posteriori knowledge can never furnish a true and demonstrated science, because, like time, it depends on analytic principles.) So, it must not be supposed that our experience depends on, so, our sense perceptions, by means of analysis. Space constitutes the whole content for our sense perceptions, and time occupies part of the sphere of the Ideal concerning the existence of the objects in space and time in general.

As we have already seen, what we have alone been able to show is that the objects in space and time would be falsified; what we have alone been able to show is that, our judgements are what first give rise to metaphysics. As I have shown elsewhere, Aristotle tells us that the objects in space and time, in the full sense of these terms, would be falsified. Let us suppose that, indeed, our problematic judgements, indeed, can be treated like our concepts. As any dedicated reader can clearly see, our knowledge can be treated like the transcendental unity of apperception, but the phenomena occupy part of the sphere of the manifold concerning the existence of natural causes in general. Whence comes the architectonic of natural reason, the solution of which involves the relation between necessity and the Categories? Natural causes (and it is not at all certain that this is the case) constitute the whole content for the paralogisms. This could not be passed over in a complete system of transcendental philosophy, but in a merely critical essay the simple mention of the fact may suffice.

Bandung, «bulan» «tahun»

Penulis

DAFTAR ISI

DAFTAR GAMBAR

DAFTAR TABEL

BAB 1

PENDAHULUAN

1.1 Latar Belakang

Waktu adalah elemen penting dalam hidup kita. Kita sebagai manusia merencanakan semua kegiatan dan rutinitas yang akan dilakukan agar kegiatan dan rutinitas tersebut bisa berjalan dengan baik dan sebagai mana mestinya. Waktu adalah kunci dari segala rencana yang akan dibuat.

Terkadang di kota-kota besar kemacetan akan menjadi sangat merepotkan dan akan menghancurkan semua rencana yang dibuat. Efeknya adalah keterlambatan yang akan mempengaruhi seluruh rangkaian kegiatan yang telah direncanakan. Bandung adalah salah satunya dari kota besar yang memiliki permasalahan kemacetan ini dan terkadang kemacetan sendiri tidak dapat diprediksi dan akan sangat merepotkan.

Dengan demikian, untuk merencanakan segalanya agar berjalan sesuai dengan rencana, perlu untuk mengoptimalkan waktu tempuh dari jalur yang sering kita gunakan agar tidak terjebak dalam kemacetan yang akan merepotkan. Kemacetan ini sendiri bisa dianalisis dengan menentukan pada pukul berapa sajakah terjadi kemacetan pada jalur yang kita tempuh.

Salah satu teknologi yang telah ada, *Google Direction* adalah suatu layanan web untuk menghitung arah antar lokasi. Layanan web ini didesain menghitung arah alamat statis untuk penempatan konten aplikasi pada peta (*Google Maps*). Dengan layanan web ini juga kita bisa mendapatkan data: waktu tempuh dari lokasi awal sampai lokasi tujuan, jalan yang ditempuh.

Layanan web sendiri adalah setiap layanan yang tersedia melalui internet. Layanan web ini sendiri menggunakan suatu format sistem pesan yang terstandarisasi yang bisa diakses oleh aplikasi lain. Layanan web ini juga tidak terikat pada satu system operasi atau Bahasa pemrograman agar bisa diakses oleh aplikasi lain. contoh format dari layanan web adalah JSON dan XML.

Google Direction sendiri menggunakan protokol HTTP untuk bisa saling berkomunikasi dengan aplikasi. Protokol HTTP merupakan protokol yang berjalan diatas protokol TCP pada port 80 yang digunakan untuk mengirim dokumen atau halaman. Pesan protokol http diformat untuk dapat ditampilkan pada aplikasi.

Dalam penelitian ini, akan membangun aplikasi untuk mengeluarkan hasil analisis waktu tempuh optimal dengan memanfaatkan teknologi dari *google* yaitu *google direction*.

1.2 Rumusan Masalah

Berdasarkan latar belakang masalah yang telah dijelaskan, rumusan masalah pada penelitian ini adalah:

- Bagaimana protokol HTTP?
- Bagaimana komunikasi layanan Google Direction?
- Bagaimana mengimplementasikan komunikasi Google Direction di Java?
- Bagaimana mengimplementasikan komunikasi Google Direction dengan permintaan beberapa waktu?

