Parshvanath Charitable Trust's
A. P. SHAH INSTITUTE OF TECHNOLOGY, THANE
(All Programs Accredited by NBA)
Department of Information Technology

Virtual Campus Walk-through

Group No. 4

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Contents

Introduction

- VR is able to immerse you in a Computer-Generated world of our own making. With VR, we can explore any Uncharted Territory of the Human Imagination.

- Virtual Campus refers to accumulation centre that provides information which allows students to access the college campus online. Building a virtual campus acts as great tool towards providing insights to real environment as well as for improvised teaching.

- This involves building a virtual tour for the students by combining all kinds of digital campus resources as well as integrating teaching, laboratory services management and other related activities.

- Virtual campus tour is an effective tool to provide management planning, effective consumption of college resources.

- We present a three dimensional model to the users of our system.

Objectives

- To provide the advantage of virtual roaming .
- Gives the users a professional feel and look.
- Display correct information about that direction in which the user goes.
- Provide a collaborative virtual reality environment for virtual tours alternative to traditional real Life tours for college campuses.

Problem Definition

- To create a Virtual Reality application for the institute to introduce students newcomers to the institute with a Virtual Model of the college and make them familiar with the facilities available.
- To provide a real life walk-through of the campus while being stationary with VR ready devices.

Proposed Technology Stack

Software Requirements:

Unity 3D
Blender :-

- Texture Mapping- UV Mapping
- Rendering Engine- Eevee and Cycles

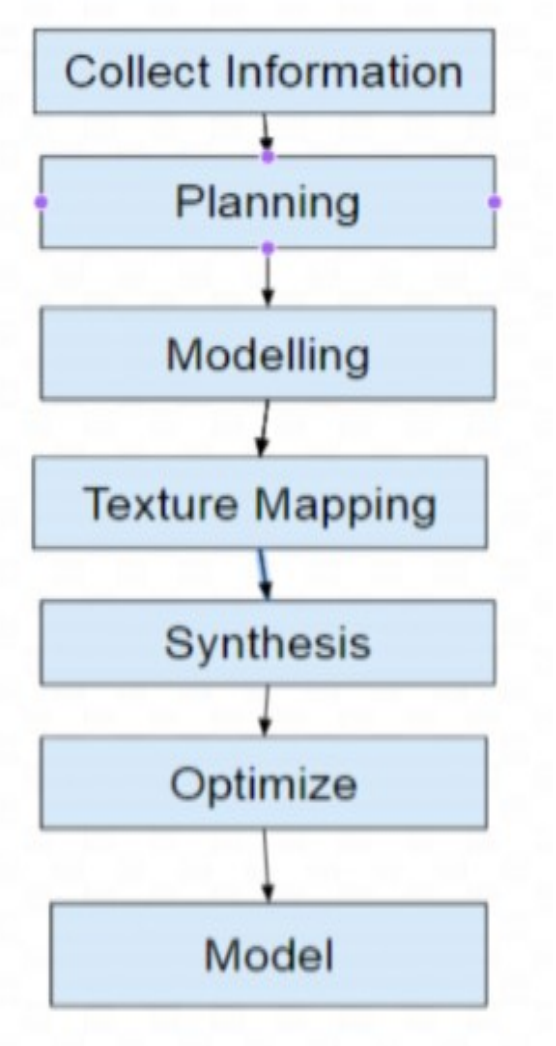
Hardware Requirements:

VR Headset
VR Controllers

Review Suggestions

- To add Proposed Technology Stack content in slide and report.
- To define the texture mapping tools and rendering engine used in project.
- To present a prototype or some implementation of project.

Phases of the Project



Phases of the Project

- **Collect Information:** Firstly we are going to collect information about the whole campus which includes the information about the campus surroundings and also the information about the interior of the college premises for example the number of classrooms per floor ,the location of the canteen,library, staff room etc. and most importantly the outer structure of the college.

- **Planning:** After gathering the information we will do planning based on the information collected and decide about how the tasks are going to performed sequentially in order to achieve the best possible outcome. Feasibility and budget of the project will also be decided and most importantly time management will be done accordingly.

Phases of the Project

•**Modelling:** Based on the information collected about the campus, modelling will be done of the gathered parameters so that the user could feel the environment while walking through the campus. For modelling purpose software tools like blender ,unity 3d and cinema 4d are going to be used.

