A Synopsis on

VR Campus Walk-through

Submitted in partial fulfillment of the requirements
of the degree of

Bachelor of Engineering

in

Information Technology

by

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2019-2020

CERTIFICATE

This is to certify that the project Synopsis entitled **"VR Campus Walk-through"** Submitted by **"Mandar Kumbhar (17104017), Rutvik Lathiya (17104054), Sahil Naik (17104054)"** for the partial fulfillment of the requirement for award of a degree **Bachelor of Engineering** in **Information Technology** to the University of Mumbai,is a bonafide work carried out during academic year 2019-2020

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Declaration

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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Abstract

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 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. Our project makes use of software tools like Blender, Cinema 4D and Unity 3d to blend fundamental object models and create a three dimensional view for the object constructed during modelling.

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.

Literature Review

- Ziguang Sun, Qin Wang and Zengfang Zhang, "Interactive walk-through of the virtual campus based on VRML," Computer-Aided Industrial Design and Conceptual Design, 2008. CAID/CD 2008. 9th International Conference on, Kunming, 2008, pp. 456-458.

- N. Katz, T. Cook and R. Smart, "Extending Web Browsers with a Unity 3D-Based Virtual Worlds Viewer," in IEEE Internet Computing, vol. 15, no. 5, pp. 15-21, Sept.-Oct. 2011.

- J. Jie, K. Yang and S. Haihui, "Study on the Virtual Natural Landscape Walk-through by Using Unity 3D," Computational and Information Sciences (ICCIS), 2013 Fifth International Conference on, Shiyang, 2013, pp. 1-4.

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.
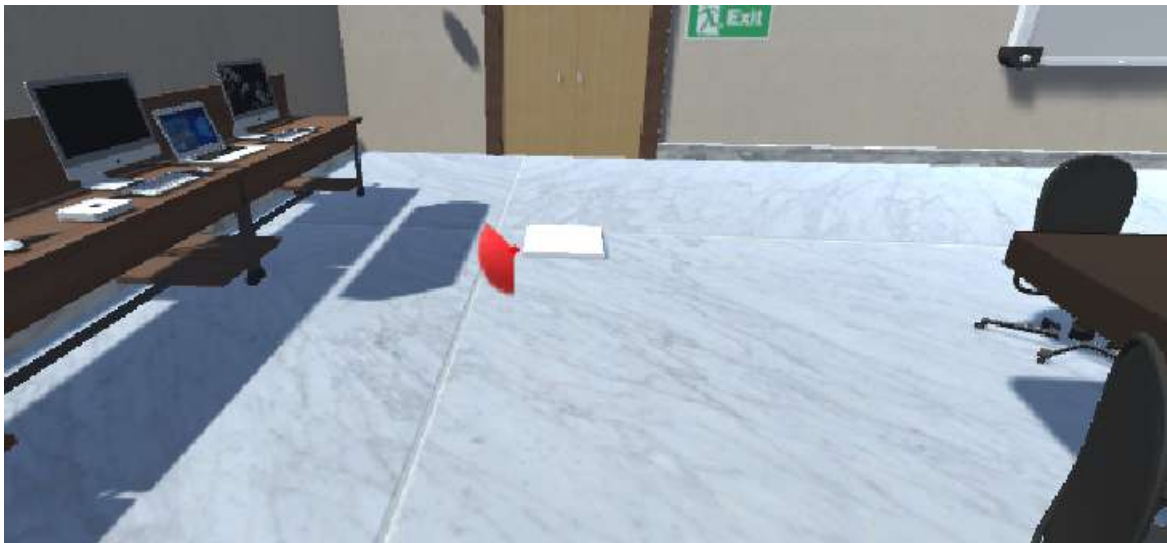
Phases of Project
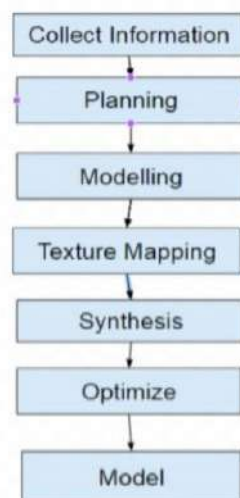
Design and Implementation

Scene of Room 317

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

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

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

Summary

Through the creation of a virtual campus the user can walk-through the campus by sitting at one place in reality. In future we can add more features to our project with respect to security and can be uploaded on any college/school website who want their users to have a look of their campus virtually. Thus, we learned about various tools and technologies like Unity3d, blender and Cinema 4d that is used for modelling and walking through a virtual campus and making the user feel like as the virtual world is in the reality.

References

[1] M. Kinateder et al., "Virtual reality for fire evacuation research," Computer Science and Information Systems (FedCSIS), 2014 Federated Conference on Warsaw, 2014, pp. 313-321.

[2] I. Heldal and M. Roupé, "Exploring object representations: Virtual reality models for environmental planning projects," Virtual Systems and Multimedia (VSMM), 2012 18th International Conference on, Milan, 2012, pp. 149-156.

[3] S. Charles, "Real-time human movement mapping to a virtual environment," 2016 IEEE Region 10 Symposium (TENSYMP), Bali, 2016, pp. 150-154.

[4] M. Farouk, M. Ismail and K. Mustafa, "VR multiple channel authoring with immersive display," 2015 Digital Heritage, Granada, 2015, pp. 389-392.

1 Publication

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