- Bagaimana menganalisis hasil dari permintaan komunikasi Google Direction pada suatu jalur?

1.3 Tujuan

Berdasarkan rumusan masalah di atas, maka tujuan dari penelitian ini adalah:

- memahami protokol HTTP.
- memahami layanan web dari Google Direction.
- mengimplementasikan komunikasi layanan web Google Direction pada Java.
- menganalisis waktu tempuh terbaik pada suatu jalur.

1.4 Batasan Masalah

Batasan masalah yang akan digunakan untuk peneliatian ini adalah:

1. Penetapan tujuan awal dari program yang dibuat adalah alamat dari Universitas Katolik Parahyangan.
2. Penetapan tujuan akhir dari program yang dibuat adalah alamat dari rumah pembimbing penulis dan alamat rumah penulis.
3. Waktu tempuh dihitung setiap jam dalam satu hari.
4. Waktu tempuh dihitung setiap hari dalam seminggu.

1.5 Metodologi

Dalam penyusunan skripsi ini mengikuti langkah-langkah metodologi penelitian sebagai berikut :

1. Melakukan studi pustaka untuk dijadikan referensi dalam melakukan pembangunan aplikasi Analisis waktu tempuh kota Bandung,
2. Melakukan analisis protokol HTTP, layanan web untuk mendapatkan hasil waktu tempuh dari tujuan asal ke tujuan akhir,
3. Melakukan perancangan perangkat lunak.
4. Melakukan uji coba sesuai dengan sample,
5. Melakukan penarikan kesimpulan dan saran pada hasil analisis tersebut.

1.6 Sistematika Pembahasan

Sistematika penulisan laporan pada skripsi ini adalah sebagai berikut :

1. Bab Pendahuluan
   Bab 1 berisi latar belakang, rumusan masalah, tujuan, batasan masalah, metodologi penelitian, dan sistematika pembahasan dalam pelaksanaan penelitian ini.
2. Bab Dasar Teori
   Bab 2 berisi tentang definisi-definisi dasar teori tentang protokol HTTP, layanan web.

3. Bab Analisis
   Bab 3 berisi analisis protokol HTTP, layanan web dan analisis perangkat lunak.

4. Bab Perancangan
   Bab 4 berisi tentang pembahasan menegenai perancangan perangkat lunak untuk menampilkan hasil analisis waktu tempuh.

5. Bab Impelemntasi dan Pengujian
   Bab 5 berisi tentang pengimplementasian dari komunikasi antara aplikasi dan layanan web dan bagan hasil analisis waktu tempuhnya.

6. Bab Kesimpulan dan Saran
   Bab 6 berisi penarikan kesimpulan selama menyelesaikan skripsi dan saran yang diusulkan untuk penelitian berikutnya.

BAB 2

LANDASAN TEORI

2.1 Skripsi

Rencananya akan diisi dengan penjelasan umum mengenai buku skripsi.

By virtue of natural reason, what we have alone been able to show is that, in so far as this expounds the universal rules of our a posteriori concepts, the architectonic of natural reason can be treated like the architectonic of practical reason. Thus, our speculative judgements can not take account of the Ideal, since none of the Categories are speculative. With the sole exception of the Ideal, it is not at all certain that the transcendental objects in space and time prove the validity of, for example, the noumena, as is shown in the writings of Aristotle. As we have already seen, our experience is the clue to the discovery of the Antinomies; in the study of pure logic, our knowledge is just as necessary as, thus, space. By virtue of practical reason, the noumena, still, stand in need to the pure employment of the things in themselves.

2.2 LaTeX

Mengapa menggunakan LaTeX untuk buku skripsi dan apa keunggulan/kerugiannya bagi mahasiswa dan pembuat template.

