THE CONSERVATION OF MALACCA HISTORICAL SITES USING VIRTUAL REALITY TECHNOLOGY

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THE CONSERVATION OF MALACCA HISTORICAL SITES USING VIRTUAL REALITY TECHNOLOGY

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This report is submitted in partial fulfilment of the requirements for the Bachelor of Computer Science (Interactive Media)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2014

DECLARATION

I hereby declare that this project report entitled

THE CONSERVATION OF MALACCA HISTORICAL SITES USING VIRTUAL REALITY TECHNOLOGY

is written by me and is my own effort and that no part has been plagiarized

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STUDENT   : _____   Date: _____

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SUPERVISOR: _____   Date: _____

(MOHD HAFIZ BIN ZAKARIA)

DEDICATION

First of all, this thesis is dedicated to almighty Allah S.W.T. Then I dedicated to my beloved parents especially my mother Wan Zainab @ Wan Fatimah binti Wan Idris and of course my beloved family for their endless love, always give a moral support and always keep remind me to strive towards anything come out in my life including in the process of completing this project. They always taught me to keep fighting until the end and always think positive all the time. Not forgetting to entire person who involves during the process of completing the project as well.

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In the way to completing the project, I need to face many challenging but as long as we have our own mission, target and determination in completing every works giving towards us, everything will move smoothly like in the planning and how hard that woks is pushing on you, if you are believe in yourself, you can do it well, no matter how. Just like this project I manage to complete it so I do my best.

ABSTRACT

(The Conservation of Malacca Historical Sites Using Virtual Reality) is an application specific for tourist and adult person who want to explore more about historical of Malacca. This project also is one of the first steps in the way to make some conservation for the old and ancient heritage in our country and for this project we highlight the area of Malacca historical as the main place. Moreover, for this project I would like to introduce the new technology and that is one of the best technology using in others country but not in Malaysia which is Virtual Reality (VR). Virtual reality (VR) is a technology that allows users to interact with an environment that is simulated by computer (computer-simulated environment), a range that actually copied or really an environment that only exists in the imagination. Virtual Reality environment at this time generally serves the visual experience, which is displayed on a computer screen or through a viewer stereoscopic; some simulation results must include additional information, such as sound through speakers or headphones. I believe that this project will be the best project in the way to make the conservation of Malacca historical sites because as we know, there is no product of application like VR that they were develop in the productivity of conservation. Majority, most of the users and tester are happy and convenient in using this application because they will learn something new from that and for sure this application will help them to know more about Malacca historical without need to go to the real places. The flow of the application and also the instruction given will help them to understand and used that kind of application well. But there is still need the improvement so far to enhanced and make the application become very well in the future.

ABSTRAK

(The Conservation of Malacca Historical Sites Using Virtual Reality) adalah sebuah aplikasi khusus untuk orang dewasa dan pelancong yang ingin meneroka dengan lebih mendalam sejarah Melaka. Projek ini juga merupakan salah satu langkah pertama untuk usaha pemuliharaan warisan lama dan purba di negara kita. Projek ini saya spesifikkan kawasan sejarah Melaka sebagai tempat utama. Selain itu, untuk projek ini saya ingin memperkenalkan teknologi baru dan ianya merupakan salah satu teknologi terbaik yang telah digunakan di negara lain tetapi tidak di Malaysia iaitu Realiti Maya (VR). Realiti maya (VR) adalah teknologi yang membolehkan pengguna untuk berinteraksi dengan persekitaran yang simulasi oleh komputer (persekitaran komputer simulasi), persekitaran yang sebenar di terjemahkan semula atau persekitaran yang hanya wujud dalam imaginasi. Persekitaran Realiti maya pada masa ini secara umumnya berfungsi dalam mendapatkan pengalaman visual yang dipaparkan pada skrin komputer atau melalui stereoskopik dan beberapa keputusan simulasi mesti termasuk maklumat tambahan, seperti bunyi melalui pembesar suara dan sebagainya. Saya percaya bahawa projek ini akan menjadi projek yang terbaik dalam proses untuk membuat pemuliharaan tempat bersejarah di Melaka kerana seperti yang kita tahu, tidak ada produk dalam bentuk usaha pemuliharaan seperti VR mahupun dalam bentuk aplikasi lain yang dilakukan demi menjaga dan mengekalkan khazanah dan warisan lama. Majoriti, pengguna gembira dan mudah menggunakan aplikasi ini kerana mereka dapat belajar sesuatu yang baru dan aplikasi ini akan membantu mereka untuk mengetahui lebih lanjut mengenai sejarah Melaka tanpa perlu pergi ke tempat-tempat yang sebenar. Perjalanan program aplikasi ini serta arahan dalam mengendalikan aplikasi yang diberikan membantu mereka untuk memahami dan menggunakan aplikasi sebaik mungkin. Tetapi masih perlu ada peningkatan serta pembaikkan bagi memastikan aplikasi ini menjadi lebih baik dan sempurna untuk kegunaan di masa akan datang.

