POLITEKNIK KOTA BHARU (PKB) E-BROCHURE: A VR APPROACH

A project submitted to the Graduate School in partial fulfillment of the requirements for the degree Master of Science (Information Technology), Universiti Utara Malaysia

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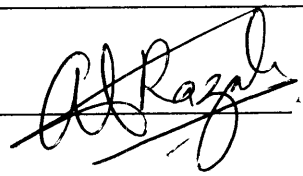
(Signature) : 

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ABSTRAK

Kajian ini bertujuan membangunkan brosur elektronik atau e-brosur untuk Politeknik Kota Bharu (PKB) dengan menggunakan pendekatan teknologi Realiti Maya atau Virtual Reality (VR). Dua teknologi realiti maya yang digunakan dalam pembangunan aplikasi ini ialah Realiti Maya Panorama atau Panorama VR dan Enjin Permainan atau Game Engine. Fasa pertama ialah pembangunan e-brosur PKB menggunakan teknologi Realiti Maya Panorama seperti QuickTime Virtual Reality (QTVR). Perisian seperti Ulead COOL 360 digunakan sebagai alat bagi percantuman imej-imej, Manakala perisian VR Worx 2.0 sebagai penghubung nod-nod, Macromedia Flash 5.0 untuk menghasilkan animasi dan Macromedia Director 8.0 untuk menggabungkan fail mov, teks, imej, bunyi dan animasi ke dalam satu fail yang boleh dijalankan. Fasa kedua ialah pembangunan makmal komputer PKB secara maya menggunakan enjin permainan Half-Life. Dalam fasa ini peta editor atau map editor QuArK telah digunakan dalam proses pemodelan, aplikasi tekstur dan proses kompilasi peta atau map compilation. Hasil kajian menunjukkan bahawa aplikasi VR boleh dibangunkan pada komputer peribadi yang berkos murah dengan persembahan yang realistik.

ABSTRACT

The purpose of this research is to develop an electronic brochure (e-brochure) for Politeknik Kota Bharu (PKB) using Virtual Reality (VR) approach. The development of the application involves two VR technologies. The first is the development of PKB e-brochure using Panorama VR technology. The research uses QuickTime Virtual Reality (QTVR), a photography-based VR that enables a user to explore panoramic spaces and examine objects by rotating them to any viewpoint using a computer mouse. The authoring software like Ulead COOL 360 was used to stitch the images, VR Worx 2.0 to link hotspots, Macromedia Flash 5.0 to create animations and Macromedia Director 8.0 to compile the movies, texts, images, sound and animations into a single file. Then followed by the second phase, which is the development of PKB Computer Lab using Half-Life Game Engine technology. The QuArK map editor was used to create the model, applying the textures and compiling the map. The result has shown that a good VR application could be developed at a lower cost desktop computer system with a realistic representation.

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LIST OF ABBREVIATIONS

BSP	Binary Space Partitions
CAD	Computer Aided Design
CSG	Constructive Solid Geometry
PKB	Politeknik Kota Bharu
QTVR	Quick Time Virtual Reality
RAD	Radiosity
VIS	Visibility
VR	Virtual Reality
VRML	Virtual Reality Modelling Language
WWW	World Wide Web

CHAPTER 1 : INTRODUCTION

Virtual Reality (VR), whilst currently a hot contemporary topic, is more than just fiction. In the past decade VR systems have been developed for many different purposes. As computers become more powerful, they have the ability to design more realistic VR worlds. VR can be used as an alternative method of training because it can give the individual experience beyond training methods currently in use.

Many universities and other educational institution are now using panorama VR technique to show their products, facilities, activities, courses offered and what their campus looks like. For instance, the University of Sheffield Campus (1999) using QuickTime VR panorama to view their campus facilities (see figure 1-1). This provides these institutions with a powerful tool as it enables more people to view the campus and its facilities without visiting it. By incorporating "hotspots", the movies become a powerful education and advertising tool.

Figure 1-1. University of Sheffield PC Teaching Laboratory (QTVR Movies)

The contents of the thesis is for internal user only

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