UMS FOOD RECOMMENDATION AND FOOD ORDERING WEB APPLICATION

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FACULTY OF COMPUTING AND INFORMATICS
UNIVERSITI MALAYSIA SABAH

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THESIS SUBMITTED IN PARTIAL FULFILLMENT FOR THE DEGREE OF BACHELOR OF COMPUTER SCIENCE WITH HONOR (NETWORKING ENGINEERING)

FACULTY OF COMPUTING AND INFORMATICS
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DECLARATION

I hereby declare that the material in this thesis is my own except for quotations, equations, summaries, and references, which have been duly acknowledged.

.....

23 April 2021

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ABSTRACT

This is the era where technologies all in fingertips to be used. As the time goes the importance and the state of the technologies also updated or always changing. Moreover, daily activities become more computerized and with the help of technologies, it makes life easier and faster. Nowadays the technology is more needed as the pandemic is on board. COVID-19 is very contagious and dangerous virus where most of the world are suffering with the pandemic. To prevent the virus for spreading more, the government itself introduce new law of movement control to stop the spreading. From this order, many Universities and schools were closed. As the movement control is ordered, the spreading decreases and most of the schools and universities starting to open. However, the virus is destroyed so there will be the virus and may spread among the student as the Universities and schools are places with many people where it will be easy for the virus to spread. To avoid that Universities taking as many safety precautions as possible to avoid the virus spreading among the students and lecturers too. One of the main places that will crowded in a time is canteen where the students or lecturers will be line up to order and pick up the food. Therefore, to avoid the crowd an application for food ordering will be very helpful (Christopher Sanew, 2020). As student just can order the food on their phone in their hostels and when the food they just can go and take their food. This may avoid too many people to be crowded in one place at a time as each order will be in different time so it just can reduce the number of people an avoid crowding. For the canteen owners also will be helpful as they do not have to face with many people in one time as their orders will be organized. Beside they can set the time as late orders will be avoided. Some problems as customer order something and they get something else, ordered food done late and also ordered food finish not in stock will be avoided. The core problem is identified along with solutions and project path. Furthermore, detailed system analysis and design, user interface, methods and the estimated results are presented through our documentation. Certainly, this system will solve and improved the problems mentioned above.

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ABSTRAK

APLIKASI WEB CADANGAN MAKANAN DAN MEMESAN MAKANAN UMS

Ini adalah era di mana teknologi semua di hujung jari untuk digunakan. Apabila masa berlalu, kepentingan dan keadaan teknologi juga dikemas kini atau sentiasa berubah. Selain itu, aktiviti harian menjadi lebih berkomputer dan dengan bantuan teknologi, ia menjadikan kehidupan lebih mudah dan pantas. Pada masa kini teknologi lebih diperlukan kerana wabak itu sedang berlaku. COVID-19 adalah virus yang sangat menular dan berbahaya di mana kebanyakan dunia menderita dengan wabak tersebut. Untuk mengelakkan virus itu terus merebak, kerajaan sendiri memperkenalkan undang-undang kawalan pergerakan baharu untuk menghentikan penularan. Daripada perintah ini, banyak Universiti dan sekolah ditutup. Apabila kawalan pergerakan diperintahkan, penularan berkurangan dan kebanyakan sekolah dan universiti mula dibuka. Walau bagaimanapun, virus itu dimusnahkan supaya virus itu akan tersebar dan mungkin merebak di kalangan pelajar kerana Universiti dan sekolah adalah tempat yang ramai orang di mana virus itu mudah merebak. Untuk mengelak Universiti mengambil seberapa banyak langkah berjaga-jaga yang mungkin untuk mengelakkan virus merebak di kalangan pelajar dan pensyarah juga. Antara tempat utama yang akan sesak dalam satu masa ialah kantin di mana pelajar atau pensyarah akan beratur untuk memesan dan mengambil makanan. Oleh itu, untuk mengelakkan orang ramai, permohonan untuk memesan makanan akan sangat membantu (Christopher Sanew, 2020). Sebagai pelajar hanya boleh memesan makanan di telefon mereka di asrama mereka dan apabila makanan mereka hanya boleh pergi dan mengambil makanan mereka. Ini boleh mengelakkan terlalu ramai orang untuk bersesak di satu tempat pada satu masa kerana setiap pesanan akan dibuat dalam masa yang berbeza jadi ia hanya dapat mengurangkan bilangan orang dan mengelakkan kesesakan. Bagi pemilik kantin juga akan membantu kerana mereka tidak perlu bersemuka dengan ramai orang dalam satu masa kerana pesanan mereka akan diatur. Selain itu, mereka boleh menetapkan masa kerana pesanan lewat akan dielakkan. Beberapa masalah kerana pelanggan memesan sesuatu dan mereka mendapat sesuatu yang lain, memesan makanan yang dibuat lewat dan juga memesan makanan yang tidak ada dalam stok akan dielakkan. Masalah teras dikenal pasti bersama dengan penyelesaian dan laluan projek. Tambahan pula, analisis dan reka bentuk sistem terperinci, antara muka pengguna, kaedah dan anggaran keputusan dibentangkan melalui dokumentasi kami. Sistem ini akan menyelesaikan dan menambah baik masalah yang dinyatakan di atas.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This is the era where technologies all in fingertips to be used. As the time goes the importance and the state of the technologies also updated or always changing. Moreover, daily activities become more computerized and with the help of technologies, it makes life easier and faster.

