



UNIVERSITI TEKNIKAL MALAYSIA MELAKA

**AN AUTOMATED BUS ARRIVAL INFORMATION
SYSTEM FOR TERMINAL BUS MANAGEMENT**

This report is submitted in accordance with the requirement of the Universiti Teknikal Malaysia Melaka (UTeM) for the Bachelor of Electronics Engineering Technology (Industrial Electronics) with Honours.

By

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APPROVAL

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ABSTRAK

Dalam era teknologi ini, sistem maklumat adalah sangat penting bagi memudahkan urusan khususnya untuk para penumpang yang sering menggunakan pengangkutan awam di terminal stesen bas. Hal ini kerana, dengan sistem manual yang sedia ada sangat menyukarkan pengguna bas untuk memeriksa jadual ketibaan bas. Sistem ini dibangunkan adalah untuk meningkatkan kecekapan penyebaran maklumat berkaitan dengan sistem pengurusan terminal bas. Lazimnya, sistem ini diperlukan untuk pengurusan terminal bas yang mempunyai saiz yang agak besar. Sehubungan itu, terdapat satu sistem yang akan boleh mengesan kedudukan semasa bas seperti ketibaan dan perlepasan bas di terminal dan memaklumkan kepada penumpang melalui papan paparan di terminal itu. Justeru itu, terdapat modul jam masa sebenar dan memaparkan ia bersama maklumat terkini bas tersebut. Seperti yang dirancang, projek ini menggunakan perisian pelayan PHP MySQL untuk memaparkan maklumat tersebut.

ABSTRACT

In this era of technology, information systems are very important to facilitate deals especially for passengers who often use public transport at bus station terminals. This is because, with the existing manual system it is very difficult for bus users to check the bus arrival schedule. The system was developed to improve the efficiency of the dissemination of information related to the bus terminal management system. Typically, this system is required for the management of bus terminals which have a relatively large size. Accordingly, there is a system that will be able to track the bus's current position such as bus arrival and departure at the terminal and inform passengers through the display board at the terminal. Hence, there has Real Time Clock module and display it with the latest bus information. As planned, this project uses PHP MySQL server software to display the information.

DEDICATION

Special dedication to my farther Nor Azmee bin Yusof and mother Siti Maihani bt Hj. Pungut also my sibling who are very concern, understanding, patient and supporting. This project and success will never achieve without all of you.

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LIST OF SYMBOLS

°	-	Degree
V	-	Volt
MHz	-	Mega Hertz
KB	-	Kilo Byte
m	-	Meter

LIST OF ABBREVIATIONS

GUI	Graphic User Interface
LCD	Liquid Crystal Display
RFID	Radio Frequency Identification
WSN	Wireless Sensor Network
IOT	Internet of Things
CCTV	Closed Circuit Television
GPS	Global Positioning System
DOD	Department of Defence
GPIO	General Resolve Input –Output
IR	Infrared
TV	Television
PM	Permanent Magnet
MOS	Metal Oxide Semiconductor
VCC	Higher Voltage
GND	Ground
CPU	Central Processing Unit
RAM	Random Access Memory
ROM	Read Only Memory
I/O	InputOutput
CMOS	Complementary Metal Oxide Semiconductor
CISC	Complex Instruction Set Computer

RISC	Reduced Instruction Set Computer
IDE	Integrated Development Environment
ICSP	In Circuit Serial Programming
AC	Alternating Current
DC	Direct Current
USB	Universal Serial Bus
IC	Integrated Circuit
CCD	Load Coupled Device
P0	Platform 0
P1	Platform 1
P2	Platform 2
P3	Platform 3

CHAPTER 1

INTRODUCTION

1.1 Introduction

Public transport is most important to passenger and part of their live. Normally, people reach from homes to workplace or university using public transportation. People will can lose their time in transportation because of undesirable waiting without any information of buses. People also have the right to know where the bus is now and what time that bus will departure. So, this project is service the monitoring of bus schedule information.

