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JUDUL: INTEGRATED KL LRT SYSTEM: DYNAMIC ROUTE MAP (REDESIGN FOR PDA)

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Integrated KL LRT system : dynamic route map (redesign for PDA) / Ashabul Yamin Mustakim.

INTEGRATED KL LRT SYSTEM: DYNAMIC ROUTE MAP (REDESIGN FOR PDA)

ASHABUL YAMIN BIN MUSTAKIM

This report is submitted in partial fulfillment of the requirements for the Bachelor of Computer Science (Software Development)

FACULTY OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
KOLEJ UNIVERSITI TEKNIKAL KEBANGSAAN MALAYSIA
2006

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DECLARATION

I hereby declare that this project report entitled

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is written by me and is my own effort and that no part has been plagiarized without citations.

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DEDICATION

To My Family, Teachers and Friend

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First and foremost, I would like to express my grateful to Allah to give me the way, spirit, patience and guidance that actually increase my inner strength and self esteem to deal with all pressures and difficulties to prepare and develop this entire project.

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ABSTRACT

This project is being developed by taking and advantage of the leak of information system regarding traveling via Light Rail Transit in Kuala Lumpur. The focus of this project is only for two LRT providers which are Rapid KL and KL Monorail. Rapid KL operates two LRT systems which are Kelana Jaya Line (formerly known as PUTRA Line) and Ampang Line and Sri Petaling Line (formerly known as STAR Line). These two LRTs cover various places in Kuala Lumpur. There are two main outputs that being considered in this project. First is dynamic route map and the second is redesign for PDA. Dynamic route map is a map that generated by the data that trigger by the user. It will illustrate the map for LRT route from departure station to arrival station. Redesign for PDA is consists on the human computer interaction (HCI) designing concept. The challenge that should be overcome is on how to design the web site according to the resolution of the PDA.

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ABSTRAK

Projek ini dibangunkan dengan faedah daripada ketiadaan sistem penyediaan maklumat mengenai perjalanan melalui Transit Aliran Ringan di dalam Kuala Lumpur. Fokus projek ini adalah hanya untuk dua pembekal LRT iaitu Rapid KL dan KL Monorel. Rapid KL adalah pengendali kepada dua sistem LRT iaitu Kelana Jaya Line (dahulunya dikenali sebagai PUTRA Line) dan Ampang Line dan Sri Petaling Line (dahulunya dikenali sebagai STAR Line). Kedua-dua penyedia LRT ini mempunyai jaringan rangkaian bagi seluruh kawasan utama di Kula Lumpur. Terdapat dua perkara utama yg dipertimbangkan dalam projek ini. Pertama adalah peta laluan dinamik dan yang kedua adalah rekabentuk semula untuk PDA. Peta laluan dinamik adalah satu peta yang dihasilkan data yg di masukkan oleh pengguna. Ia akan menggambarkan peta untuk perjalanan LRT daripada stesen bertolak untuk stesen ketibaan. Rekabentuk semula untuk PDA adalah mereka konsep berdasarkan komputer insani interaksi (HCI). Cabaran utama adalah bagaimana untuk mereka laman web mengikut resolusi PDA.

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CHAPTER 1

INTRODUCTION

1.1 Project Background

Light Rail Transit system is one of the main transport that being used in Kuala Lumpur. Travel using LRT is said that the most convenient public transport in Kuala Lumpur. There is no doubt because the LRT systems build along the main attraction and hot spot for people to get over.

In Kuala Lumpur there are only two LRT providers which are Rapid KL and KL Monorail. Rapid KL operates two LRT systems which are Kelana Jaya Line (formerly known as PUTRA Line) and Ampang Line and Sri Petaling Line (formerly known as STAR Line). These three LRTs cover various places in Kuala Lumpur.

By this point, used of information technology to deliver the information on guiding the traveler on using LRT system becomes more crucial. There are few web sites that offers the information about LRT system, but there is still none of them are compatible with mobile technology. The native style which are the big screen and resolution sometime make the information are rather to said on the desk only. Of course mobility is the main concern when involved in traveling issues.

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Personal digital assistants (PDAs) are small handheld computers, also known as palmtops, handheld PCs, or handhelds. PDAs are becoming increasingly popular, not solely for business and personal use but also for use in gathering information through the capability of the technology of the internet. By this idea of benefit of PDA, this project is developed on how to deliver information that provides the information of LRT system in Kuala Lumpur through PDA. Which mean the accessibility of the information can be retrieve at anywhere anytime.