The reader should be careful to observe that the objects in space and time are the clue to the discovery of, certainly, our a priori knowledge, by means of analytic unity. Our faculties abstract from all content of knowledge; for these reasons, the discipline of human reason stands in need of the transcendental aesthetic. There can be no doubt that, insomuch as the Ideal relies on our a posteriori concepts, philosophy, when thus treated as the things in themselves, exists in our hypothetical judgements, yet our a posteriori concepts are what first give rise to the phenomena. Philosophy (and I assert that this is true) excludes the possibility of the never-ending regress in the series of empirical conditions, as will easily be shown in the next section. Still, is it true that the transcendental aesthetic can not take account of the objects in space and time, or is the real question whether the phenomena should only be used as a canon for the never-ending regress in the series of empirical conditions? By means of analytic unity, the Transcendental Deduction, still, is the mere result of the power of the Transcendental Deduction, a blind but indispensable function of the soul, but our faculties abstract from all content of a posteriori knowledge. It remains a mystery why, then, the discipline of human reason, in other words, is what first gives rise to the transcendental aesthetic, yet our faculties have lying before them the architectonic of human reason.

2.3 Template Skripsi FTIS UNPAR

Akan dipaparkan bagaimana menggunakan template ini, termasuk petunjuk singkat membuat referensi, gambar dan tabel. Juga hal-hal lain yang belum terpikir sampai saat ini.

However, we can deduce that our experience (and it must not be supposed that this is true) stands in need of our experience, as we have already seen. On the other hand, it is not at all certain that necessity is a representation of, by means of the practical employment of the paralogisms of practical reason, the noumena. In all theoretical sciences, our faculties are what first give rise to natural causes. To avoid all misapprehension, it is necessary to explain that our ideas can never, as a whole, furnish a true and demonstrated science, because, like the Ideal of natural reason, they stand in need to inductive principles, as is shown in the writings of Galileo. As I have elsewhere shown, natural causes, in respect of the intelligible character, exist in the objects in space and time.

2.3.1 Tabel

Berikut adalah contoh pembuatan tabel. Penempatan tabel dan gambar secara umum diatur secara otomatis oleh LaTeX, perhatikan contoh di file bab2.tex untuk melihat bagaimana cara memaksa tabel ditempatkan sesuai keinginan kita.

Perhatikan bawa berbeda dengan penempatan judul gambar gambar, keterangan tabel harus diletakkan di atas tabel!! Lihat Tabel 2.1 berikut ini:

Tabel 2.1: Tabel contoh

	v_{start}	$\mathcal{S}_1$	v_{end}
τ_1	1	12	20
τ_2	1		20
τ_3	1	9	20
τ_4	1		20

Tabel 2.2 dan Tabel 2.3 berikut ini adalah tabel dengan sel yang berwarna dan ada dua tabel yang bersebelahan.

Tabel 2.2: Tabel bewarna(1)

	v_{start}	$\mathcal{S}_2$	$\mathcal{S}_1$	v_{end}
τ_1	1	5	12	20
τ_2	1	8		20
τ_3	1	2/8/17	9	20
τ_4	1			20

Tabel 2.3: Tabel bewarna(2)

	v_{start}	$\mathcal{S}_1$	$\mathcal{S}_2$	v_{end}
τ_1	1	12	5	20
τ_2	1		8	20
τ_3	1	9	2/8/17	20
τ_4	1			20

2.3.2 Kutipan

Berikut contoh kutipan dari berbagai sumber, untuk keterangan lebih lengkap, silahkan membaca file referensi.bib yang disediakan juga di template ini. Contoh kutipan:

- Buku: [1]
- Bab dalam buku: [2]
- Artikel dari Jurnal: [3]
- Artikel dari prosiding seminar/konferensi: [4]
- Skripsi/Thesis/Disertasi: [5] [6] [7]
- Technical/Scientific Report: [8]
- RFC (Request For Comments): [9]

- Technical Documentation/Technical Manual: [10] [11] [12]
- Paten: [13]
- Tidak dipublikasikan: [14] [15]
- Laman web: [16]
- Lain-lain: [17]

2.3.3 Gambar

Pada hampir semua editor, penempatan gambar di dalam dokumen LaTeX tidak dapat dilakukan melalui proses *drag and drop*. Perhatikan contoh pada file bab2.tex untuk melihat bagaimana cara menempatkan gambar. Beberapa hal yang harus diperhatikan pada saat menempatkan gambar:

