# MYTIMEMASTER: DEVELOPMENT OF TIME MANAGEMENT SYSTEM FOR UNDERGRADUATE UPSI STUDENTS

**JESSICA TAN SZE SZE**
**D20191090038**



**FACULTY OF ART, COMPUTING & CREATIVE INDUSTRY**
**UNIVERSITI PENDIDIKAN SULTAN IDRIS**

**2023**

# MYTIMEMASTER: DEVELOPMENT OF TIME MANAGEMENT SYSTEM FOR UNDERGRADUATE UPSI STUDENTS

JESSICA TAN SZE SZE
D20191090038

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

A THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE BACHELOR OF SOFTWARE ENGINEERING (EDUCATIONAL SOFTWARE) WITH HONOURS

FACULTY OF ART, COMPUTING AND CREATIVE INDUSTRY
UNIVERSITI PENDIDIKAN SULTAN IDRIS

2023

05-4506832 pustaka.upsi.edu.my Perpustakaan Tuanku Bainun Kampus Sultan Abdul Jalil Shah PustakaTBainun ptbupsi

UNIVERSITI PENDIDIKAN SULTAN IDRIS
SULTAN IDRIS EDUCATION UNIVERSITY

**FAKULTI SENI, KOMPUTERAN DAN INDUSTRI KREATIF**

## PERAKUAN KEASLIAN PENULISAN

| | |
|---|---|
| Nama Pelajar: | Jessica Tan Sze Sze |
| No. Pendaftaran: | D20191090038 |
| Nama Ijazah: | Sarjana Muda Kejuruteraan Perisian (Perisian Pendidikan) dengan Kepujian |
| Bidang Pengkhususan: | Perisian Pendidikan |
| Tajuk Projek: | MYTIMEMASTER: DEVELOPMENT OF TIME MANAGEMENT SYSTEM FOR UNDERGRADUATE UPSI STUDENTS |

Saya sahkan bahawa segala bahan yang terkandung dalam laporan projek tahun akhir ini adalah hasil usaha saya sendiri. Sekiranya terdapat hasil kerja orang lain atau pihak lain sama ada diterbitkan atau tidak (seperti buku, artikel, kertas kerja, atau bahan dalam bentuk yang lain seperti rakaman audio dan video, penerbitan elektronik atau Internet) yang telah digunakan, saya telah pun merakamkan pengikhtirafan terhadap sumbangan mereka melalui konvensyen akademik yang bersesuaian. Saya juga mengakui bahawa bahan yang terkandung dalam laporan projek tahun akhir ini belum lagi diterbitkan atau diserahkan untuk program atau diploma/ijazah lain di mana-mana universiti.

17/2/2023
Tarikh

Tandatangan Pelajar

**Perakuan Penyelia:**

Saya akui bahawa saya telah membaca karya ini dan pada pandangan saya karya ini adalah memadai dari segi skop dan kualiti untuk tujuan penganugerahan Ijazah Sarjana Muda Pendidikan (Teknologi Maklumat / Multimedia / Reka Bentuk Berkomputer) dengan Kepujian.

27/2/23
Tarikh

Hasbiah
Tandatangan Penyelia

(Profesor Madya Dr. Nor Hasbiah binti Ubaidullah)

## ACKNOWLEDGEMENT

First and foremost, praises and thanks to the God, for His showers of blessings throughout my research work to complete the research successfully.

I would like to express my sincere gratitude to my supervisor, Profesor Madya Dr. Nor Hasbiah binti Ubaidullah, for her continuous support and guidance throughout the final year project development. As my supervisor, she had supported me in all stages of this work with so much patience and had given me precious advices whenever questions had arised. Under her guidance, I am encouraged to apply the knowledge and skills gained in this final year project to completely design and develop a fully functioning system at the end of the semester.

I would also like to thank all my fellow coursemates for all their information sharing, dedication to discussions and numerous motivations given to move forward together in completing the thesis writing. Also, my special appreciation and thanks to all the respondents who participated in the data collection and thus helped in the completion of this research. All the valuable time, attention and cooperation given along the data collection process are very much appreciated.

Last but not least, I would like to express my profound gratitude to my parents and to my siblings for providing me with unfailing support and continuous encouragement throughout my years of study and through the process of researching and writing this thesis. None of this could have happened without them.

