

Virtual Art Gallery

Abhinav Auti, Sharvil Jadhav, Samiksha Warang

1,2,3 Student, Shah and Anchor Kutchhi Engineering College, Mumbai, India

ABSTRACT

In the field of geographic information systems, there are always two ways to obtain 3D virtual reality: one is to use a 2D professional platform such as ArcGIS software to obtain virtual reality through secondary development, and the other is to use a 3D software as a development platform, such as Unity3D, which is typically used for game development. Unity3D is a game engine that can be used to create interactive virtual models and game on a variety of platforms, including the web, mobile devices, and more.

Users can choose their own way to browse and interact in virtual reality thanks to a wide choice of unique modes of operation, play with their imaginations based on their own desires affecting the others by using the designated keys on the keyboard. This paper describes how to create natural landscape walkthroughs using a 3D virtual reality engine. It explains how to make the sky, geography, trees and flowers, and natural water in Unity 3D, as well as how Unity 3D software may be used to create virtual roaming. Finally, it emphasises that the pursuit of a realistic scene is more significant than the scene itself.

2. INTRODUCTION

As Virtual reality (VR) is a technology that allows a user to interact with a computer-simulated environment. Because of its intuitive visual and simple operation, virtual reality is now widely employed in industry and government. Unity3D is a cross-platform game development software that can now fully support Windows XP/Vista/7.

Unity3D supports three scripting languages: JavaScript, C#, and a dialect of Python dubbed Boo. All three are equally fast and interoperable, and they can all make use of the underlying.NET frameworks for virtual modelling. C# is also supported by Unity3d on the Windows platform. We employ Unity3D as the virtual reality development platform in this study. Virtual reality technology can allow visitors to browse virtual museums from the comfort of their own homes.

As a centre for lifelong learning, the virtual museum employs a virtual platform to present users with content that is simple to comprehend. The first step is to redefine virtual museum concepts. The virtual museum's communication strategy should shift from focusing on knowledge dissemination to building an experiential dissemination field. Because the goal of public arts education for the virtual museum is to provide the public with an open and active "dissemination field" through virtual reality technology. So that the audience can not only see the collection, but also have some type of "experience," which could be related to aesthetics, learning, or discovery, as well as entertainment, leisure, and social life.

Unity 3D is a good material management approach. The ocean, mountains, plains, and other natural environments. These models have the following characteristics: a long distance from the virtual view, no necessity for detail, and an emphasis on expression. In Unity 3D, a closed framework comprised of numerous polygons surrounds important scenes at the terrain's boundary to actualize this simulation's direction vision.

3. LITERATURE REVIEW

3.1) A New Method of Virtual Reality Based on Unity3D

Using Art gallery as an example, this research creates a virtual reality system based on Unity3D. The virtual reality technology is extremely realistic and engaging. Users can browse the study area online by downloading a plug-in. They can use the specified keys on the keyboard to choose their own way to browse and participate in virtual reality, and give full play to their imagination according to their own wants without affecting others, thanks to a broad range of customizable mode of operation. It demonstrates that Unity3D can be used in the real world as well as in game production. The virtual reality system can also perform simple spatial analysis such as illumination analysis and distance measurement, as well as query information about the research region. Virtual reality system objects can be viewed from any angle. This will not only improve the

functionality of the virtual reality system, but it will also provide fresh ideas for 3D GIS development.

3.2) Ideas Transforming in the Public Arts Education of Virtual Museum

The study of this research is to see how a virtual museum may effectively use a virtual platform to deliver public arts education. Three concepts must be adjusted in order to fully comprehend the issue of public arts education in the virtual museum. The primary concept for the Virtual Museum is to transform the objective of public arts education from teaching the masses' artistic accomplishment to nurturing the masses' creativity. The second proposal is to transform the public arts education building notion for a virtual museum, moving away from focusing on virtual reality technology and toward generating virtual reality products. The third notion is to modify the public arts education communication concept for the virtual museum, moving away from prioritizing knowledge communication and toward building an experiential dissemination field.

3.3) Study on the Virtual Natural landscape Walkthrough by using Unity 3D

This paper describes how to create natural landscape walkthroughs using a 3D virtual reality engine. It explains how to make the sky, topography, trees and flowers, and natural water in Unity 3D, as well as how Unity 3D software has a quick and convenient advantage in creating virtual roaming. Finally, it emphasizes that the pursuit of a realistic scene is more important than scene optimization under current computer conditions.

Virtual natural landscape; Unity 3D; walkthrough are some of the terms used to describe this project..