Nowadays the technology is more needed as the pandemic is on board. COVID-19 is very contagious and dangerous virus where most of the world are suffering with the pandemic. To prevent the virus for spreading more, the government itself introduce new law of movement control to stop the spreading. From this order, many Universities and schools were closed. As the movement control is ordered, the spreading decreases and most of the schools and universities starting to open. However, the virus is destroyed so there will be the virus and may spread among the student as the Universities and schools are places with many people where it will be easy for the virus to spread.

To avoid that Universities taking as many safety precautions as possible to avoid the virus spreading among the students and lecturers too. One of the main places that will crowded in a time is canteen where the students or lecturers will be line up to order and pick up the food. Therefore, to avoid the crowd and web application for food ordering will be very helpful (Sanew C., 2020). As student just can order the food on their phone in their hostels and when the food they just can go and take their food.

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This may avoid too many people to be crowded in one place at a time as each order will be in different time so it just can reduce the number of people an avoid crowding. For the canteen owners also will be helpful as they do not have to face with many people in one time as their orders will be organized. Beside they can set the time as late orders will be avoided. Some problems as customer order something and they get something else, ordered food done late and ordered food finish not in stock will be avoided.

In the other hand, this chapter starts with problem background followed by the problem statements which summarize the problem background in detail. Besides the objective of the project stated, then the project scope followed by the project timeline and organization of the project.

1.2 Problem Background

Ordering food with crowded people in a long line which will help the virus spreading more. Canteen owners dealing with loss as their food are not in sale as the students and lecturers are afraid of disease spreading. Student wasting much time for waiting their turn to order, then waiting for so long to get their order. As many restaurant industries are embracing many new technologies to make daily life easier and faster, the ordering in canteen too ad to be easier and faster as it is dealing with students who are already in many stresses and assignments (Rahman, 2018). Beside it will make the order to be not confused as to many orders can lead to miss an order or more or other order will be done and wasted.

Moreover, in this pandemic situation UMS is facing lockdown, where every cafe has its own pattern to serve food. As for Cafe Tun Mustapha and Tun Fuad, breakfast lunch cannot be chosen by the students, they only can take their already packed food and they do not know what is inside the package and for the dinner the use WhatsApp application to create group and order their food. Meanwhile, for Cafe Kampung E, for the three meal which are breakfast, lunch, and dinner, was served in package and cannot be order. Therefore, the students have the difficulties to choose their food because of the precaution of the UMS cafe. They are forced to eat the same food given so that there no crowding in cafe and avoiding the spread of the virus. As a result of

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solving those problems it is a nice to use a food ordering web application to avoid miss ordering, virus spreading and wasting time of customers who are the students and lecturer.