# ABSTRAK

Dalam persekitaran yang pantas dan berdaya saing hari ini, keupayaan pelajar untuk menguruskan masa mereka menjadi amat penting, namun, ramai pelajar menghadapi kesukaran untuk berlatih atau tidak tahu bagaimana untuk menguruskan masa mereka atau mengendalikan masa. Oleh itu, kajian ini memaparkan penyelidikan dan mencadangkan pembangunan sistem pengurusan masa untuk pelajar sarjana muda UPSI supaya mudah merancang dan mengurus masa mereka dengan berkesan untuk tugasan akademik. Untuk membangunkan sistem yang dicadangkan bagi projek ini, metodologi model Prototaip Evolusi diikuti untuk memastikan proses pembangunan sistem berjalan lancar dalam masa yang diperuntukkan. Model ini terdiri daripada lima fasa: pembangunan spesifikasi abstrak, pembinaan sistem prototaip, penilaian sistem prototaip, sistem mencukupi dan penyampaian sistem. Populasi kajian terdiri daripada pelajar sarjana muda program Sarjana Muda Kejuruteraan Perisian (AC10) dan Sarjana Muda Pendidikan Teknologi Maklumat (AT20) di Universiti Pendidikan Sultan Idris (UPSI) dalam kohort A191 sesi akademik 2019/2020. Bagi mencapai objektif kajian ini, kajian ini menggunakan reka bentuk kuantitatif untuk menilai kebolehgunaan sistem dalam kalangan pelajar sarjana muda. Kesimpulannya, sistem yang dicadangkan, MyTimeMaster, diharapkan dapat menggalakkan dan menyokong pelajar di peringkat pengajian tinggi untuk mengamalkan pengurusan masa yang lebih baik untuk tugasan akademik pada masa akan datang.

# MYTIMEMASTER: DEVELOPMENT OF TIME MANAGEMENT SYSTEM FOR UNDERGRADUATE UPSI STUDENTS

## ABSTRACT

In today's fast-paced and competitive environment, students' ability to manage their time is becoming extremely important, however, many students face difficulties to practice or do not know how to manage their time or handle time. This study, therefore, presents the research and proposes the development of a time management system for undergraduate UPSI students to easily plan and manage their time effectively for academic tasks. To develop the proposed system for this project, the Evolutionary Prototyping model methodology was followed to ensure the system development process runs smoothly in the allocated time. The model consists of five phases: develop abstract specification, build prototype system, evaluate prototype system, system adequate and deliver system. The population of the study comprised undergraduate students from the Bachelor of Software Engineering (AC10) and Bachelor of Information Technology Education (AT20) programs at Universiti Pendidikan Sultan Idris (UPSI) in the cohort A191 academic session 2019/2020. To achieve the objective of this research, this study uses a quantitative design to evaluate the system's usability among undergraduate students. It is thus hoped that the proposed system, MyTimeMaster, will encourage and support students in higher education to practice better time management for academic tasks in the future.

# TABLE OF CONTENTS

# LIST OF TABLES

# LIST OF FIGURES

# LIST OF ABBREVIATIONS

| | |
|---|---|
| AHP | Analytical Hierarchy Process |
| ASP | Active Server Page |
| CSS | Cascading Style Sheets |
| GPA | Grade Point Average |
| GTD | Getting Things Done |
| HTML | Hypertext Markup Language |
| ICT | Information and Communications Technology |
| KAU | King Abdulaziz University |
| MADLC | Mobile Application Development Cycle |
| Ph.D | Doctor of Philosophy |
| PHP | Hypertext Preprocessor |
| RAD | Rapid Application Development |
| SDD | Software Design Document |
| SDLC | Software Development Life Cycle |
| SQL | Structured Query Language |
| SRS | Software Requirement Specifications |
| STP | Software Testing Plan |
| SUS | System Usability Scale |
| UPSI | Universiti Pendidikan Sultan Idris |

## LIST OF APPENDICES

# CHAPTER 1

# INTRODUCTION



## 1.1 Introduction

Time is a valuable resource. It is the only resource that cannot be stored for future use, cannot be modified, cannot be returned once spent, and is utilised entirely at the owner's choice. No one can stop time, but everyone can choose how to spend the time that is available to them (Mercanlioglu, 2010). In today's fast-paced and competitive environment, students' ability to manage their time is becoming extremely important. Effective time management can contribute to improved academic achievement and decreased levels of anxiety in students. Unfortunately, many students struggle to create a balance between their academics and their daily life (Adams & Blair, 2019). According to Razali, Russian, Gan and Arbin (2018), the flexibility and freedom of a higher education

institution might distract students who have not acquired time management skills. Hence, due to poor time management, students at the university level are often under pressure to finish all of their tasks at hand one at a time.

