REAL TIME BUS TRACKING SYSTEM

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I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Malaysia Pahang or any other institutions.

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ABSTRAK

ABSTRACT

Rapid Kuantan is a bus brand owned by Prasarana Malaysia Berhad to conduct bus services in Kuantan, Pahang, Malaysia. When travelling in buses, public want to know their exact arrival time because sometimes the bus schedule does not have the reliability in terms of punctuality. One of the main problems is the bus’s user did not know the exact time of the arrival bus. Bus management only provide bus’s timetable for the user. The bus’s user needs to go out earlier to the bus stop to wait for the bus. This is because they did not want to miss the bus that they target at the bus’s timetable. Sometimes, the bus’s user needs to wait for too long for the arrival bus because they did not know the exact time the bus will arrive and when they want to chasing time for the certain reason they will become angry. By wasting a lot of time waiting for the bus, that time actually can do something else beneficially. The main objective is to apply GPS tracking technology into bus transportation system. This is to propose to the bus admin to install the Bus Tracking System application that able to track the actual position of the bus. Next, this application will be sending position data of the bus to database and the data will be display as moving bus icon on the map. Next objective is to provide the exact location of the moving working bus. The exact location will help user to manage their time for not waiting too long for the bus. Real Time Bus Tracking System was developing by using Rapid Application Development (RAD) methodology. It is because this method can make rapid development process. This application will be used by many people in the future. The benefits of this application are it can reduce bus waiting time and help people to set what time they will arrive at destination.
TABLE OF CONTENT

DECLARATION

TITLE PAGE

ACKNOWLEDGEMENTS ii

ABSTRAK iii

ABSTRACT iv

TABLE OF CONTENT v

LIST OF TABLES viii

LIST OF FIGURES ix

LIST OF ABBREVIATIONS x

CHAPTER 1 INTRODUCTION 11

1.1 INTRODUCTION 11

1.2 PROBLEM STATEMENT 11

1.3 OBJECTIVE 12

1.4 SCOPE 12

1.5 THESIS ORGANIZATION 12

CHAPTER 2 LITERATURE REVIEW 13

2.1 INTRODUCTION 13

2.2 STUDIES ON EXISTING SYSTEMS 13

2.2.1 Bus Tracking System by Asia Pacific University (APU) 14

2.2.2 Bus Tracking System by Northern Illinois University (NIU) 16

2.2.3 Bus tracking system by Rice University 18
2.3 COMPARISON ON EXISTING SYSTEM 20
2.4 STUDIES ON TECHNOLOGY INVOLVED 21
  2.4.1 Global Positioning System (GPS) 21
  2.4.2 Hybrid Application 21

CHAPTER 3 METHODOLOGY 23
3.1 INTRODUCTION 23
3.2 RAPID APPLICATION DEVELOPMENT (RAD) 24
  3.2.1 Context Diagram 27
  3.2.2 Use Case Diagram 28
  3.2.3 Dialog Diagram 29
  3.2.4 Software Requirement Specification (SRS) 30
  3.2.5 Software Design Document (SDD) 30
3.3 HARDWARE AND SOFTWARE REQUIREMENT 30
  3.3.1 HARDWARE REQUIREMENT 30
  3.3.2 SOFTWARE REQUIREMENT 31
3.4 GANTT CHART 32
3.5 CONCLUSION 32

CHAPTER 4 RESULT AND DISCUSSION 33
4.1 INTRODUCTION 33
4.2 DESIGN REQUIREMENTS 33
4.3 IMPLEMENTING REQUIREMENTS 37
4.4 TESTING 39
4.5 USER MANUAL 39
4.6 CONCLUSION 39
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 2.1</td>
<td>Comparison of existing system</td>
<td>20</td>
</tr>
<tr>
<td>Table 2.2</td>
<td>Comparison between native app, mobile well app and hybrid app</td>
<td>22</td>
</tr>
<tr>
<td>Table 3.1</td>
<td>Hardware Requirement</td>
<td>30</td>
</tr>
<tr>
<td>Table 3.2</td>
<td>Software Requirement</td>
<td>31</td>
</tr>
</tbody>
</table>
**LIST OF FIGURES**

