JUMBUY!: PRELOVED E-MALL WEB-BASED SYSTEM

CASSANDRA CHRISTINE CHARLSEAK

FACULTY OF COMPUTING AND INFORMATICS UNIVERSITI MALAYSIA SABAH 2022



JUMBUY!: PRELOVED E-MALL WEB-BASED SYSTEM

CASSANDRA CHRISTINE CHARLSEAK

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

FACULTY OF COMPUTING AND INFORMATICS UNIVERSITI MALAYSIA SABAH 2022



NAME: CASSANDRA CHRISTINE CHARLSEAK

MATRIC NUMBER: BI18110216

TITLE : JUMBUY! PRELOVED E-MALL WEB-BASED

SYSTEM

DEGREE : BACHELOR OF COMPUTER SCIENCE WITH

HONOURS (NETWORK ENGINEERING)

VIVA'S DATE : 20 JANUARY 2022

CERTIFIED BY;

1. SUPERVISOR

DR NORAZLINA KHAMIS





DECLARATION

I, the undersigned, solemnly declare that the project report is based on my own work completed during our study under the supervision of Dr Norazlina Khamis.

20 January 2022

Sund

CASSANDRA CHRISTINE CHARLSEAK

BI18110216



ACKNOWLEDGEMENT

I would like to thank and appreciate my supervisor, Dr. Norazlina Khamis, for her guidance throughout the project's development. I would also like to thank my examiners, Dr. Chin Pei Yee and Madam Siti Hasnah Binti Tanalol, for their feedback on this project, which has helped me improve. I would like to thank to all the respondents for their time to answer all the questionnaires. I would also like to thank my friends for their help and support with this project. Last but not least, I would like to express my gratitude to my family for their encouragement, love, support and prayers throughout this project.

Cassandra Christine Charlseak

20 January 2022



ABSTRACT

Business-to-consumer (B2C) marketing is a method of selling products and services immediately between a company and consumers who are the end-users of the company's products or services. Most businesses that sell directly to consumers are classified as B2C. An online system platform such as e-commerce system allowing users to buy product whether it is new or preloved items on the internet. There are a lot of platforms that develop to sell preloved items. There are many e-commerce platforms that are already developed such as Carousell. This has become a lot of competition that always been a problem to develop an e-commerce application. Some students cannot afford to buy a new edition of reference books. Mostly, the new edition or new released books are guite expensive and some of the reference books can be found in the library but are limited and there is specific amount of time on how long student can borrow the books. It is better to shop online as the user as they can just simply relax at their home while finding the item that they desired at the best price as they can compare it to another seller. The purpose of developing this project is to let students in Universiti Malaysia Sabah to buy preloved items. This report will be describing about the e-commerce system that will be develop called JumBuy!: Preloved e-mall web-based system. JumBuy!: Preloved e-mall system is an e-commerce web-based system that helps student to buy items such as preloved books, so that another student can buy with affordable price.



ABSTRAK

Pemasaran perniagaan kepada pengguna (B2C) ialah kaedah menjual produk dan perkhidmatan serta-merta antara syarikat dan pengguna yang merupakan pengguna akhir produk atau perkhidmatan syarikat. Kebanyakan perniagaan yang menjual terus kepada pengguna diklasifikasikan sebagai B2C. Platform sistem dalam talian seperti sistem e-dagang yang membolehkan pengguna membeli produk sama ada barangan baharu atau terpakai di internet. Terdapat banyak platform yang dibangunkan untuk menjual barangan terpakai. Terdapat banyak platform e-dagang yang telah dibangunkan seperti Carousell. Ini telah menjadi banyak persaingan yang sentiasa menjadi masalah untuk membangunkan aplikasi e-dagang. Sesetengah pelajar tidak mampu membeli buku rujukan edisi baharu. Kebanyakannya, edisi baharu atau buku keluaran baru agak mahal dan beberapa buku rujukan boleh didapati di perpustakaan tetapi terhad dan terdapat tempoh masa tertentu untuk pelajar boleh meminjam buku tersebut. Adalah lebih baik untuk membeli-belah dalam talian sebagai pengguna kerana mereka hanya boleh berehat di rumah mereka sambil mencari barang yang mereka inginkan pada harga terbaik kerana mereka boleh membandingkannya dengan penjual lain. Tujuan pembangunan projek ini adalah untuk membolehkan pelajar di Universiti Malaysia Sabah membeli barangan preloved. Laporan ini akan menerangkan tentang sistem e-dagang yang akan dibangunkan iaitu JumBuy!: Preloved e-mall sistem berasaskan web. JumBuy!: Sistem e-mall Preloved ialah sistem berasaskan web e-dagang yang membantu pelajar membeli barangan seperti buku preloved, supaya pelajar lain boleh membeli dengan harga yang berpatutan.