Apart from that, students' low self-motivation and lack of goal-setting and task prioritisation also have a significant impact on student time management. Time management is undeniably important for every university student to achieve and maintain great academic success. In their study, Adams and Blair (2019) found that students' ability to set goals and prioritise tasks, in addition to their perceived control of time, were the time management behaviours that had the most significant positive link with semester grade point average and cumulative grade point average. Specifying goals, planning, prioritising, and monitoring prove to have an influence on achieving positive results in time management (Hashim et al., 2020). Hence, goal setting and task prioritising in time management are essential for students to effectively plan the time allocated for each of their academic tasks. In other words, a proper time management system is very important to support students in higher education in better organising their time for academic tasks. Therefore, this time management system (MyTimeMaster) is proposed for undergraduate students to easily stay organised and motivated in managing their time effectively for academic tasks.

This thesis is divided into six chapters, each of which will be outlined and discussed in further detail. Chapter one provides an overview of the research study. In this chapter, the introduction, research background, problem statement, research objectives,

research questions, scope and significance of the study are described. Chapter two presents a review of the literature on related work as well as a comparison of existing system. Meanwhile, chapter three will describe the research methodology that has been used and the research design. Next, in chapter four, the software development methodology, system design and software being used will be explained in detail. Then, chapter five will outline the important findings of the research, demonstrating the real outcomes obtained throughout the project. Finally, chapter six will contain the conclusion of the research findings and provide recommendations for future enhancements.

## 1.2 Research Background



In today's era of technological advancement, web-based application has become a major part of our everyday life. Over the years, the development of web-based applications has grown significantly, changing more and more manual workflow into more systemized processes. According to Murugesan and Ginige (2008), web-based systems and applications today provide a varied range of functionality to a huge number of users. In other words, a web-based application can be built for a wide range of purposes and used by anyone, from businesses to individuals for a number of reasons. A web-based application is a software application that is stored on a distant server and distributed through the Internet using a browser interface. The phrase "web-based" refers to software that operates on a web browser. As opposed to traditional desktop applications, web-based applications do not require any downloads and can be accessed from any

device connected to a network through web browsers such as Mozilla Firefox, Safari, and Google Chrome. Hence, web-based applications are simple to use, quick and more convenient for users than traditional desktop applications.

Generally, web-based applications are comprised of three elements which are a web server, an application server and a database. A web server is required to handle client requests while an application server performs the requested tasks and the database stores any information that is required. Thus, the web-based application is also known as a client-server program which consists of a client-side and a server-side and is written in different kinds of languages. For server-side programming which is responsible for storing and retrieving data, developers usually use languages such as Python, Java, Hypertext Preprocessor (PHP), Active Server Pages (ASP) and Ruby. On the other hand, for client-side programming, languages such as JavaScript, Cascading Style Sheets (CSS), and Hypertext Markup Language (HTML) are used to develop the application's front-end which displays information to the user. This is because the browser is used to execute the program in these languages. For instance, HTML is used to construct documents on the World Wide Web, CSS is used to specify the design, layout, and display formats for different devices and screen sizes of the web-based system and JavaScript is applied to basic HTML for creating interactive documents.

Nowadays, with web-based applications, our life becomes simpler and easier. Web-based applications have undoubtedly transformed our lives and become a critical tool for small and large organisations as well as individuals to achieve their goals. Indeed,

web-based applications are becoming increasingly popular and overtaking traditional desktop applications all over the world.

## 1.3 Problem Statement

A common issue that occurs among undergraduate students is time management. Many students have struggles managing their time effectively to meet their assignment deadlines and study for examinations and quizzes owing to poor time management skills (Hashim et al., 2020). Razali, Russian, Gan and Arbin (2018) point out that students nowadays frequently complain about not having enough time to accomplish all of the tasks assigned to them. When attempting to read all of the prescribed books and chapters, meet paper deadlines, and engage in extracurricular activities, university students may get overloaded with the feeling that they do not have enough time to finish all of their work adequately. In short, without proper time management, the list of their incomplete tasks will increase day by day, making it harder for them to finish all the tasks given to them.

