

Universiti Teknologi MARA

**MyGamelan : A persuasive mobile
application for Malay gamelan music**

Madihatul Aqilah Binti Mohd Jamel

**Thesis submitted in fulfilment of the requirements
for Bachelor of Information Technology (Hons.)
Information Systems Engineering
Faculty of Computer and Mathematical Sciences**

January 2017

STUDENT'S DECLARATION

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

.....
MADIHATUL AQILAH BINTI MOHD JAMEL
2014159405

FEBRUARY 10, 2017

ABSTRACT

Gamelan is one of the traditional music in Malaysia. There are seven gamelan instruments, but this project only focus on one instrument which is bonang. According to the preliminary study, there are a lot of peoples have interest in knowing about gamelan music instrument but there were some limitations to it. In order to learn gamelan music, people need to attend the manual class which is costly and have time constraints. Another limitation would be the gamelan instruments is hard to get due to its own price because it needs to be imported from different country. This project will be focusing on the development of a persuasive mobile application for Malay gamelan music by implementing persuasive design principle. There are six persuasive design elements involved in this project, which are tunneling, tailoring, self-monitoring, contrast, communication framing and multimedia usage. This project use Mobile Application Development Lifecycle (MADLC), which consist of four phase which is planning, designing, developing and testing. The use of persuasive technology in this project shows that the application is useful and satisfy the user when using it. Based on the usability testing result, the satisfaction criteria have the highest value with the average of 4.7. Besides, the application developed is suitable for people who are interested in learning about Malay gamelan music. The application has limitation in terms of platform compatibility and the application does not support a complete gamelan song because the application still need to be enhanced for future use. Due to this limitation, the future works for the application is the application can be supported on different platform such as IOS or windows. Next is the application can show more gamelan song with more challenging level for player. Besides, the application can compare score between player of different smartphone.

TABLE OF CONTENT

CONTENTS	PAGE
SUPERVISOR'S APPROVAL	ii
STUDENT'S DECLARATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
TABLE OF CONTENT	vi
LIST OF FIGURES	ix
LIST OF TABLES	x
LIST OF ABBREVIATION	xi
CHAPTER ONE: INTRODUCTION	1
1.1 Background of Study	1
1.2 Problem Statement	4
1.3 Project Aim	4
1.4 Project Objectives	4
1.5 Project Scope	4
1.6 Project Significance	5
1.7 Anticipated Result	5
1.8 Chapter Summary	5
CHAPTER TWO: LITERATURE REVIEW	6
2.1 Overview of gamelan music	6
2.1.1 Malay gamelan	7
2.1.2 Malay gamelan music instruments: Bonang	8
2.2 The usage of mobile application	9
2.3 Mobile application development for learning purpose	11
2.4 Persuasive technology	11
2.4.1 Fogg Behavioral Model	12
2.4.2 Persuasive design technology process	14
2.4.3 Persuasive Design Principle	15
2.5 Fields of persuasive	21
2.5.1 Persuasive in learning	22
2.5.2 Persuasive in art and culture	22

2.6	Existing related application	23
2.6.1	Gamelan by Masagi studio	23
2.6.2	Real Drum by Kolb Music	25
2.6.3	Xylophones by Easy Lab	26
2.7	Methodology in developing the system	27
2.7.1	Mobile Application Development Lifecycle (MADLC)	27
2.7.2	Rapid Application Development (RAD) Methodology	30
2.7.3	ADDIE Methodology	31
2.7.4	Comparing methodologies	34
2.8	Testing Activity: Usability Testing	36
2.9	Chapter Summary	38
CHAPTER THREE: METHODOLOGY		39
3.1	Introduction	39
3.2	The MADLC Methodology	40
3.2.1	Phase 1: Planning	42
3.2.2	Phase 2: Design	43
3.2.3	Phase 3: Development	45
3.2.3.1	Hardware requirement	45
3.2.3.2	Software requirements	46
3.2.4	Phase 4: Testing	46
3.3	Chapter Summary	48
CHAPTER FOUR: RESULTS AND ANALYSIS		49
4.1	Objective 1: To gather and analysed the requirements for Malay gamelan music persuasive mobile application	49
4.1.1	Interview questions and answer	49
4.1.2	Software Requirements Specification (SRS) documentation	50
4.2	Objective 2: To design a persuasive mobile application for Malay gamelan music	52
4.2.1	The steps to persuasive design technology process	52
4.2.2	Sketching	54
4.2.3	Wireframing	54
4.2.4	Software Design Documentation (SDD)	54
4.3	Objective 3: To develop a persuasive mobile application for Malay gamelan music.	54
4.3.1	Tunneling principle	55
4.3.2	Tailoring principle	56