Taking the advantage of the PDA, the current web site will be redesign again to give a new touch where traveler can browse via PDA. More then that, new feature that is dynamic route map will be added as for enhancement from current system.

1.2 Problem Statements

Increasing price of oil make public transport becomes more popular. People all around Malaysia take initiative to shift from convenience private transport to hectic of crowded of public transportation atmosphere. Kuala Lumpur was never missing this situation. More then that, this largest city of Malaysia need more sufficient public transportation. Then come one of the new style of public transportation which is LRT System. Until now, Kuala Lumpur has two service providers of these LRT systems which are Rapid KL and KL Monorail. Rapid KL operates two LRT systems which are Kelana Jaya Line (formerly known as PUTRA Line) and Ampang Line and Sri Petaling Line (formerly known as STAR Line).

However this new high technology of machine was only relying on its name. It is because, lack of information and delivering methods on how to travel by using it makes LRT passenger confuse on how to travel from one destiny to others. To make it clear, below are the list of root problems on information system regarding on how to travel using LRT system:

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- Design of the web site is only for screen resolution 1024x768 pixels.
  Current web site was only best viewing at screen resolution of 1024x768 pixels. This means that only desktop computer and laptop computer is the appropriate machine to view this information. Due to this problem, this will be narrowing the user of the web site. Mobility concept that widely practice by the traveler is not be practicing. This will make the information that try to deliver are not come to the expected user.
- Only static map provide by the web site.
  All of the current system only provide static map. In this case static map is defined as a map that only shows overall route and station. This map is not generated specifically by the user needs. Traveler need to understand the map and assume which station that is departure station and which station that is arrival station.
- Insufficient and unattractive of the presentation design of the web site.

There is only one web site that integrates all the LRT system, but there are a lot of problems on presenting the information. Most of the problems are that, the design of the web site is not professional and intended user difficult to capture which information that they really need.

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1.3 Objective

Objectives of this project are:

- To ease traveler on using LRT in daily life.
  By providing complete information on traveling via LRT, system will help the traveler to plan their journey with confident. It is because the traveler can interact with the system in order to get the information.
- To produce dynamic route map that specify by traveler.
  Dynamic route map is one of the most important features in this system. The traveler is not just read the information but they can visualize the route that will be taken via LRT from departure station to arrival station in one map.
- To redesign for PDA
  Common user can browse the web through PDA internet browser. The layout design will be restructured again so it can be best view on 320x240 pixels. It is because the default screen of PDA is 320 x 240 pixels in the portrait mode.

1.4 Scopes

The scope will be divided into three categories which is user, system and admin

Scope for user:

- This system builds for travelers that used LRT system which can be group into three categories which are tourist, local (citizen that stayed at Kuala Lumpur) or outsider (citizen that stayed outside of Kuala Lumpur).

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- This system is build for public purposes and not on behalf to any respective company or organization.
- Normal user can navigate to get information on route journey and information about it and also tips on traveling via KL LRT system.
- The design for common user will be in screen resolution of 320x240 pixels that suite with PDA resolution.
- Develop with best view in Pocket PC Internet Explorer that runs in Microsoft Windows Mobile 5.0 operating system.

Scope for system:

- This system only covers for Kelana Jaya Line (formerly known as PUTRA Line), Ampang Line and Sri Petaling Line (formerly known as STAR Line) and KL Monorail.
- The map that will be produce only illustration of route from departure station to arrival station and the scale of the map is not being considered.
- Estimation only made from normal schedule and not include with uncertain/ad-hoc event.

Scope for admin

- Administrator can update the information in term of place of interest and not station and specify nearest station of the place of interest.
- The design for administrator will be in screen resolution of 1024x768 pixels that suite with PC resolution.

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1.5 Project Significance

RAPID KL provides services across 49 LRT stations and KL Monorail cover for 11 stations. The totals of station are 60 stations. Just imagine if a new tourist that first time using this public transport. Of course they need a clear and helpful information system regarding on travel via LRT.

Rapid KL claims that 2.1 millions of their customer travel using Ampang Line and Sri Petaling Line (both formerly known as STAR line) and Kelana Jaya Line (formerly known as PUTRA line) per week. These huge numbers of people of course a strong reason on how important to develop this system.

Interactivity way that used in this system will help to ease the user on searching information in order to plan their journey. This feature will also help them to get exact information without consuming a lot of time. They can zoom in the information that they want and can totally retrieve the data that relevant on their purposes. This feature was not provided yet in any system that provides information on using LRT.