1.3 Problem Statements

Currently Universiti Malaysia Sabah has three canteens which are attached with three respective hostels as Cafe Tun Mustafa, Cafe Tun Fuad and Cafe Kampung E. there are more canteens there in Universiti Malaysia Sabah but only the three of them are in operating. As the in this COVID-19 pandemic there are only few classes will be face to face and most of it will be online classes. Therefore, only three canteens will be operating for students. For the current situation, the cafe does not have specific ordering system, they just follow the rule of Standard Operating Procedure (SOP), where the students could not choose their food and just take the food which already packed. However, there are some problems in the current system.

1. High risk for the students to gather in place at a time and the student could not choose the food, they want or not they have to eat what food is served which is packed the cafe.

   This problem is very serious as the crowded place is the best place to the virus spread. This may occur as the students line up to order and wait for their food in the same place so there will be many people gathered in one place and the chances to the virus spread is high. Even though, they might keep their distant in between them but canteen is not a big place where eventually they will be in contact. Therefore, the web application proposed can avoid this kind of situation as the students just can order their food in their rooms using the web application. As they will wait for their food done and students will be notified, after that they can go to canteen to pick up and pay for their food. From this situation, using the web application may avoid not only students but lecturers too to be gathered in one place at a time.

2. Data redundancy in ordering food.

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As the order will be taken in one piece of paper where high chances to misplaced and may be wet. Beside it, the order may miss, and the order will change as the customer order different and get different. The unfairness also might be occurred as the first ordered food will be done late as thy miss the order list or misplaced it. The big confusion or loss of orders can overcome with this web application as the order will be organized and will be listed according to the time and date. This may not lose easily as the cook or assistant can easily refer at their order list on their system.

3. Low productivity as many afraid to be out in canteen as the cautious of disease spreading so many students prefer order from other delivery apps from other shops.

   The owner will be in great loss if the situation above occurs as the students or lectures will be afraid to purchase in the canteen as they need to face many people where they might get the disease in the crowd. While the web application where they can order in their rooms itself may attract many people to buy food in the campus canteen as it more reliable after using the web application.

4. Time consuming as the student and lecturers may waste more time in canteen.

   The students and lecturers must wait in a line to order their food and must wait for their food done in the canteen for so long. There is possibility for them to order and go back to their rooms but there such thing to notify them when the food ordered is done. The plug points in canteen are limited and many students will be packed with assignments and classes. They may miss their class and will be wasted time by not doing their assignments just to wait for food in canteen. To counter it this application will be provided with notification when the is done so the students or lecturers can order their food in their room and continue, they're as the application will notify them when they must collect their food. this may save their time to do some assignments and some progressive works.

5. The student could not choose the food, they want or not they have to eat what food is served which is packed the cafe.

   In this lockdown situation which UMS undergoes now, all the cafe in respective

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residential collage only serve food in package which could not choose by the students so the only activity the student needs to do are to take their package and pay to the cafe and straight away go to their rooms to eat their food. They even do not know the menu and they know when the open the package. To counter this problem the ordering application may help the students to choose their food harmlessly at the same time it would also follow the current SOP as the government stated.

1.4 Project Goals

This project is focused on the development of food ordering web application with food suggestion according to the customers or user's preference. The goal of the project is to develop an application that may help people to order their food in online so that less people will come to canteen and less the spread of COVID -19 virus, the time the customer spend in canteen to order also will be reduced as THE application may help students to be order their food contact less and may get many suggestions of food.

1.5 Objectives

To achieve the project goal, there are three objectives have been determined as follows:

i. To design a food ordering web application system with the recommendation of food item based on the calorie count of the food and the calorie preferred by the user.
ii. To develop UMS Food Recommendation and Ordering Web Application and user interface to order food using Html and Php programming language.
iii. To verify the usability of the food ordering web application in terms of adaptivity and user friendly.