Phases of the Project

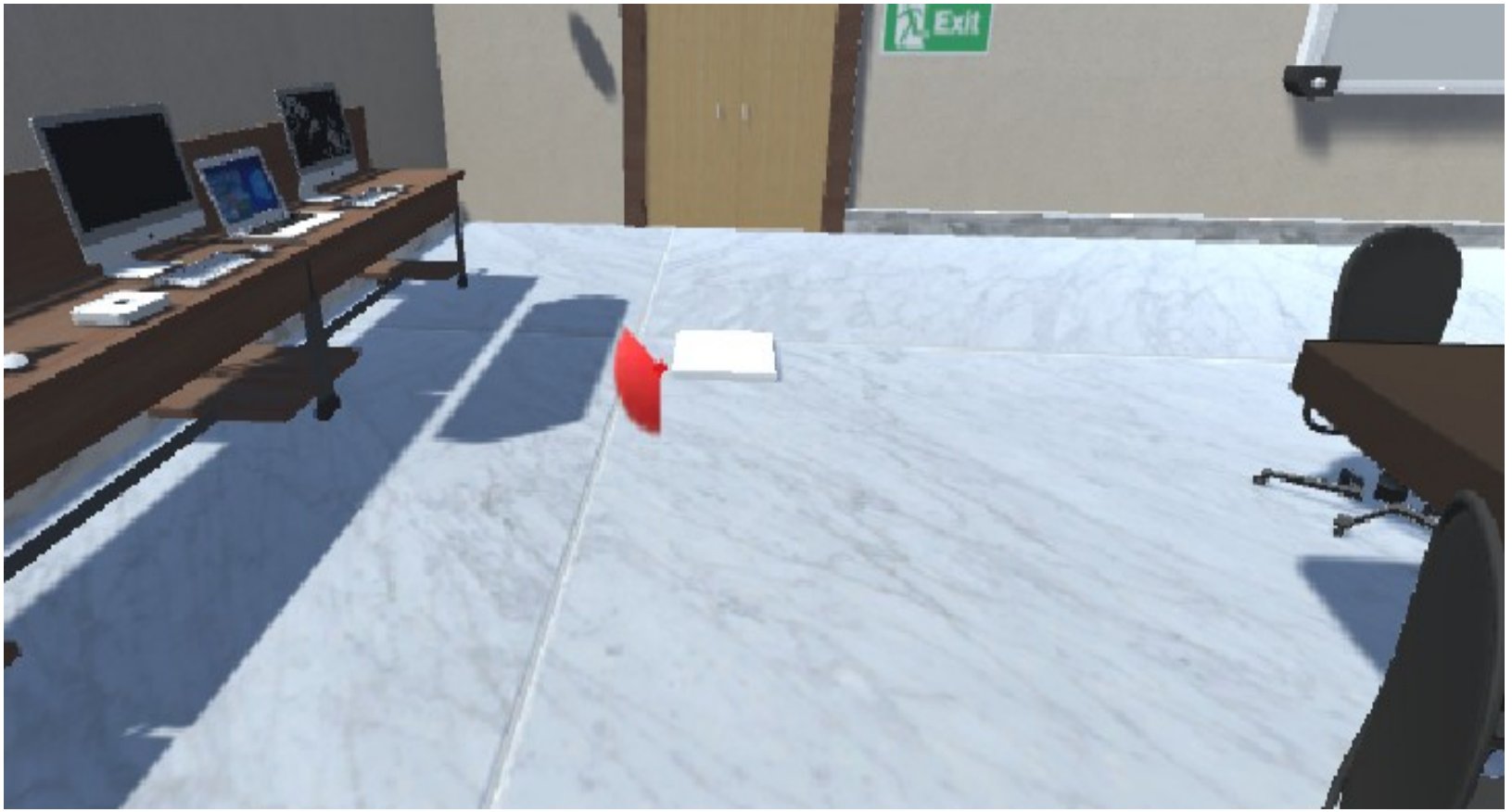
•**Texture Mapping:** Texture mapping is a method for defining high frequency detail, surface texture, or colour information on a computer-generated graphic or 3D.model. So, whatever modelling we had done so far will go through texture mapping in order to provide a realistic view of the environment to the user.

Phases of the Project

•**Synthesis:** Synthesis means the combining of separate elements or substances to form a coherent whole. Therefore what all individual modelling that has been done will be combined together to build the project as a whole. This all will be done by using unity3d. All the object files will be imported in unity 3d and then will be combine.

Phases of the Project

•**Optimize:** Optimizing means increasing the efficiency and making the best and effective use. Optimization implies manage intentional change and continuous improvement. After the synthesis process is completed optimization process will begin.



