

Universiti Teknologi MARA

**Online Convenience Store System using
Multidimensional Data Visualization for
Serbaneka UiTM Tapah**

Nisa Athirah Binti Zainal

**Thesis submitted in fulfilment of the requirements
for Bachelor of Computer Science (Hons.)
Faculty of Computer and Mathematical Sciences**

February 2022

DECLARATION

I certify that this report and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.



.....

NISA ATHIRAH BINTI ZAINAL

2020973929

JANUARY 31, 2022

ABSTRACT

The explosion of e-commerce businesses has seen the growth number of the online businesses worldwide. Retailers nowadays are opting with e-commerce platform to manage and monitor the business activities which is considerably convenience such as visualizing the sales data. However, Serbaneka is still using traditional way to store the sales data such as in spreadsheet papers which lead to data loss or misplaced the sales record. The objective of this project is to study the current usage of e-commerce system among hostel students in UiTM Tapah. A preliminary survey was carried out by eight selected hostel students in order to generate a list of criteria based on students' previous experiences with e-commerce systems. The following objective is to develop a web-based convenience store system using multidimensional data visualization for Serbaneka UiTM Tapah. The System Development Life Cycle (SDLC) method is used in the development of Online Convenience Store System for Serbaneka UiTM Tapah. Besides, multidimensional data visualization is used as method in visualizing the sales data of Serbaneka UiTM Tapah. Other than that, this project is to evaluate the usability of the system using Post-Study System Usability Questionnaire (PSSUQ) approach. The PSSUQ evaluation is evaluated by three selected experts. The results of PSSUQ evaluation stated that the experts satisfied with the development of Online Convenience Store System using Multidimensional Data Visualization for Serbaneka UiTM Tapah. This is due to the system's ability to assist retailers Serbaneka UiTM Tapah in managing and monitoring the business activities.

TABLE OF CONTENTS

CONTENTS	PAGE
SUPERVISOR'S APPROVAL	ii
DECLARATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
TABLE OF CONTENTS	vi
LIST OF FIGURES	x
LIST OF TABLES	xii
LIST OF ABBREVIATIONS	xiii

CHAPTER ONE: INTRODUCTION

1.1	Introduction	1
1.2	Background of Study	1
1.3	Problem Statement	2
1.4	Project Questions	4
1.5	Project Objectives	4
1.6	Project Scope	4
1.7	Significance of Study	5
1.8	Summary	6

CHAPTER TWO: LITERATURE REVIEW

2.0	Introduction	7
2.1	Overview of E-Commerce Web Application	9
2.2	Overview of Existing Web Systems	10
	2.2.1 Comparison of Existing Web System	12
2.3	Overview of Research Elements	13

2.3.1	Architecture of Web Development	13
2.3.2	Techniques/ Methods in Web Development	14
2.3.2.1	Structured Analysis	15
2.3.2.2	Object-Oriented Analysis	16
2.3.2.3	Agile Methods	16
2.3.3	Comparison System Development Methods	17
2.3.4	Data Visualization	18
2.4	Specific Description of Research Elements	20
2.4.1	Web Development	21
2.4.1.1	Front-End and Back-End Development	21
2.4.2	Web Development Model	23
2.4.2.1	Modelling Techniques	23
2.4.2.2	Modelling Tools	24
2.4.3	Data Visualization	25
2.4.3.1	Data Visualization Techniques	25
2.5	Highlight of The Chosen Techniques/ Methods and Features with Justification	29
2.6	Gap of the Project	29
2.7	Summary	29

CHAPTER THREE: METHODOLOGY

3.1	Introduction	33
3.2	Phase 1: Study the Usage of E-commerce System among Hostel Students UiTM Tapah	34
3.2.1	Feasibility Study	34
3.2.2	Literature Review	34
3.2.3	Preliminary Survey	35
3.3	Phase 2: Development of a Web-Based Convenience Store System using Multidimensional Data Visualization for Serbaneka UiTM Tapah	36
3.3.1	Development Methodology	38