| Figure 2-1  | Screenshot for APU Road map bus tracking system | 14 |
| Figure 2-2  | Screenshot for APU Satellite imagnary bus tracking system | 14 |
| Figure 2-3  | Screenshot for Route 7 in NIU bus tracking system | 16 |
| Figure 2-4  | Screenshot for Route 11 in NIU bus tracking system | 16 |
| Figure 2-5  | Screenshot for Rice University bus tracking system – Route Inner Loop | 18 |
| Figure 2-6  | Screenshot for Rice University bus tracking system – Route Greater Loop | 18 |
| Figure 3-1  | Rapid Application Development (RAD) Model | 25 |
| Figure 3-2  | Context Diagram for Real Time Bus Tracking System | 27 |
| Figure 3-3  | Use Case Diagram for Real Time Bus Tracking System | 28 |
| Figure 3-4  | Dialog Diagram for Real Time Bus Tracking System | 29 |
| Figure 4-1  | Figure 4-2  Figure 4-3 | 34 |
| Figure 4-4  | Figure 4-5 | 34 |
| Figure 4-6  | Figure 4-7 | 35 |
| Figure 4-8  | Figure 4-9 | 36 |
| Figure 4-10 | Figure 4-11 | 36 |
| Figure 4-12 | Registration page in Android Studio Coding | 37 |
| Figure 4-13 | Data in Firebase Database | 38 |
| Figure 4-14 | Dashboard of Google Map Console | 38 |
# LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>ABBREVIATION</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>API</td>
<td>Application Programming Interface</td>
</tr>
<tr>
<td>APP</td>
<td>Application</td>
</tr>
<tr>
<td>APU</td>
<td>Asia Pacific University</td>
</tr>
<tr>
<td>GPS</td>
<td>Global Positioning System</td>
</tr>
<tr>
<td>IDE</td>
<td>Integrated Development Environment</td>
</tr>
<tr>
<td>NIU</td>
<td>Northern Illinois University</td>
</tr>
<tr>
<td>RAD</td>
<td>Rapid Application Development</td>
</tr>
<tr>
<td>RFID</td>
<td>Radio Frequency Identification</td>
</tr>
<tr>
<td>RTBTS</td>
<td>Real Time Bus Tracking System</td>
</tr>
<tr>
<td>SDD</td>
<td>Software Design Document</td>
</tr>
<tr>
<td>SDLC</td>
<td>Software Development Life Cycle</td>
</tr>
<tr>
<td>SRS</td>
<td>Software Requirement Specification</td>
</tr>
<tr>
<td>Wi-Fi</td>
<td>Wireless Fidelity</td>
</tr>
</tbody>
</table>
CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Rapid Kuantan is a bus services owned by Prasarana Malaysia Berhad to conduct bus services in Kuantan, Pahang, Malaysia. Rapid Kuantan was launched on 1 December 2012.(MyRapid, 2012).

When travelling in buses, public want to know their exact arrival time because sometimes the bus schedule does not have the reliability in terms of punctuality. Thus, the bus arrival information system is a service that aim to provide a friendlier bus service. This project has been proposing to develop a prototype application for public to track the position of the bus by installing the application that been develop through out of this project. This application is able to receive and send GPS data, and bus distance.

1.2 PROBLEM STATEMENT

There is no easy way for travellers to check the location of buses in real time. Bus travellers want to know the bus’s accurate arrival times because they tend to maximize their personal time to wait for the bus. Peoples usually go to the bus stop early to wait for the bus. Although the bus timetable is available for free on the Web, bus operators often do not follow, and another factor have been proved that the schedule provides limited information to the public. The peoples will disappoint when their miss a bus trip before, and the next bus service will cause them late for their arrangement. A long wait at the bus stop can make people angry and will make them unwilling to take the bus for the next day. In the end, they decide to use their own transport to go to other places, which resulted in increased traffic jam.
One of the main problems is the bus’s user did not know the exact time of the arrival bus. Bus management only provide bus’s timetable for the user. The bus’s user needs to go out earlier to the bus stop to wait for the bus. This is because they did not want to miss the bus that they target at the bus’s timetable. Sometimes, the user needs to wait for too long for the arrival bus because they did not know the exact time the bus will arrive and when they want to chasing time for the certain reason, they will become angry. By wasting a lot of time waiting for the bus, that time actually can do something else beneficially.

1.3 OBJECTIVE

The aim of this project is to develop an application what able to track the location of the bus by using GPS technology. In order to achieve this aim, the following objectives are listed:

i. To study how GPS can connect with application

ii. To design and implement the real time application that can track bus location.

iii. To test the proposed application in term of functionality.

1.4 SCOPE

The scope of this project is limited on bus trip number 100. GPS will be use as main technology in this project. The position of the bus is based on real time database.

1.5 THESIS ORGANIZATION

This thesis consists of five (5) chapters. Chapter 1 shall discuss about the introduction of the project. Chapter 2 would be Literature Review that discuss about the comparison with the other project that already exist and the compared technology used. Following by Chapter 3, Methodology shall discuss about methodology of the project. Chapter 4 will discuss about the implementation on develop this project. Also, testing will be performed in this chapter too. For the last Chapter is Conclusion for this project that will provides the summary of the report for this project.
CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

There are many bus transportation services in every country, but many of them are lack of management system. In these days, majority of bus services are not performing the real time bus tracking system. This is because they only provide scheduled timetable to follow which are not accurate in real time. By having the GPS tracking system, it will describe the location of the current bus.

However, some countries have already succeeded in implemented the real time bus tracking system. There are many universities in oversea country that already implemented the bus tracking system for their shuttle bus service.

2.2 STUDIES ON EXISTING SYSTEMS

There are many existing bus tracking systems implemented by other universities. The university that already implemented this bus tracking system are Rice University, Northern Illinois University (NIU) and Asia Pacific University (APU) (LOONG, 2013).
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