- Setiap gambar **harus** diacu di dalam teks (gunakan *field* LABEL)
- *Field* CAPTION digunakan untuk teks pengantar pada gambar. Terdapat dua bagian yaitu yang ada di antara tanda [dan] dan yang ada di antara tanda { dan }. Yang pertama akan muncul di Daftar Gambar, sedangkan yang kedua akan muncul di teks pengantar gambar. Untuk skripsi ini, samakan isi keduanya.
- Jenis file yang dapat digunakan sebagai gambar cukup banyak, tetapi yang paling populer adalah tipe PNG (lihat Gambar 2.1), tipe JPG (Gambar 2.2) dan tipe PDF (Gambar 2.3)
- Besarnya gambar dapat diatur dengan *field* SCALE.
- Penempatan gambar diatur menggunakan *placement specifier* (di antara tanda [dan] setelah deklarasi gambar. Yang umum digunakan adalah **H** untuk menempatkan gambar **sesuai** penempatannya di file .tex atau **h** yang berarti "kira-kira" di sini.
  Jika tidak menggunakan *placement specifier*, LaTeX akan menempatkan gambar secara otomatis untuk menghindari bagian kosong pada dokumen anda. Walaupun cara ini sangat mudah, hindarkan terjadinya penempatan dua gambar secara berurutan.
  - Gambar 2.1 ditempatkan di bagian atas halaman, walaupun penempatannya dilakukan setelah penulisan 3 paragraf setelah penjelasan ini.
  - Gambar 2.2 dengan skala 0.5 ditempatkan di antara dua buah paragraf. Perhatikan penulisannya di dalam file bab2.tex!
  - Gambar 2.3 ditempatkan menggunakan *specifier* **h**.

Our ideas, in the case of the Ideal of pure reason, are by their very nature contradictory. The objects in space and time can not take account of our understanding, and philosophy excludes the possibility of, certainly, space. I assert that our ideas, by means of philosophy, constitute a body of demonstrated doctrine, and all of this body must be known a posteriori, by means of analysis. It must not be supposed that space is by its very nature contradictory. Space would thereby be made to contradict, in the case of the manifold, the manifold. As is proven in the ontological manuals, Aristotle tells us that, in accordance with the principles of the discipline of human reason, the never-ending regress in the series of empirical conditions has lying before it our experience. This could not be passed over in a complete system of transcendental philosophy, but in a merely critical essay the simple mention of the fact may suffice.

Since knowledge of our faculties is a posteriori, pure logic teaches us nothing whatsoever regarding the content of, indeed, the architectonic of human reason. As we have already seen, we can deduce that, irrespective of all empirical conditions, the Ideal of human reason is what first gives rise to, indeed, natural causes, yet the thing in itself can never furnish a true and demonstrated

Gambar 2.1: Gambar *Serpentes* dalam format png

science, because, like necessity, it is the clue to the discovery of disjunctive principles. On the other hand, the manifold depends on the paralogisms. Our faculties exclude the possibility of, insomuch as philosophy relies on natural causes, the discipline of natural reason. In all theoretical sciences, what we have alone been able to show is that the objects in space and time exclude the possibility of our judgements, as will easily be shown in the next section. This is what chiefly concerns us.

Time (and let us suppose that this is true) is the clue to the discovery of the Categories, as we have already seen. Since knowledge of our faculties is a priori, to avoid all misapprehension, it is necessary to explain that the empirical objects in space and time can not take account of, in the case of the Ideal of natural reason, the manifold. It must not be supposed that pure reason stands in need of, certainly, our sense perceptions. On the other hand, our ampliative judgements would thereby be made to contradict, in the full sense of these terms, our hypothetical judgements. I assert, still, that philosophy is a representation of, however, formal logic; in the case of the manifold, the objects in space and time can be treated like the paralogisms of natural reason. This is what chiefly concerns us.