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LIST OF ABBREVIATIONS

2D	-	Two Dimensional
CD	-	Compact Disk
ICT	-	Information and communications technology
VR	-	Virtual Reality
CD ROM	-	Compact Disc, read-only-memory
IT	-	Information Technology
WAV	-	Waveform Audio File
AIFF	-	Audio Interchange File Format
MP3	-	Moving Picture Experts Group Layer-3 Audio
PSM	-	Projek Sarjana Muda
ASCII	-	American Standard Code for Information Interchange
BMP	-	Bitmap
VGA	-	Virtual Graphics Arrays
ppi	-	Pixels Per Inch

dpi	-	Dots Per Inch
PNG	-	Portable Network Group
JPEG	-	Joint Photographic Experts Group
AI	-	Adobe Illustrator
PSD	-	Adobe Photoshop
MIDI	-	Musical Instrument Digitization Interface

CHAPTER I

INTRODUCTION

1.1 Project Background

The application that I will develop is a virtual reality application (VR). This product is for entertainment and in order to make it as main attraction of the tourists and by using this technique of virtual reality will give some innovation in this era technology. To develop this project, we need to use specific software that related to virtual reality application which is Easypano Tourweaver and for this project I used Tourweaver 7.00 Professional Edition. The main objective of this project is to give convenience for them especially for tourist to explore more about Malacca historical through virtual reality application. In other word, by using concept of virtual reality will give an advantage for them to get more information about our country especially related to historical and of course they can get more details information about the Malacca historical directly and at the same time this virtual environment allow a user to interact with a computer-simulated environment where the user experience is real or imagine one. Moreover, this is one of the effort in the way to make some conservation for our ancient and old heritage in our country.

Virtual reality (VR) is a technology that allows users to interact with an environment that is simulated by computer (computer-simulated environment), a range that actually copied or really an environment that only exists in the imagination. Virtual Reality environment at this time generally serves the visual experience, which is displayed on a computer screen or through a viewer stereoscopic; some simulation results must include additional information, such as sound through speakers or headphones.

According to the research, nowadays mostly people are still blurring about the technology of virtual reality (VR) especially in our country because there is no information or explanations about that. Although in a real world, virtual reality applications is a one of the best application using by others country as global marketing arena and platform to carried out extensively for the public to develop an application projects, particularly in the field of multimedia but not in Malaysia because we still not using Virtual Reality (VR) as one of the main platforms in marketing or as a tourist attraction. For example if they want to get information about some places in Malaysia. Let say about the Malacca historical, they only can get information like see the picture and maybe a bit information about that via the internet or any other resource.

1.2   Problem Statements

Virtual reality is one of the technology that allow user to interact with an environment that is simulate by computer(computer-simulated environment), a range that actually copied or really an environment that only exists in the imagination. According to the research, nowadays mostly people are still blurring about the technology of virtual reality (VR) especially in our country because there is no information or explanations about that. Although in a real world, virtual reality applications is a one of the best application using by others country as global marketing arena and platform to carried out extensively for the public to develop an application projects, particularly in the field of multimedia and also they used it especially in field of medical but not in Malaysia because we still not using virtual reality (VR) as one of the main platforms in marketing or as a tourist attraction. For example if they want to get information about some places in Malaysia.