1.2 Background

Public transport is common passenger transportation service which is available for use by the common public. Open travel must grow administration zone, increment administration level and increment effectiveness to serve these strains. To resolves of this project are to review and improve the information monitoring system in public transit which aiming in improve the system of bus information. This system will improve to display the bus arrival time. For the some deliberation, graphical user interface as alternative technology to improve time monitoring is crucial to integrate this technology at the bus information system. In additional, bus arrival time monitoring system will afford better services in the view of provided that valuables information to the passenger.

1.3 Problem Statement

Currently, people will utilize the open transport to go work environment, college or back to town. Usually, public transport used during time holiday session and festival session also weekend days. Public transport is currently very busy and this time there is also some problem that the public transport company will make some fault on their bus schedule trip destination. Generally, there is the problem that faced by passengers such information management system is conveying the status about the bus landing in the terminal which are vast and pack. Besides that, no information regarding bus locations and presence of real time buses on the platform will tough the passenger to plan their trip.

1.4 Objective of the study

The project's main purpose is to solve the problem in terminal bus for passengers and public transportation companies. The aim of this study in particular is:

- i. Development of time clock for monitor the schedule information
- ii. Development of database management system and information display

1.5 Scope and limitation

The scope and limitation is to solve that confront for passenger and public transport company in terminal bus. The arrival time monitoring will show the information about terminal management system after bus was arrive on platform. The development of this project will focus in the graphical user interface display the real time clock and control the stepper motor using sensor and controller.

1.6 Expected Result

Toward the finish of this undertaking, An Automated Bus Arrival Information System for Terminal Bus Management by implement of microcontroller and PHP MySQL will be a would help the passengers to monitor the schedule of bus arrival on screen. Besides that, this project can reduce time to passenger that waiting for a longer bus at terminal station. So, hardware part can be implemented to control the rotating of stepper motor using sensor and then data will collect by use software implementation. The Graphical User Interface (GUI) of this project are shown.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In this section, some analysis towards the previous project that and will interact between the bus and the server database. Referred to previous project, working of the system should be discussed and determine. This research and review will helps and also guide in understanding of project development and create a new idea to implement towards the current project.

2.2 Background of Transport System

Between the years 1985-2005, the open transport framework in Malaysia is extremely poor and the private transport developed that about 24% expansion was seen in private transport use (Noresah Mohd Shariff, 2012). There is less thought in Malaysia for the worries of walkers, bike clients and transport clients. The government provides the public transport system that is available such trains cabs and busses. The open transportation office is present day however needs benefits quality. Indeed, even in the capital city Kuala Lumpur, the transports arrive late. One of the investigations on displaying of transport conduct in Kuala Lumpur recommends the need of proficient open transport framework to draw in vehicle proprietors (Nurdden et al., 2007) nothing unique isn't the situation with trains (Salem, 2011).The rail public transport system introduced in the 1980s was unable to decrease private vehicles. Malaysia has a low rate of utilization

of open transport among most Asian nations. In the present situation, the expansion in vehicle possession has made the street arrangement deficient.

Building streets to fulfill the need isn't simple particularly in Kuala Lumpur (Morikawa et al, 2001). Next to the elements like travel time and travel cost, structure home to open transport and separation from home to work are the contributing elements that impact the modal move from vehicle to open transport in Malaysia (Nurdden et al, 2007).

Even though the system already developed in the past many years by using other methods. But the application in develop or improve the system towards the requirement of the passengers needed. Providing a bus arrival monitoring information system in a company would help to minimize a problem that related to the cost. This system also improves productivity, efficiency and could reduce the time waiting of bus. Even though this system is familiar in tracking filed, design and implement a new system is required for a better improvement.

Research from previous development of Bus Arrival Information System shows different type and method in implement a new product in the market. Literature review will cover on research about Bus Arrival Information System in implement an update system in required data information.