TABLE OF CONTENTS

IIILE	Page
DECLARATION	iv
ACKNOWLEDGEMENT	V
ABSTRACT	vi
ABSTRAK	vii
LIST OF TABLES	xii
LIST OF FIGURES	xiii
LIST OF APPENDIX	xvii
CHAPTER 1: INTRODUCTION	1
1.1 Introduction	1
1.2 Problem Background	1
1.3 Problem Statement	2
1.4 Project Objectives	3
1.5 Project Scope	3
1.6 Limitations	3
1.7 Expected Outcome	4
1.7.1 System Modules	4
1.8 System Flowchart for JumBuy!: Preloved E-mall web-based system	6
1.9 Project Milestone	7
1.10 Report Organization	8
1.11 Summary	8
CHAPTER 2: LITERATURE REVIEW	9
2.1 Introduction	9
2.2 Flow of the project	9



2.2.1 Design of the web-based system	9
2.2.2 Developing the web-based system	10
2.2.3 Evaluating the web-based system	10
2.3 E-commerce	10
2.4 Business to Consumer (B2C)	11
2.5 Consumer-to-Consumer (C2C)	12
2.6 Review of Existing web-based system	13
2.6.1 Shopee	13
2.5.2 Lazada	16
2.5.3 Carousell	19
2.5.4 Lelong.my	21
2.5.5 Shpock	23
2.7 Comparison of existing web-based system	24
2.8 Summary	24
CHAPTER 3: METHODOLOGY	25
3.1 Introduction	25
3.2 Methodology	27
3.2.1Phase1: Tode signthemodulesforsellingandbuyingpreloveditemsforUniver MalaysiaSabah'sstudents	rsiti 27
3.2.2 Phase 2: To develop a web-based preloved selling and buying system	27
3.2.3 Phase 3: To evaluate the usability of the preloved web-based system distributing questionnaire	by 29
3.3 Software Requirement and Development	30
3.3.1 Software and Tools	30
3.3.2 Framework	30
3.3.3 Plugins and APIs	30
3.4 hardware Requirement and System Development	31
3.5 Summary	31
CHAPTER 4: SYSTEM ANALYSIS AND DESIGN	32
4.1 Introduction	32
4.2 Requirements of Elicitation Techniques	32



	4.2.1 Observation	32
	4.2.2 Questionnaire	33
	4.3 Requirements	33
	4.3.1 Requirements for JumBuy! : Preloved e-mall web-based system	33
	4.4 Activity Diagram	35
	4.5 Structured Approach	36
	4.6 Data Dictionary	36
	4.7 Entity Relationship Diagram (ERD)	39
	4.8 Context Diagram	40
	4.9 Data Flow Diagram (DFD) Level 0	41
	4.10 Data Flow Diagram (DFD) Level 1	42
	4.10.1 DFD Level 1 for seller	42
	4.10.2 DFD Level 1 for customer	43
	4.11 Data Flow Diagram (DFD) Level 2	44
	4.12 Architecture Design	45
	4.13 User Interface Design	47
	4.13.1 Customer User Interface for JumBuy!: Preloved e-mall Web-based System	47
	4.13.2 Seller User Interface for JumBuy!: Preloved E-mall web-based system	52
	4.14 Summary	56
(CHAPTER 5: IMPLEMENTATION AND TESTING	57
	5.1 Introduction	57
	5.2 System Implementation	57
	5.2.1 JumBuy! Preloved e-mall web-based for user	58
	5.2.2 JumBuy! Preloved e-mall web-based for seller	64
	5.3 System Testing	70
	5.5 Summary	71
(CHAPTER 6: EVALUATION	72
	6.1 Introduction	72
	6.2 Evaluation of the usability for the system	72

6.5 Summary	78
CHAPTER 7: CONCLUSION	79
7.1 Introduction	79
7.2 Summary	79
7.3 Limitations	81
7.4 Future Work	81
REFERENCES	82



