UNIVERSITI TEKNIKAL MALAYSIA MELAKA

IOT BASED FOOD ORDERING SYSTEM

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

by

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TECHNOLOGY

2019

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

BORANG PENGESAHAN STATUS LAPORAN PROJEK SARJANA MUDA

Tajuk: Iot based food ordering system

Sesi Pengajian: 2019

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I hereby, declared this report entitled Iot based food ordering system is the results of
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Signature: ……………………………………

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Date:

APPROVAL

This report is submitted to the Faculty of Electrical and Electronic Engineering Technology of Universiti Teknikal Malaysia Melaka (UTeM) a partial fulfilment of the requirements for the degree of Bachelor of Computer Engineering (Computer System) with Honours. The member of the supervisory is as follow:

Signature: …………………………………………….
Supervisor: Ts. Effendy Onn Bin Siam

Signature: …………………………………………….
Co-supervisor: Ts. Nadzrie Bin Mohamood

ABSTRAK

Para pelajar dan staff Universiti Teknikal Malaysia Melaka (UTeM) dipilih sebagai kajian kes untuk penyelidikan ini kerana beberapa keadaan untuk mendapatkan makanan mereka. Salah satu masalah yang dihadapi oleh para pelajar ialah kafeteria di kampus sentiasa penuh pada waktu puncak. Ramai pelajar dan kadang-kadang kakitangan, mesti tergesa-gesa dan memilih makanan mereka yang mereka mahu makan semasa makan tengah hari kerana masa untuk berehat hanya satu jam sahaja. Satu jam tidak cukup kerana mereka mahu makan dan pergi juga kepada doa. Oleh itu, pesanan makanan dalam talian direka untuk lebih fleksibel dan prestasi. Sistem ini dapat mengatasi masalah yang dihadapi oleh pelajar dan kakitangan. Pada asasnya, projek sistem pesanan makanan dalam talian ini, menggambarkan bagaimana untuk mengawasi prestasi yang baik dan perkhidmatan yang lebih baik untuk pengguna Universiti. Walau bagaimanapun, semua aplikasi tempahan makanan dalam talian yang sedia ada perlu menghadapi masalah, kerana terdapat kebaikan dan keburukan apabila menggunakan aplikasi pesanan dalam talian. Dalam makalah ini, beberapa aplikasi yang sedia ada akan menganalisis dengan kelebihan dan kekurangan setiap aplikasi sistem sedia ada. Akhir sekali, untuk menyelesaikan masalah yang dihadapi oleh semua pelajar dan kakitangan, aplikasi sistem tempahan makanan dalam talian baru akan direka. Ini adalah aplikasi yang selamat dan berkekalan untuk pelajar kerana mereka dikehendaki mendaftarkan permohonan menggunakan nombor pengenalan pelajar mereka sendiri.

ABSTRACT

The students and staffs of Universiti Teknikal Malaysia Melaka (UTeM) is chosen as a case study for this research due to several circumstances to get their meals. One of the problems faced by the students is that the cafeteria in the campus is always full during peak hour. Many students and sometimes staff, must hurry and choose their meals that they want to eat during lunch as the time for rest is only one hours. One hour is not enough as they want to eat and go to prayer as well. For students, after one-hour break, they need to go to class or lab session, meanwhile, for lecturers they need to continue teaching. Therefore, ordering food online is designed for its more flexibility and performance. This system can overcome the problem faced by the students and staff. Basically, this online food ordering system project, illustrate how to supervise for good performance and better services for the University users. However, all current existing online food ordering applications need to face the problems, as there is pros and cons when using the online ordering applications. In this paper, some existing applications will be analysing with the advantages and disadvantages of each existing system applications. Lastly, to solve the problems faced by all the students and staff, a new online food ordering system application will be designed. This is a secure and timesaving application for students as they are required to register to the application using their own student identification number.

DEDICATION

Special dedication to my beloved father and mother,

Harman Bin Mohd Bardzan

Halijah Binti Daud

My supportive siblings,

Haziqah Arisha Binti Harman

Hilmi Bin Abdul Halim

For my supervisor,

MR. EFFENDY ONN BIN SIAM

For giving me moral support and encouragement.

Thank You So Much.

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ACKNOWLEDGEMENTS

Alhamdulillah, in performing this final year project, the most gracious and most merciful to the Allah S.W.T that I can finish my final year project.

A big appreciation and a million thanks to En Effendy Onn Bin Siam my supervisor of this project, that had given so much guidance, encouragement, advice, remarks and cooperation and his time to teach from the beginning until the report was completed and developed. In addition, he had shared many ideas and experiences that helped me a lot for this project.

Besides, appreciation is given to all lecturers, staffs and friends that had been involved directly or indirectly in helping to complete this project in the form of ideas and support from the beginning of the report until it has been successfully finished.

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INTRODUCTION

1.1   Introduction

This chapter will cover about the whole concept about this project that going to develop as mentioned. This chapter is very important to know about the overall of this project. The students and staffs of Universiti Teknikal Malaysia Melaka (UTeM) is chosen as a case study for this research due to several circumstances to get their meals. One of the problems faced by the students is that the cafeteria in the campus is always full during peak hour. Many students and sometimes staff, must hurry and choose their meals that they want to eat during lunch as the time for rest is only one hours. One hour is not enough as they want to eat and go to prayer as well. For students, after one-hour break, they need to go to class or lab session, meanwhile, for lecturers they need to continue teaching. Therefore, ordering food online is designed for its more flexibility and performance. This system can overcome the problem faced by the students and staff. Basically, this online food ordering system project, illustrate how to supervise for good performance and better services for the University users. However, all current existing online food ordering applications need to face the problems, as there is pros and cons when using the online ordering applications. In this paper, some existing applications will be analysing with the advantages and disadvantages of each existing system applications. Lastly, to solve the problems faced, a new online food ordering system application will be designed. This is a secure and timesaving applications for staff and student.