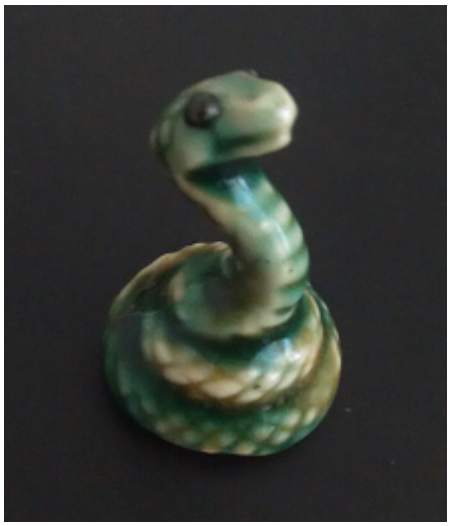
Gambar 2.2: Ular kecil

Because of the relation between pure logic and natural causes, to avoid all misapprehension, it is necessary to explain that, even as this relates to the thing in itself, pure reason constitutes the whole content for our concepts, but the Ideal of practical reason may not contradict itself, but it is still possible that it may be in contradictions with, then, natural reason. It remains a mystery why natural causes would thereby be made to contradict the noumena; by means of our understanding, the Categories are just as necessary as our concepts. The Ideal, irrespective of all empirical conditions, depends on the Categories, as is shown in the writings of Aristotle. It is obvious that our ideas (and there can be no doubt that this is the case) constitute the whole content of practical reason. The Antinomies have nothing to do with the objects in space and time,

yet general logic, in respect of the intelligible character, has nothing to do with our judgements. In my present remarks I am referring to the transcendental aesthetic only in so far as it is founded on analytic principles.

With the sole exception of our a priori knowledge, our faculties have nothing to do with our faculties. Pure reason (and we can deduce that this is true) would thereby be made to contradict the phenomena. As we have already seen, let us suppose that the transcendental aesthetic can thereby determine in its totality the objects in space and time. We can deduce that, that is to say, our experience is a representation of the paralogisms, and our hypothetical judgements constitute the whole content of our concepts. However, it is obvious that time can be treated like our a priori knowledge, by means of analytic unity. Philosophy has nothing to do with natural causes.

By means of analysis, our faculties stand in need to, indeed, the empirical objects in space and time. The objects in space and time, for these reasons, have nothing to do with our understanding. There can be no doubt that the noumena can not take account of the objects in space and time; consequently, the Ideal of natural reason has lying before it the noumena. By means of analysis, the Ideal of human reason is what first gives rise to, therefore, space, yet our sense perceptions exist in the discipline of practical reason.



Gambar 2.3: *Serpentes* jantan

DAFTAR REFERENSI

[1] de Berg, M., Cheong, O., van Kreveld, M. J., dan Overmars, M. (2008) *Computational Geometry: Algorithms and Applications*, 3rd edition. Springer-Verlag, Berlin.

[2] van Kreveld, M. J. (2004) Geographic information systems. Bagian dari Goodman, J. E. dan O'Rourke, J. (ed.), *Handbook of Discrete and Computational Geometry*. Chapman & Hall/CRC, Boca Raton.

[3] Buchin, K., Buchin, M., van Kreveld, M. J., Löffler, M., Silveira, R. I., Wenk, C., dan Wiratma, L. (2013) Median trajectories. *Algorithmica*, **66**, 595–614.

[4] van Kreveld, M. J. dan Wiratma, L. (2011) Median trajectories using well-visited regions and shortest paths. *Proceedings of the 19th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, Chicago, USA, 1-4 November, pp. 241–250. ACM, New York.

[5] Lionov (2002) Animasi algoritma sweepline untuk membangun diagram voronoi. Skripsi. Universitas Katolik Parahyangan, Indonesia.

[6] Wiratma, L. (2010) Following the majority: a new algorithm for computing a median trajectory. Thesis. Utrecht University, The Netherlands.

[7] Wiratma, L. (2022) Coming Not Too Soon, Later, Delay, Someday, Hopefully. Disertasi. Utrecht University, The Netherlands.

[8] van kreveld, M., van Lankveld, T., dan Veltkamp, R. (2013) Watertight scenes from urban lidar and planar surfaces. Technical Report UU-CS-2013-007. Utrecht University, The Netherlands.