LIST OF TABLES

		Page
Table 1.1:	JumBuy!: Preloved E-mall- Modules	4
Table 2.1:	Comparison of existing related Web based.	24
Table 3.1:	Hardware requirement	31
Table 4.1:	Functional requirement for web-based system	34
Table 4.2:	Non-functional requirement for web-based system	34
Table 4.3:	Data Dictionary for User	36
Table 4.4:	Data Dictionary for Seller	37
Table 4.5:	Data Dictionary for Orders	37
Table 4.6:	Data Dictionary for Product	38
Table 4.7:	Data Dictionary for Shop	38
Table 5.1:	JumBuy!: Preloved e-mall web-based system- System Testing	70
Table 7.1:	Summary of objectives	80



LIST OF FIGURES

	Page
Figure 1.1: JumBuy!: Preloved e-mall - Flowchart	6
Figure 1.2: JumBuy!: Preloved e-mall – Gantt chart	7
Figure 2.1: Shopee – Main Page	13
Figure 2.2: Shopee – Main Page	14
Figure 2.3: Shopee – Product details	15
Figure 2.4: Shopee – Checkout	15
Figure 2.5: Lazada– Main Page	16
Figure 2.6: Lazada– Main Page	17
Figure 2.7: Lazada– Product details	17
Figure 2.8: Lazada– Checkout	18
Figure 2.9: Lazada– Place order	18
Figure 2.10: Carousell– Main Page	19
Figure 2.11: Carousell– Product details	19
Figure 2.12: Carousell– Make payment	20
Figure 2.13: Lelong.my– Main Page	21
Figure 2.14: Lelong.my- Product details	22
Figure 2.15: Lelong.my- Checkout	22
Figure 2.16: Shpock- Main page	23
Figure 2.17: Shpock- Make offer	23
Figure 3.1 Methodology flowchart	26
Figure 3.2: RAD model	28

Figure 4.1: The activity diagram for JumBuy! Preloved E-mall web-based	35
Figure 4.2: ERD for JumBuy!: Preloved e-mall	39
Figure 4.3: CD for JumBuy!: Preloved e-mall	40
Figure 4.4: DFD for JumBuy!: Preloved e-mall	41
Figure 4.5: DFD Level 1: Process 1.0	42
Figure 4.6: DFD Level 1: Process 2.0	42
Figure 4.7: DFD Level 1: Process 3.0	42
Figure 4.8: DFD Level 1: Process 5.0	43
Figure 4.9: DFD Level 1: Process 6.0	43
Figure 4.10: DFD Level 2	44
Figure 4.11: Architecture Design for System	46
Figure 4.12: JumBuy!: Preloved e-mall – Log In	47
Figure 4.13: JumBuy!: Preloved e-mall – Sign Up	48
Figure 4.14: JumBuy!: Preloved e-mall – Main Page	49
Figure 4.15: JumBuy!: Preloved e-mall – Product Details	50
Figure 4.16: JumBuy!: Preloved e-mall – Cart Interface	50
Figure 4.17: JumBuy!: Preloved e-mall – payment	51
Figure 4.18: JumBuy!: Preloved e-mall – Order receipt	51
Figure 4.19: JumBuy!: Preloved e-mall – Signup for seller	52
Figure 4.20: JumBuy!: Preloved e-mall – log in for seller	53
Figure 4.21: JumBuy!: Preloved e-mall – Add shop	53
Figure 4.22: JumBuy!: Preloved e-mall – view product	54
Figure 4.23: JumBuy!: Preloved e-mall – Add product	54
Figure 4.24: JumBuy!: Preloved e-mall – Edit product	55
Figure 4.25: JumBuy!: Preloved e-mall – Delete product	55
Figure 4 26: JumBuyl: Preloved e-mall – view order	56



Figure 5.1: JumBuy!: Preloved e-mall – Main Page	58
Figure 5.2: JumBuy!: Preloved e-mall – Sign Up	59
Figure 5.3: JumBuy!: Preloved e-mall – Successfully created	60
Figure 5.4: JumBuy!: Preloved e-mall – Database for customer	60
Figure 5.5: JumBuy!: Preloved e-mall – customer log in	60
Figure 5.6: JumBuy!: Preloved e-mall – Product list	61
Figure 5.7: JumBuy!: Preloved e-mall – customer shopping cart	62
Figure 5.8: JumBuy!: Preloved e-mall – Payment	62
Figure 5.8: JumBuy!: Preloved e-mall – Order receipt	63
Figure 5.9: JumBuy!: Preloved e-mall – database for order	63
Figure 5.10: JumBuy!: Preloved e-mall – Sign up for seller	64
Figure 5.11: JumBuy!: Preloved e-mall – database for seller	64
Figure 5.12: JumBuy!: Preloved e-mall – Sign up for seller	65
Figure 5.13: JumBuy!: Preloved e-mall – Add shop	65
Figure 5.14: JumBuy!: Preloved e-mall – database for shop	66
Figure 5.15: JumBuy!: Preloved e-mall – Add product	66
Figure 5.16: JumBuy!: Preloved e-mall – database for product	67
Figure 5.17: JumBuy!: Preloved e-mall – View product	67
Figure 5.18: JumBuy!: Preloved e-mall – edit product	68
Figure 5.19: JumBuy!: Preloved e-mall – product added to the system	68
Figure 5.20: JumBuy!: Preloved e-mall – delete product	69
Figure 5.21: JumBuy!: Preloved e-mall – database updated after product deleter	d 69
Figure 6.1: Result questionnaire- first question	73
Figure 6.2: Result questionnaire- second question	73
Figure 6.3: Result questionnaire-third question	74
Figure 6.4: Result questionnaire- fourth question	74