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1.2 Research Background

The current system has to be changed to meet the growing demand for better and faster service. The system is quite difficult. One of the biggest disadvantages of the current system is that the absence of a computerized food ordering system requires it to request the items available every time, to make its choice and then pay. This process is therefore very time-consuming and very old. It's very hard to handle. The entire current system has been traditional and the technology lacks, so it takes a very long and time-consuming process. This also causes a problem that the income is properly tracked on a regular basis. This document outlines all features and procedures for developing the system describing how cafe can develop IOT based automation. The increasing popularity of Internet of Things makes it the ideal tool for dealing with the issue. Most people in the universities also have a smartphone and are always open to technology.

1.3 Problem Statement

In universities, the most well-known phenomenon is that owing to variable timetable and study pressure during the examination process, it could be more difficult for students to decide when and where to have their lunch. Besides, for lecturers and other staff, if they had to attend a meeting, they do not have enough time to going out to search for a restaurant, they must take their lunch or breakfast at the café in faculty. There is just a limit time like one hour in the lunch time that students could not finish their lunch on time.

Other than that, the challenges of the existing system constitute a major drawback to the achievement of customer satisfaction and effectiveness. Customers don't

feel comfortable ordering the experience in most fast-food restaurants. Customers need to queue long before they choose their meals particularly during peak hours and then the customer's meals will be totally refreshed. After the customers have chosen their meals, they must wait and queue close to the counter to pay the cashier. The other problem in UTeM's cafe is that it does not realize how efficient the technology would better use in daily operations. Fast food companies in a competitive business and one way to distinguish themselves from competitors is to improve the process of business where business process automation can help business improvement. Lastly, the current system is sometimes not fair for students and staff. This is because, the price that have been given by the cashier is differently for each person. For instance, two women buy the same food in the same amount, but the cashier sets the price differently. The problem is overcome by the online ordering system in this project, as the quantity and prices have been determined.

1.4 Objectives

The objectives are defined as the goals to be attained at the end of the project. The objectives of the project are:

1. Develop an online food ordering system based on Web-Based applications for students and staff.
2. To improve the food ordering system in café Universiti Teknikal Malaysia Melaka,UTeM.
3. To maintain the efficient and accurate functions of the café and to reduce the use of manual entries.

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1.5 Scope of Research

The scope of this project is based on the above objectives. The database storage system is created by means of the MySQL. After that, a mobile application to make the database work is created via Android Studio, an IDE, an Integrated Development Environment that has a lot of features to help develop the app. The user scale is divided into two vendors (cafe owners) and users (UTeM students and staff). The vendor has the privilege to administer the system and has the privilege of viewing, adding, deleting, updating and editing data. Meanwhile, the user (students and staff) have privilege to view, order and know the amount of money that they need to pay for their meals. The limitation of this project is the system will be developing specifically for UTeM student and staff and only.

1.6 Thesis Organization

This thesis has been divided into five chapters and every chapter deals with different project issues. The following is a summary of the following chapter:

The introduction is Chapter 1. This chapter discusses an overview of the system. Identifies the problem statement, objective and scope.

The literature review is Chapter 2. This chapter deals with all project-related research and literary review.

Chapter 3 is the methodology for discussing the project approach and framework. It explains the method used when the system is designed. There is also a rationale for the software used to develop the system.

The result and discussion of the project will be discussed in chapter 4. Finally, chapter 5 will summarize the entire project that has been done and discuss about the limitation of this project.

1.7   Summary

Chapter 1 consists of the background study, problem statement, objective, scope, thesis organization, and summary of the whole project. The next chapter is a literature review of different sources from the previous study. The process to start the project from the first stage to the end is then covered in Chapter 3. The process begins with the identification of the objective statement and follows other steps. Chapter 4 will discuss the results and discussion of the project. Finally, Chapter 5 will sum up the complete project that has been completed and discuss the constraints of this project.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter focuses on the review of the previous project study. In order to obtain information on the research that has been done, the data collections are used as references. Some review of the current and methods used in the project were carried out by other researchers to start the project. Students have learned and searched a lot about many sources, such as books, journals, articles, internet and application documentation and research work, in order to succeed. The project will be reviewed to obtain a proper plan for how the project can be implemented and certain features can be added to ensure the project is reliable and marketable. Some information was used as an idea for innovation products to be built by the students.

2.2 Current System in UTeM

The manual system is used to buy food for students and employees in the cafeteria UTeM. To get their food for breakfast, lunch and dinner students and staff need to queue a long time. The process with the current system sometimes takes longer, because many people buy their meals during the peak hours. In addition, the order picker still uses the paper-based manual system to arrange for students and staff. Manual ordering is a very long task with the risk of human error. The problem with the order picker is sometimes that the paper is missing and misplaced. This type of ordering system consumes and wastes time or resources when a large number of customers are present. In addition, in the current system

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the menu is updated manually using the menu board. So, what's new is updated every day by the cafe-owners.

The following figure shows the current UTeM cafe ordering system.

Figure 2.1: Students queue to take their food choice

Figure 2.2: Menu Board at campus technology, UTeM