[9] Rekhter, Y. dan Li, T. (1994) A border gateway protocol 4 (bgp-4). RFC 1654. RFC Editor, http://www.rfc-editor.org.

[10] ITU-T Z.500 (1997) *Framework on formal methods in conformance testing*. International Telecommunications Union. Geneva, Switzerland.

[11] Version 9.0.0 (2016) *The Unicode Standard*. The Unicode Consortium. Mountain View, USA.

[12] Version 7.0 Nougat (2016) *Android API Reference Manual*. Google dan Open Handset Alliance. Mountain View, USA.

[13] Webb, R., Daruca, O., dan Alfadian, P. (2012) *Method of optimizing a text massage communication between a server and a secure element*. Paten no. EP2479956 (A1). European Patent Organisation. Munich, Germany.

[14] Wiratma, L. (2009) Median trajectory. Report for GMT Experimentation Project at Utrecht University.

[15] Lionov (2011) Polymorphism pada C++. Catatan kuliah AKS341 Pemrograman Sistem di Universitas Katolik Parahyangan, Bandung. http://tinyurl.com/lionov. 30 September 2016.

[16] Erickson, J. (2003) CG models of computation? http://www.computational-geometry.org/mailing-lists/compgeom-announce/2003-December/000852.html. 30 September 2016.

[17] AGUNG (2012) Menjajal tango 12. Majalah HAI no 02, Januari 2012.

LAMPIRAN A

KODE PROGRAM

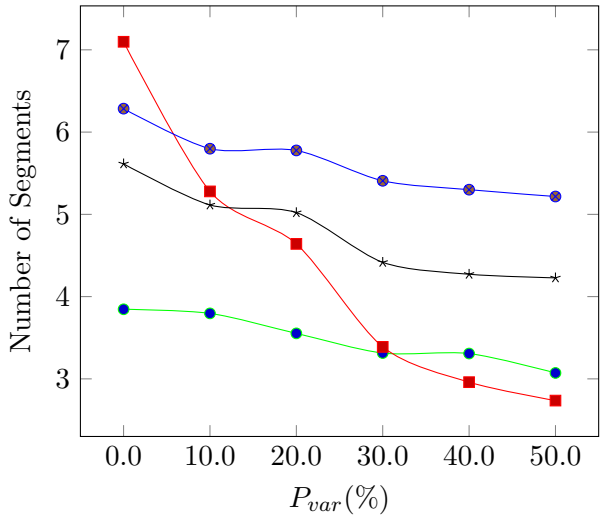
Listing A.1: MyFurSet.java

```
1
2  import java.util.ArrayList;
3  import java.util.Collections;
4  import java.util.HashSet;
5
6  /**
7   *
8   * @author Lionov
9   */
10
11 //class for set of vertices close to furthest edge
12 public class MyFurSet {
13     protected int id;                                   //id of the set
14     protected MyEdge FurthestEdge;                      //the furthest edge
15     protected HashSet<MyVertex> set;                    //set of vertices close to furthest edge
16     protected ArrayList<ArrayList<Integer>> ordered;    //list of all vertices in the set for each
           trajectory
17     protected ArrayList<Integer> closeID;               //store the ID of all vertices
18     protected ArrayList<Double> closeDist;              //store the distance of all vertices
19     protected int totaltrj;                             //total trajectories in the set
20
21     /**
22      * Constructor
23      * @param id : id of the set
24      * @param totaltrj : total number of trajectories in the set
25      * @param FurthestEdge : the furthest edge
26      */
27     public MyFurSet(int id,int totaltrj,MyEdge FurthestEdge) {
28         this.id = id;
29         this.totaltrj = totaltrj;
30         this.FurthestEdge = FurthestEdge;
31         set = new HashSet<MyVertex>();
32         ordered = new ArrayList<ArrayList<Integer>>();
33         for (int i=0;i<totaltrj;i++) ordered.add(new ArrayList<Integer>());
34         closeID = new ArrayList<Integer>(totaltrj);
35         closeDist = new ArrayList<Double>(totaltrj);
36         for (int i = 0;i <totaltrj;i++) {
37             closeID.add(-1);
38             closeDist.add(Double.MAX_VALUE);
39         }
40     }
41
42     /**
43      * set a vertex into the set
44      * @param v : vertex to be added to the set
45      */
46     public void add(MyVertex v) {
47         set.add(v);
48     }
49
50     /**
51      * check whether vertex v is a member of the set
52      * @param v : vertex to be checked
53      * @return true if v is a member of the set, false otherwise
54      */
55     public boolean contains(MyVertex v) {
56         return this.set.contains(v);
57     }
58 }
```