Phases of the Project

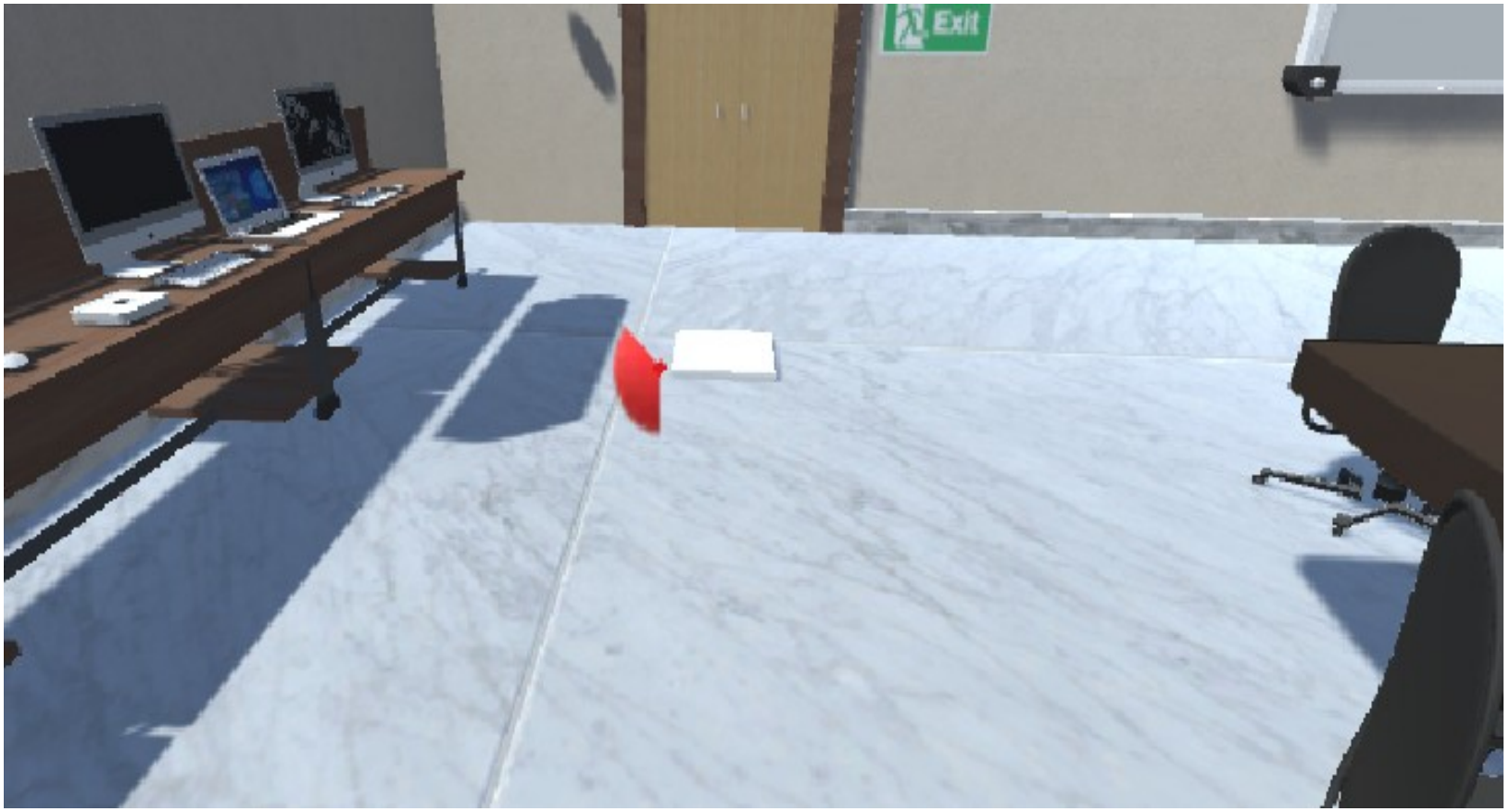
•**Model:** Therefore after optimizing all the work that we have done, the final model will be saved and displayed to the user of the system which is nothing but a virtual campus. By using the keyboard the user can walk through the campus or the user can also have virtual reality view of the campus through google cardboard or also can use oculus instrument.

Prototype Design Demonstration

Scene of room 317

Prototype Design Demonstration

Implemented the teleporting tiles to teleport around the scene to provide a real life walk-through.



Prototype Design Demonstration

Implemented the information panel popping up on seeing on a specific object in a scene.

Prototype Design Demonstration

Implemented the entry and exit mechanism to enter and exit a room in scene.

Plan of Paper Publication

We are planning to present a paper in IEEE International Conference. We are done with the abstract, introduction and literature survey.

Thank You!