Figure 6.5: Result questionnaire- fifth question	75
Figure 6.6: Result questionnaire- sixth question	75
Figure 6.7: Result questionnaire- seventh question	76
Figure 6.8: Result questionnaire- eighth question	76
Figure 6.9: Result questionnaire- nineth question	77
Figure 6.10: Result questionnaire- tenth question	77



LIST OF APPENDIX

	Page
Appendix A Questionnaire	84



CHAPTER 1

INTRODUCTION

1.1 Introduction

In this chapter, it will be introducing an overview regarding this whole project that will be develop. The objective of this project is to develop a system that will be use by the student and staff in the campus to buy and sell pre-loved items. Each of section in this chapter will be explained in detail.

1.2 Problem Background

Mobile and e-commerce applications are instruments for accessing and buying products and services on the Internet these days. As well as the high technological progress, these applications are continuously evolving. E-commerce has been rapidly developed. E-Commerce is an industry in which electronic systems like the Internet purchase and sell products and services (Chaudhury & Kuilboer, 2002).

There are a lot of e-commerce web-based system nowadays such as Shopee, Lazada, Zalora and many more. These systems have been playing an important role for users to buy things that they are interested in. During this pandemic Covid-19 proved to be the driving force behind the unctad.org digital and e-commerce shift on 1st April 2021.

In e-commerce system there are variety of dimensions for each category. For instance, book search should be shown such as the name of the author, the book series of editions, the language and others related. Generally, it must be detailed so that users can understand instantly. It is necessary to design each category properly

for customers to be able to restrict themselves. By having an e-commerce web-based system such as Shopee, the details of the product or item that user wanted to buy are stated already.

The purpose of developing an e-commerce application that will be selling preloved products is to help students with their needs such as reference books. As we are all aware, not all students at universities are able to purchase books for their work. Thus, students can use this application to meet their needs on buying any related product that they interest in by developing an e-commerce application. It is not only limited to books only, apart from that, the user can buy all the preloved items or products that will be sell on that web-based system.

1.3 Problem Statement

Nowadays, there are so many unused items are thrown away even though, the quality is still good and still can be used by other people. By throwing away unused items, it will become a waste and will give an enormous negative environmental impact. There are a lot of platforms that develop to sell preloved items. By developing a web-based system that will be develop that is like an e-commerce system may help student to buy items on the system such as reference books or other essentials.

The problems shown below are the main reasons an e-commerce system lookalike should be propose.

- There is no specific system for student to buy and sell preloved items around the campus.
- Some students cannot afford to buy a new edition of reference books. Mostly,
 the new edition or new released books are quite expensive and some of the
 reference books can be found in the library but are limited and there is specific
 amount of time on how long student can borrow the books.
- Most of the time, some students have a lot of unused items. Thus, all the unused items are thrown away even though, it is still in good conditions.
- It is better to shop online as the user or known as customer does not have to go spend hours driving to the shop just to buy one specific thing instead,



they can just simply relax at their home while finding the item that they desired at the best price as they can compare it to another seller.

1.4 Project Objectives

- To design the modules for selling and buying preloved items for Universiti Malaysia Sabah's students.
- ii. To develop a web-based preloved selling and buying system.
- iii. To evaluate the usability of the preloved web-based system by distributing questionnaire.

1.5 Project Scope

The scope of this project is mainly targeted the students in Universiti Malaysia Sabah and to develop a web based for e-commerce to match their preferences and behaviours, allowing them to purchase items on the web they desire. A web-based platform will be developed later for student to buy and sell preloved items called JumBuy!: Preloved e-mall.

