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**“Urban Planning: The Potential for Developers and Planners to Use
Virtual Reality Techniques.”**

A dissertation submitted to the Faculty of Information Technology

In partial fulfillment of the requirements for the award of

Degree of Master of Science (Information Technology)

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By

Ganapreeta Renunathan Naidu

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ABSTRACT

Application of virtual reality in many areas can effectively drive real-time operational decisions and resolution. Virtual reality simply covers a vast range of aspects such as medicine, engineering, history, entertainment and almost any field comes across our mind. With such exposure into this new era, this attempt of carrying out a research in this topic has been taken. This study involves the research of urban planning with a main feature of Virtual Reality in it, specially created as top notch for town planners to have a realistic visualization while working on urban planning. It gives them revelation of a fully developed town by also giving a feel of a real environment, the idea of threats, effects and recovery plan should any catastrophe occur and the amenities or facilities provided in that area. At the end of this research, the development of a prototype virtual reality system is produced for aiding town planners in solving their daily routine problems. The main aspect of the program is to help town planners to visualize and detect problem prone areas before a building or construction is structured. Also as said, the land structure of any particular area can be studied and justified to suite the type of structure to be set so that flood, landslides or any mishap that most likely to happen can be avoided or controlled with backup recover plans . The backbone of the prototype system implemented using two programming language VRML and Java. The image and animation has been developed using Flash 8.0 and Adobe Photoshop 9.0.

ABSTRAK

Minat terhadap kemungkinan kesan sosial teknologi baru seperti realiti maya telah bertambah menyebabkan beberapa perubahan penting dalam kehidupan dan aktiviti manusia terbentuk. Realiti maya adalah persekitaran yang dihasilkan oleh komputer dimana teknologi dan hasil kajian di subjek in telah berkembang dan menerima penemuan baru, lagi canggih dari masa ke semasa. Teknologi realiti maya telah berjaya di pelbagai industri di mana ia mengambil kira keperluan semua aspek, untuk meniru dunia fizikal dengan teliti adalah susah tetapi boleh dibuat secara teknikal, untuk meniru pandangan/imaginasi seseorang ke tahap yang sama adalah jauh lebih rumit.

Kertas kerja ini menerangkan suatu strategi untuk memenuhi keperluan jabatan perancangan bandar dengan menggunakan kaedah teknologi realiti maya dimana satu prototaip sistem akan dibina. Ahli perancang, pegawai dan jurutera ukur dapat menggunakan prototaip sistem kaedah teknologi realiti maya yang sedang berkembang dan mencecah penemuan baru di abad ke 21 yang serba moden and canggih, dimana ia dapat menghasilkan penggambaran pandangan realistik sesuatu penempatan yang sedang dirancang. Mereka juga perlu mengaplikasikan kaedah teknologi realiti maya yang berkebolehan mengecam dan dignos permasalahan diperingkat awal kawasan perancangan agar . Ini secara langsung akan membolehkan para jurutera untuk membuat pengubahsuaian atau membetulan yang sewajarnya secepat yang mungkin untuk meneruskan kegiatan perancangan. Tulang belakang system ini dibina menggunakan dua pengaturan VRML dan Java manakala animasi telah dirakamkan melalui perisian Flash 8.0 and Adobe Photoshop 9.0.

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CHAPTER 1

INTRODUCTION

This chapter discuss about the research and project contexts. This will cover the overview of the study, research motivation, the problem statement, objective, scope, the significance of the study, summary.

1.1 Overview

Virtual Reality has been described and defined in many ways by different experts as Brooks (1999) said “an experience in which the user is effectively immersed in a responsive virtual world”; “Don’t think of that thing as a screen, think of it as a window, a window through which one looks into a virtual world. The challenge to computer graphics is to make that virtual world look real, sound real, move and respond to interaction in real time, and even feel real.” Ivan Sutherland (1965); Where as Aukstakalnis and Blatner (1992) suggested that virtual reality is a way for human to visualise, manipulate and interact with computers and extremely complex data.

Its depth would be seen in many more opinions and imagination as it is a scope beyond limitations. The idea of Virtual Reality began well before the advent of the computer; the history of Virtual Reality is older than most people think. This subject has grown slowly yet surely and emerged into our life’s in many areas as Medical, Engineering, Education, History, Real estate, Town Planning and more.

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