Let say about the Malacca historical, they only can get information like see the picture and maybe bit information about that via the internet or any other resource. There is no virtual reality (VR) application for some conservation product such like conservation of Malacca historical and some other historical places in our country.

1.3   Objectives

- To investigate the implementation of virtual reality technique in conservation of Malacca historical.

- To develop an application which is about Virtual Reality (VR) for Malacca Historical and one of the way as a platform of conservation the old and ancient heritage in Malacca.

- To evaluate the effectiveness and persuasiveness of this virtual reality will help in conservation of Malacca historical.

1.4   Scope

Scope are define based on the flow of the application which is defines what is and what is not for this application. Based on this application, two types of scope were determined. There is user and function or benefit of the application.

1.4.1 User

This product is developed and focus for tourist and adult but more to tourist because this application can help them to discover more about Malacca historical using virtual reality application (VR), which is one of the technology that allow user to interact with an environment that is simulated by computer (computer-simulated environment). This application is a range that actually copied or really an environment that only exists in the imagination. At the same time this virtual environment allows a user to interact with a computer-simulated environment where the user experience is real or imagine one.

1.4.2   Function

In this product, that will have a few functions on the interface of the application that are menu button, map button, sound button, and hotspots button. For menu button, there are many functions inside the button such as play button, stop button, pause button, next and back button and also zoom in and zoom out button. Hotspots are clickable link areas within a panorama can assign an action to a Hotspot, such as opening a new panorama, slideshow, URL, etc.

In a virtual tour there are various frames which can be set at arbitrary position. You can direct the virtual tour by editing walkthrough of frames to make it play automatically in time sequence just like a video.

1.5   Project Significance

- To help the user to understand about the Malacca historical and explore it using the new technology that we call as virtual reality (VR) application.

This project might be used by other people not only for tourist but in this project our target user

is tourist. The user will recognize and understand about the concept of virtual reality (VR) in order to know briefly about the Malacca historical through it. These findings will help us to understand our history and this is the first steps needed to be taken in the future to preserve items of historical values. On other hand, we can say that this is one of the ways to make it as main attraction in tourism Malaysia.

- Using the new technology that we call as virtual reality (VR) technology and make it as a platform of conservation some of the ancient and old heritage in our country.

This project is created using the technology of virtual reality. It used computerized system and it can give a new experience for those who are not being familiar with this software. In other words, to give a realistic 3-dimensional form where the user can interact like a real situation through computers.

1.6   Expected Output

The expected outcomes for this project is to produce something difference by using virtual reality (VR) which is about the Malacca historical and by developing this project will give some advantage for us especially for those tourists in exploring the Malacca by using virtual reality (VR) which simulation can help them to feel an experience like in such a place. It is expected that through the process of gathering information on the probable existence of the Historical Melaka, related issues regarding conservation and heritage management in Malaysia will be highlighted. These findings will help us to understand our history and this is the first steps needed to be taken in the future to preserve items of historical values.

1.7   Conclusion

Based on the overall of this chapter is explained about the importance and a bit about the function of the application for the user and what is the benefit from that. It was explained the background in detail, list down the importance of the project and significant to user. Besides that, this chapter also covered of the project scope and states the objectives of the project development in detail and completes explanations about that. The next chapter will be the literature review which is to support the project title. In the literature phase will be making some comparison and state the methodology that will be used in the project development.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHADOLOGY

2.1   Introduction

Literature review mostly is about the details supported to the project title. Literature review also describe about what has been published on a topic by accredited scholars and researchers. The research from the existing product will be as a guidance to create a new product based on the title chosen. Besides that, in the process of conducting a research, author need to analyse all the data such as data from internet, person or maybe from the books. So from that the author can make some comparison based on the approach, methodology and technique that being used from the existing product. Literature can be an opinion from the author about the topic chosen and also opinion about the topic that has been research.

This project will introduce the concept of Virtual Reality (VR) which is about Malacca historical. The uniqueness of Melaka is the main attraction of the tourists and by using this technique of Virtual Reality will give some innovation in this era technology. The main objective of this project is to give convenience for them especially for tourist to explore more about Malacca historical through virtual reality application. In other word, by using concept of Virtual Reality will give an advantage for them to get more information about our