Besides, according to Nasrullah and Khan (2015), time management has a great influence on the lives of students, especially those who are studying in higher education institutions where parent and instructor monitoring is not available. Adams and Blair (2019) highlight that students are expected to manage work-life balance with little institutional assistance, and the way higher education institutions are structured leads to peaks and troughs in student workload. Unlike the situation at the school level, students in

higher education institutions are fully responsible to decide and allocate their time for each academic task assigned (Hashim et al., 2020). However, many students fail to practice or do not know how to manage their time or handle time (Ahmad, Batool & Ch, 2019). Students frequently encounter issues such as task aversion and ambiguity, and as a result of their lack of organisational skills, they begin to procrastinate. As a consequence, students will be unable to organise their tasks according to their priorities, causing them to get easily distracted and so procrastinating (Nasrullah & Khan, 2015). Therefore, students' lack of time management skills will have a negative impact on their life and academics.

Moreover, according to Nasrullah and Khan (2015), student time management is not possible if there is no positive self-motivation, performance, ability and motivation. Every student should be able to manage their time well, which involves defining goals and priorities, implementing time management systems, and being structured in their use of time. However, although there are a range of digital tools or software for students to plan and manage their time, there is no free version time management system that enables students to set their goals. Hence, students' lack of clearly defined goals leads to low self-motivation, which further results in poor time management abilities among students.

In order to solve the problem, a web-based time management system called MyTimeMaster is proposed to allow students to plan and manage their time for academic tasks easily and effectively. Students will be able to set their goals to clearly define what they need to prioritise and stay motivated and on schedule to achieve them. Besides,

through MyTimeMaster, students can frequently review their performance and rearrange their schedule based on the data displayed in the system's dashboard, which is provided for better time management and academic performance. In addition, the system will also provide advice on time management strategies to help students better manage their time, achieve their academic goals and increase students' awareness of the importance of time management in their daily life.

## 1.4 Research Objectives

The research objectives are as follows:



i. To identify the requirements needed in the development of a time management system for undergraduate UPSI students.

ii. To develop a time management system that can help undergraduate UPSI students plan and manage their time easily and effectively for their academic tasks.

iii. To evaluate the usability (ease of use) of the time management system when used among undergraduate UPSI students.

## 1.5 Research Questions

The research questions addressed in this study are as follows:

i. What requirements are needed to develop an effective time management system for undergraduate UPSI students?

ii. How to develop a proper time management system that can help undergraduate UPSI students in staying on track and organised in their academic tasks?

iii. Does the time management system's usability (ease of use) meet for undergraduate UPSI students?

## 1.6 Scope of Project

The scope of this project are as follows:



i. This system will be focusing on undergraduate UPSI students in helping them to effectively organise their academic tasks and prioritising the tasks that must be accomplished first according to importance and urgency.

ii. This system will provide a full calendar display that allows users to view and plan their schedules based on their available time. Hence, students can easily view their scheduled time and constantly alert and ready to concentrate on the task at hand.

iii. This system will allow users to set their goals to clearly view what they need to prioritise and stay motivated and on schedule to achieve them. Besides, this system will provide data in the dashboard to allow users to easily view their goal

achievement from time to time and make changes to their schedule for better time management as well as academic performance.

iv. This system will provide advice on time management strategies to guide students in better managing their time and achieving their academic goals as well as increase students' understanding and awareness of the necessity of proper and effective time management in their everyday lives.

## 1.7 Significance of Study

The significance of this study are as follows:



i. Students will be aware of their responsibility for their work and role.

Undergraduate UPSI students will be more alert to their work as they can efficiently plan and manage their time for various types of academic tasks. This is because they can easily create and prioritise a list of tasks according to importance and urgency and keep track of the progress of their academic tasks. Thus, they will not miss any important deadlines and will be responsible to spend their time wisely to complete them on time.

ii. Students will be able to improve their productivity and work quality.

Undergraduate UPSI students can plan and organise an effective schedule that prioritises tasks that need to be accomplished first. Hence, they will be able to concentrate on one task at one time without being distracted. In other words, they will be able to give total attention to the task at hand, be more productive and produce quality work in a particular amount of time.

iii. Students will be able to have a good quality of life.

Undergraduate UPSI students can easily control their time and keep track of their work progress. As a result, they can practice better time management skills, feel less pressured and overburdened, and be more at ease which eventually leads to a happier and good quality of life.



## 1.8 Conclusion

This first chapter provides an introduction to give an overview of the research study and the proposed time management system for undergraduate UPSI students, MyTimeMaster. In this chapter, the research background of web-based applications and problem statements focusing on students' time management are discussed. The research objectives to be accomplished and research questions to be answered at the end of the research study also have been clearly stated. This chapter also describes the scope of the proposed time management system and the significance obtained from the research study.