1.6 Project Scope

The main users of this application are students, lecturers and other staffs of Universiti Malaysia Sabah and considered as the customers. They can register in the application with their name, phone number, email, and password. The application also will be required some of their preference on the food so that the application will have the

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suggestion list for them to choose. The food suggestions list is already categorized as what the user prefers. Besides, the canteen owner will have the main system where the orders will show for the cooks to make the food. The system will also display the number time and date of order. The system also has buttons for each order to notify the customer by sending automated messages.

In this project, the application system will also consist of machine learning as the food in menu will suggested to the user using Content Based Filtering method for recommendation according to their preference which the user themselves will provide in their account.

Table 1.1 Modules of The Projects

Module	Description	User
Login and logout authentication	An account must register by new users with their general details and other information are needed. The users can log in into the web application system by using their email and password. There will be seller who are the owner of the canteen stall in UMS as they must register, and the admin will approve the registration. The admin verification is important because the seller must be in UMS only. The admin will be registered as user first then will be change to admin by the existing admin.	Buyer Seller Admin
User List	The admin who already login to system can view the user list who are registered to the web application. The admin can delete user that is not approved. The admin can edit the user details as user type from user to admin.	Buyer Seller Admin
Food Menu	The buyer who are log in into the system will have the food menu suggested based on calorie an categorized by the seller name. As the seller updated already the menu of food and	Buyer Seller

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	drinks, it will display in web application for them to choose. Each of the food and drink list will be provided with its prices respectively.	
Food Order	The buyer can choose the food and quantity of the food according to the menu. Then, they may proceed to order the food. The chosen food will move to order page where there the buyer can view the order made with the price and status. The status will be either "pending", "processing", "ready" or "delivered". Where pending means the order not taken yet, processing means the order taken while the food is in preparing, ready is for the is prepared and can be collected and delivered when the food was paid and collected.	
Food Suggestions	The buyer needed to input their preferred calorie and the calorie of food will be inputted by seller. The preference will be based calorie where the seller will set it and the buyer will select during registration. The preferred calorie will be taking count and the web application will suggest list where it will suggest the food with a lower calorie than the users wanted earlier. The buyer can update their calorie input in the profile page and the suggested food will be according to the new calorie inputted. There will be an option for the buyer to close the suggestion and navigate the page to all menu without calorie restriction.	Buyer Seller
Cart	Buyer ordered food will listed with its quantity ordered and price.	Buyer

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	Buyer still can edit the quantity and still can remove or add item to the lists. The food will be ordered when the buyer confirm their order and the order sent to the seller dashboard.	
Order receiving	The order placed by the users or customers will listed and organized in sellers' web application according to the date and time with the order. By observing the web application, the cook will make foods according to the first come order. When food is ready, the cook or owner select a specific button in the system which will make the order status to be ready to notify the user that their food is ready, and they can collect the food. Admin can view the order on the admin's dashboard.	Buyer Seller Admin
Edit Profile	Buyer can update and edit their calorie count and their other information. Seller and admin can change their login ID and password	Buyer Seller Admin

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1.7 Project Timeline

First, the project starts with a project planning, study, and analysis on the feasibility of the project. The project proposal writing starts on 1st of February 2021 to 28th February 2021.

Second, gathering project requirements and analyze based on the requirements from 1st of March 2021 till 15th April 2021. At the same time, all the chapters are completed. The methodology and journal review are also further revised.

Third is the design, whereby the phase undergoes architecture design, user interface design, and program design. The estimated time for the design phase is from 16th of April 2021 till 3rd of September 2021.

After all the information and analysis has been gathered, the developing phase will start. The estimated time for the developing phase is from 4th of September 2021 till 30th November 2021.

Fifth step will be the testing phase. Unit test, system test and user acceptance test will be conducted from 1st of December 2021 till 18th of December 2021. The maintenance of the system will be carried out from 19th of December 2021 till 31st of December 2021.

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Milestone		Semester 2 - 2020/2021(FYP 1)													
		WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14
Project Activities	Identify the problems														
	Identify the objectives of the project														
	Conduct the literature review which is related to the project														
	Conduct requirement gathering														
	Design the system architecture														
	Design the database														
	Design user interface														
	Implement the design														
	Conduct the product testing														

Figure 1.1: Gantt Chart

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