UNIVERSITI TEKNOLOGI MARA

VIRTUAL TOURISM: DEVELOPMENT OF AUGMENTED REALITY PORTAL FOR SARAWAK CULTURAL VILLAGE MOBILE APPLICATION

ABDUL FAKHRUR RADZI BIN A.SAMAD

BACHELOR OF INFORMATION TECHNOLOGY (Hons.)

DECEMBER 2018

ACKNOWLEDGEMENT

All praises and thanks to God who has guided us, Alhamdulillah I was able to finish my research in time. Words cannot express my gratitude towards my supervisor, Mudiana binti Mokhsin@Misron for her patience, humble supervision in giving guidance and advice I had received from her throughout the course of this proposal. I would like to extend my thanks to my final year project, Dr Emma Nuraihan binti Mior Ibrahim for giving me golden opportunity and positive encouragement which also help me in doing a lot of research in this project. Moreover, I express deep and sincere gratitude to my examiner, Dr Jasber Kaur for her guidance and suggestion that have contributed immensely to the evolution of my ideas on the project.

I would like to give my special thanks to my family especially my father and mother that supported patiently with love that enables me to complete this proposal. Last but not least, I would also like to heartily thank to all my friends who have given help during the development of this project.

ABSTRACT

Nowadays, the advancement of new interactive way presenting information to enhance the user experience in viewing Augmented Reality Portal in tourism. The best way to attract their interest not only by watching and reading the brochure but by adding interactive element into the application such as using 3D model visualization, which is to provide virtual world experience to users. The approach that is taken for this project is by creating the application interactively with the implementation of Augmented Reality Portal. The objective of this project are to identify the user requirements, design the interface and function and hence develop Augmented Reality Portal for Sarawak Cultural Village. For this project, the 3D model focuses on the village view which is Bidayuh Long House. The prototype of the project is executed on Android platform mobile devices. Target user is open to all tourists that interested in knowing the historical behind the Sarawak Cultural Village. The methodology that is used and applied in this project is Design Thinking Methodology that practice empathise, define, ideate, prototype, and test phase. This methodology is suited and applicable to use as it provides a solution based approach to solving problems. For the 3D model view, users can experience different perspective of the village and feels the environment around as it feels like to be in the physical world of the village. In spite of the fact that the current applications have their own advantages, for further advancement, improvement are required so it can become a better application.

Keywords: 3D modelling, Augmented Reality Portal, Design Thinking Model, Sarawak Cultural Village, Tourism.

TABLE OF CONTENTS

CONTENT	PAGE
SUPERVISOR APPROVAL	ii
STUDENT DECLARACTION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	V
TABLE OF CONTENTS	vi
LIST OF FIGURES	X
LIST OF TABLES	xii
CHAPTER ONE: INTRODUCTION	
1.1 Project Background	1
1.2 Problem Statement	3
1.3 Project Objectives	6
1.4 Project Scope	6
1.5 Project Significance	7
1.6 Organization Of Report	8
CHAPTER TWO: LITERATURE REVIEW	
2.1 Augmented Reality	9
2.1.1 Definition of Augmented Reality	9
2.1.2 Definition of Augmented Reality Portal	10
2.1.2.1 ARCore	11
2.1.3 How Augmented Reality Works	11
2.1.4 Categories of Augmented Reality	12
2.1.4.1 Marker-Based Technique	12
2.1.4.2 Markerless Technique	13

CHAPTER 1

INTRODUCTION

Chapter Overview

This chapter provides an understanding of research background, problem statement, objectives, scope and significances of the project. The background of the project gives an overview to readers on the details of the project. Moreover, the problem statement refers to the current issues identified consistent to the need of the project. Besides, the objectives of the project stated the target user which is tourist and outcome of the project. Lastly, scope is justified and significances of the project are discussed.

1.1 Project Background

Tourism is the main and one of the biggest industry contributor in the world economy today. This sector has been recognized as one of the main important service industries in the world (Schumacher, 2007 as cited in Md. Anowar Hossain Bhuiyan, Chamhuri Siwar & Shaharuddin Mohamad Ismail, 2013). Tourism are important as it helps a country in terms of economic and help in building the relationship between two countries. Tourism is generally used to expand the monetary upgrade of certain country. The Third World countries encourage tourism development for their economic advancement (Hall, 1995). Government considers tourism as a tool to development of a country. The tourism of Sarawak focuses enhancing facilities and has plenty to offer those looking for a slightly less regular travel experience. With its rich rainforests, abundant untamed life and diverse ethnic groups, it brings out the uniqueness of Sarawak. The tourism Sarawak use the brochures that is including various types of exciting tourist destinations such as heritage, beaches and rainforest places which is suitable for adventure, exciting choices of entertainment, places for shopping and lastly