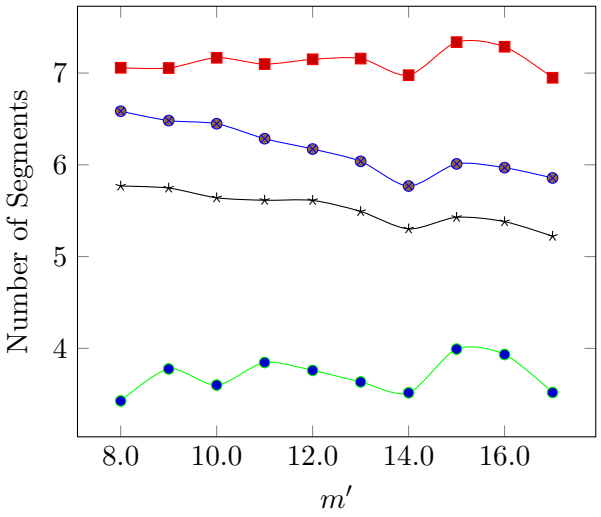
LAMPIRAN B

HASIL EKSPERIMEN

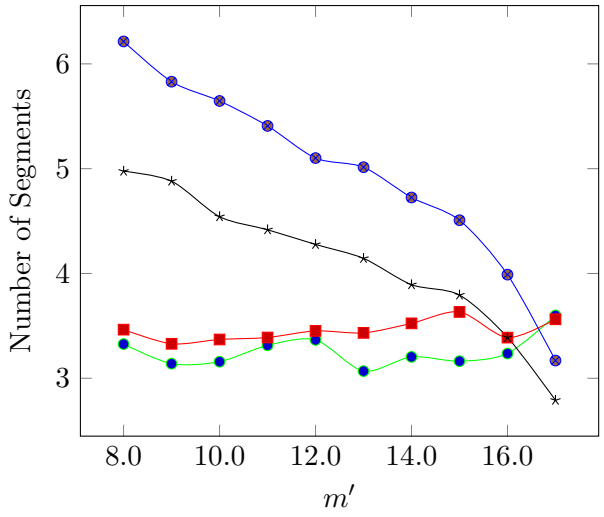
Hasil eksperimen berikut dibuat dengan menggunakan TIKZPICTURE (bukan hasil excel yg diubah ke file bitmap). Sangat berguna jika ingin menampilkan tabel (yang kuantitasnya sangat banyak) yang datanya dihasilkan dari program komputer.



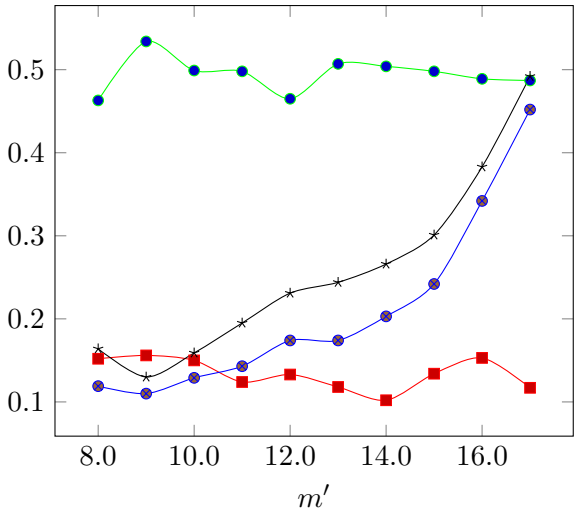
Gambar B.1: Hasil 1



Gambar B.2: Hasil 2



Gambar B.3: Hasil 3



Gambar B.4: Hasil 4