JumBuy!: Preloved e-mall will shows all the basic information such as items that will be sell on the system. User can create their account to sell or buy item on the system. The function of the system is logging in, account registration, buying and selling items.

1.6 Limitations

1. This system can be used for Universiti Malaysia Sabah students and staff only.



2. The payment method will be cash on delivery (COD).

1.7 Expected Outcome

By the end of this project, an e-commerce web-based system will be produced. This web-based system platform purposely for buying items or products online. Web-based system can be use by Universiti Malaysia Sabah's students and staffs in the campus. Below are the expected modules for the proposed system.

1.7.1 System Modules

Table 1.1 shows the list of module for the for JumBuy! : Preloved e-mall web-based system and the descriptions for each module.

Table 1.1: JumBuy!: Preloved E-mall- Modules

NO	MODULE			DESCRIPTION
1	Register fo	r user	and	User is for customer and Seller if for seller. Both
	seller			are required to register in the system to purchase
				or sell the items that they wish to buy and sell.
				Once the user has registered in the system, they
				can simply login into the system and carry on the
				process of buying.
				User is most likely known as customer is in
				charge on buying the items from the system.
				User's roles:
				Register as User.
				 Log In into the system.
				Buy items on the web-based system.
2	Add to cart			This process is mainly carried on by the user as
				it is process of purchasing items or products that
				made by the user.



4	Check Out	User will be able to make order once they added
		the item to the bag. The order will be
		automatically added when user wanted to
		purchase the items.
5	Confirm Order	User will be able to make payment for the item
		they purchased but it will be cash on delivery
		(COD).
6	Add shop	Seller will add shop details.
7	Manage Product	Seller will be able to check on the selling records,
		add, edit and delete product.

A web-based system should be developed by the end of this project. All the modules are expected to be working and allows user to use it very well.



1.8 System Flowchart for JumBuy!: Preloved E-mall web-based system

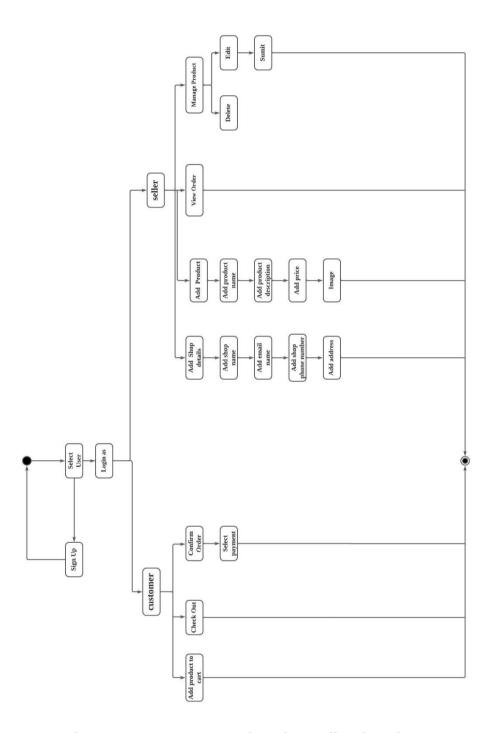


Figure 1.1: JumBuy!: Preloved e-mall - Flowchart



1.9 Project Milestone

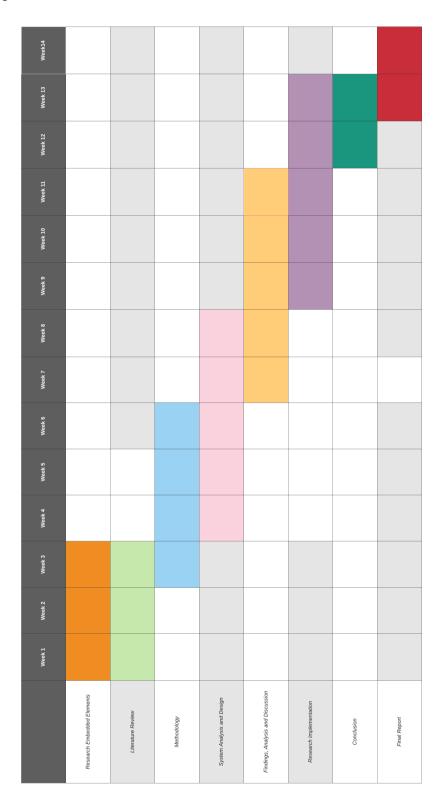


Figure 1.2: JumBuy!: Preloved e-mall — Gantt chart

