

**UTEM BUS TRANSPORTATION APPLICATION MANAGEMENT  
SYSTEM**



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# UTEM BUS TRANSPORTATION APPLICATION MANAGEMENT SYSTEM

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This report is submitted in partial fulfillment of the requirements for the Bachelor of [Computer Science (Database Management)] with Honours.

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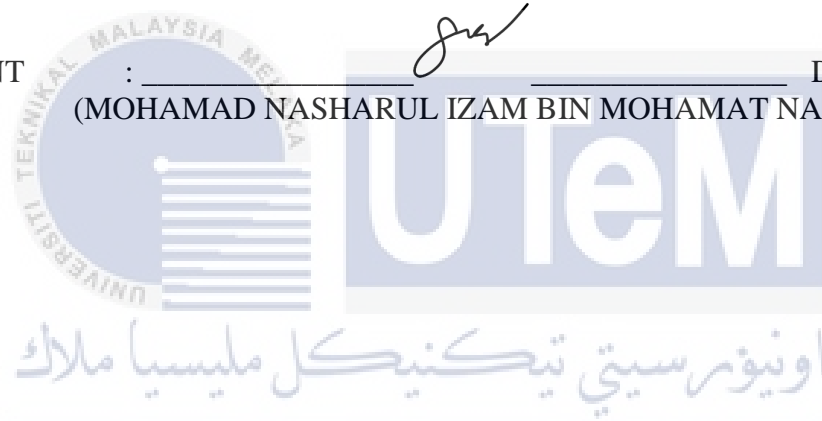
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2021

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I hereby declare that this project report entitled  
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## DEDICATION

This work is dedicated to my beloved parents who guide me on this journey and made education a priority for my siblings and me. Their hard work will forever be appreciated.



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## ABSTRACT

UTeM provide daily services of bus transportation for all student and staff. To make the flow of the bus management more efficient, an application system is needed to provide information, function, and feature to users. UTeM Application Management System is a database transportation system integrate between web and mobile application, develop to manage UTeM bus transportation. It is specific for student, bus driver and UTeM bus authority to deliver well-functional of daily bus transportation activities. This includes management of bus route, driver, schedule, capacity, navigation, tracking and many more. Regarding the situation of Covid-19, this system determines to integrate safety feature to the application such as capacity management and QR scanner. This project carried out to develop mobile and web application management system of UTeM's bus authority to manage the transportation data. Besides, working as a tool to enhance bus transportation services and safety. It is also increasing students' engagement to use bus services.

## ABSTRAK

UTeM menyediakan perkhidmatan pengangkutan bas setiap hari untuk semua pelajar dan kakitangan. Untuk membuat aliran pengurusan bas lebih efisien, sistem aplikasi diperlukan untuk memberikan informasi, fungsi, dan fitur kepada pengguna. Sistem Pengurusan Aplikasi UTeM adalah sistem pengangkutan pangkalan data yang terintegrasi antara aplikasi web dan mudah alih, dikembangkan untuk menguruskan pengangkutan bas UTeM. Khusus untuk pelajar, pemandu bas dan pihak berkuasa bas UTeM untuk menyampaikan aktiviti pengangkutan bas harian yang berfungsi dengan baik. Ini termasuk pengurusan laluan bas, pemandu, jadual, kapasiti, navigasi, penjejakan dan banyak lagi. Mengenai situasi Covid-19, sistem ini menentukan untuk menggabungkan ciri keselamatan ke aplikasi seperti pengurusan kapasiti dan pengimbas QR. Projek ini dijalankan untuk mengembangkan sistem pengurusan aplikasi mudah alih dan web dari pihak berkuasa bas UTeM untuk menguruskan data pengangkutan. Selain itu, berfungsi sebagai alat untuk meningkatkan perkhidmatan dan keselamatan pengangkutan bas. Ini juga meningkatkan penglibatan pelajar untuk menggunakan perkhidmatan bas.



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## LIST OF ABBREVIATIONS

<b>FYP</b>	-	<b>Final Year Project</b>
<b>UTeM</b>	-	<b>University Teknikal Malaysia Melaka</b>
<b>UPM</b>	-	<b>University Putra Malaysia</b>
<b>PPKU</b>	-	<b>Pejabat Pengurusan Kenderaan UTeM</b>
<b>SDLC</b>	-	<b>System Development Life Cycle</b>
<b>DBMS</b>	-	<b>Database Management System</b>
<b>SQL</b>	-	<b>Structured Query Language</b>
<b>SDK</b>	-	<b>Software Development Kit</b>
<b>QR</b>	-	<b>Quick Response</b>
<b>DFD</b>	-	<b>Data Flow Diagram</b>
<b>ERD</b>	-	<b>Entity Relationship Diagram</b>
<b>GUI</b>	-	<b>Graphical User Interface</b>

**LIST OF ATTACHMENTS**

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**Appendix A**

**Appendix B**



## CHAPTER 1: INTRODUCTION

### 1.1 Introduction

In modern technologies era, many local universities in Malaysia have begin adapting the modern ways of delivering transportation services where technology is engaged, thus, suits today's generation's way of using transports. For example, computers and mobile devices are being used as additional tools in university as daily transportation information such as bus schedules and tracking services; not to mention with the gaining attention of young generations on using popular transportation applications like Grab and Uber. University Teknikal Malaysia Melaka (UTeM) bus authority known as *Pejabat Pengurusan Kenderaan Univerisiti* (PPKU) has provides excellent transportation services to UTeM's employees and stduents. But even with the excellence services, the flow and procedure of creating, handling, and delivering the bus schedules to drivers and students islacking efficiency. Moreover, student also often misses the bus due to tracking unavailability. To improvise the flow of the transportation management becoming more efficient than present condition, a well-functionality application system is needed.

## 1.2 Problem Statement

The UTeM bus transportation is important to pick up passenger such as students and send them to the destination on time but sometimes students often missed or waited longer for the bus due to lack of information of real-time bus schedule, bus tracking and arrival time. This has caused the students to arrive late at the faculty and the classroom. Normally, the bus schedule will be patch at each of the bus stops. But sometimes the schedule is lost or damaged due to weather condition. Besides, in meeting with Mr. Azari from PPKU, he stated that the management of drivers, buses, and schedules at *Pejabat Pengurusan Kenderaan Univerisiti* (PPKU) is lacking a computerized application system. PPKU is still using the Microsoft Excel application to create bus schedules for the students and the drivers. Furthermore, the process to hand out the schedule to each driver and patch at each of bus stop required manpower and a lot of time.

Currently, the bus driver also does not have the functionalities to retrieve latest bus schedule, maintain arrival time, route navigation and bus capacity management. This has also caused the PPKU to not have a full control on the bus activities. Regarding the situation of Covid-19, there are no system to ensure the safety of the bus procedure. The current procedure does not capture and store passenger information to the system; resulting unreliable information if there are any cases spotted.

### 1.3 Objectives

This project embarks on the following objectives:

- i. To help improve the current bus, driver, and schedule management in PPKU system.
- ii. To develop a mobile application for students and passengers to alert on the bus schedule and real-time bus tracking.
- iii. To provide functionalities for bus driver to maintain the bus arrival time status, route navigation and capacity management in the mobile application.

### 1.4 Scope

Target User

i. UTeM's Student

ii. UTeM's Bus Driver

iii. PPKU Staff

Modules

i. Student Module

Manage all students functionalities in the system.

ii. Bus Driver Module

Manage all bus drivers functionalities in the system.