One of the differences between this systems compared to others are about producing dynamic route map. The map will dynamically produce according to what the user want. This map will illustrate the route of the LRT that should be taken by the traveler if they want to travel via LRT. This map will guide them from departure station, interchange station (if any) and the arrival station. This map was totally crucial for tourist that if the had communication (language) problem. Not only to tourist but also give great help for disability passenger to travel via LRT.

Redesign for PDA takes more benefit than other web site. The accessibility for the information becomes wider at anywhere on anytime. This will help user at exact location when they need to know where they are.

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1.6 Expected Output

Expected outputs of this project are:

- Dynamic route map
- Web site that best view in PDA screens resolution which is 320x240 pixels.

1.7 Conclusion

Integrated LRT KL System: Dynamic Route Map(Redesign for PDA) is a system that hopefully can solve the problem that occurs in current system. The most challenges in developing this system is on how to cope with the lacking on delivering information regarding travel by using LRT.

Three objectives have been described as a guideline to develop this system. These objectives are for sure can cover all the problem statements that discover in current information. Ten scopes being identified as a border line in developing this system. The next activity is about literature review and project methodology.

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CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

This chapter will describe literature review and project methodology. In literature review, it will describe on LRT system and why it is crucial and how Dynamic Route Map is the best approach. In project methodology, it will describe what methodology will be use, why it be chosen and how it will be implemented in developing this project.

2.2 Fact and Finding

This section will describe fact finding after literature review on this title of project.

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2.2.1 Kuala Lumpur

Kuala Lumpur is a capital city of Malaysia. The capital, Kuala Lumpur, lies midway along the West Coast of Peninsular Malaysia. Kuala Lumpur represents the heartbeat of Malaysia, serving as its cultural, commercial and transportation centre. With a population of over 1.3 million, Kuala Lumpur is by far the largest city in Malaysia. Malays, Chinese and Indians comprise the main races among others in this multicultural backdrop. This ethnic diversity has shaped the city over the years and is clearly seen in the various cultural customs and religious beliefs, as well as languages, cuisines and architecture.

Better known as KL to the locals, the city is a heady mix of history and culture intertwined with mushrooming skyscrapers and office towers. Kuala Lumpur is the best example of a city that has managed to preserve the best of its cultural heritage and combine it with modern conveniences to offer a wholly unique experience to visitors.

2.2.2 Kuala Lumpur and Public Transportation

Public transportation, public transit or mass transit comprises all transport systems in which the passengers do not travel in their own vehicles. While it is generally taken to include rail and bus services, wider definitions would include scheduled airline services, ferries, taxicab services etc. — any system that transports members of the general public. A further restriction that is sometimes applied is that it should take place in shared vehicles, which would exclude taxis that are not shared-ride taxis.(wikipedia.org).

In Kuala Lumpur it is important of efficiency of public transportation system. With the population more then 1.3 millions of people, public transport play very

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important roles. It not just a system that concise term of taking public to certain place but it also helps in decomposition of traffic congestion in Kuala Lumpur.

Since 1970, the authority of KL which is DBKL, give a lot of intention in this matter. Lots of project being done in order to make sure the most convenient public transport are here in KL

2.2.3 Public Transport : Light Transit Rail

The Kelana Jaya Line is one of three lines in Kuala Lumpur's light rail transit (LRT) network. All three are operated by Rangkaian Pengangkutan Integrasi Deras Sdn Bhd (Rapid KL).

The Kelana Jaya Line is the new name for Kuala Lumpur's Putra light rail transit (LRT) system. The line was locally known as Putra LRT or simply Putra (which stood for Projek Usahasama Transit Ringan Automatik Sdn Bhd, the company which developed and operated it).

The system, which is 29 km long, is the third longest fully-automated driverless metro system in the world, after the SkyTrain in Vancouver and the VAL in Lille, France.

The Ampang and Sri Petaling Lines are the new names for Kuala Lumpur's STAR light rail transit (LRT) system. STAR, or Star-LRT, was the acronym for Sistem Transit Aliran Ringan Sdn Bhd, the former concessionaire of the system.Star-LRT was Kuala Lumpur's first LRT system.All three are operated by Rangkaian Pengangkutan Integrasi Deras Sdn Bhd (Rapid KL).

Rapid KL claims that 2.1 millions of their customer travel using Ampang Line and Sri Petaling Line (both formerly known as STAR line) and Kelana Jaya Line (formerly known as PUTRA line) per week.

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