The Virtual tour technology is an excellent tool for architectural design and presentation. It combines computer graphics, multimedia, artificial intelligence, multi-sensor technologies, networking, and other features to provide us the tools we need to build a virtual environment. It use a computer to create a simulated environment, allowing people to interact naturally with their surroundings via several sensing devices.

3.4) Virtual Simulation for Lighting & Design Education

The Lighting is a complex and varied subject in architectural and interior design education. Static computer-generated imagery has been found to properly mimic real-world scenes for subjective lighting analysis, as long as the software accurately reproduces particular light distributions. This research describes a prototype system

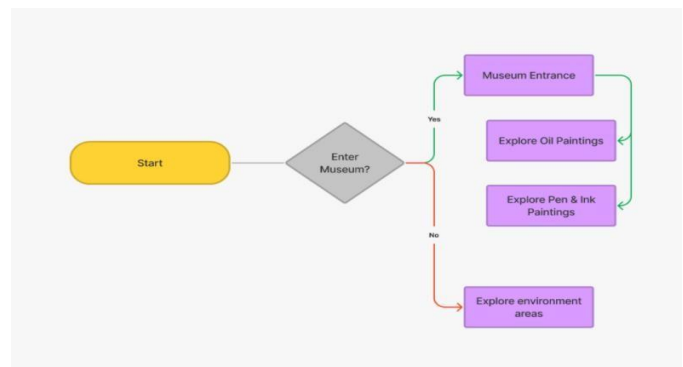
that uses global illumination simulations in a virtual world to investigate an alternate education tool for understanding interior lighting conditions. Modern virtual reality technology allows us to provide a high-quality visual experience while also allowing students to travel across a scene and modify lighting factors interactively. We discuss our experience in developing such an atmosphere as well as student users' subjective interpretations.

4. PROPOSED WORK

4.1) Art Gallery Model

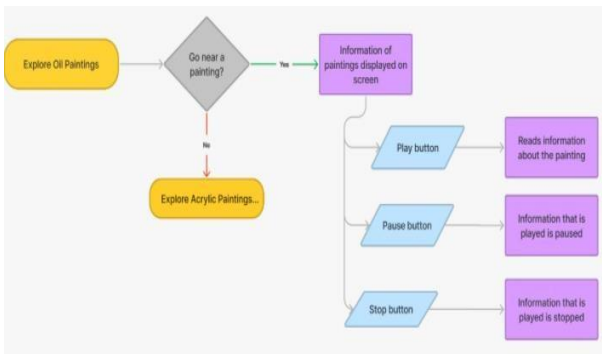
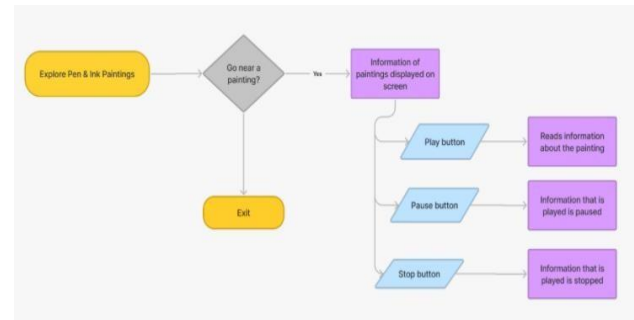
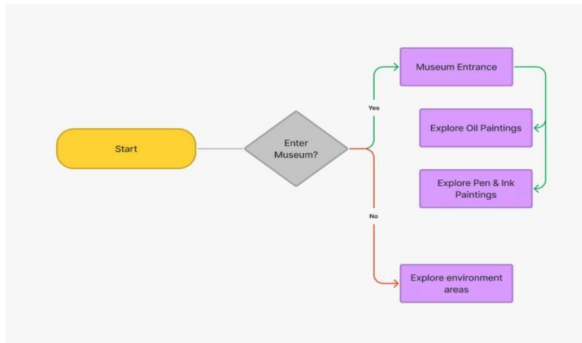
1) Experiencing virtual reality:

A good user interface for an art museum website must direct users to the specific functions they require and assist them in making quick selections while on the site. It is necessary to improve user interaction. Develop a website for an art museum in which the user need a simple app experience during museum visits in order to fully comprehend the art and make the most of his journey. Because the user is too busy to visit the museum, the website also concentrates on the virtual museum's inventiveness.



2) Having a virtual look at Different kinds of paintings:

Once the user enters the art gallery, there comes a welcome scenario with animated video playing on the screen. The model has specific instruction and with the help of those the user can roam around every corner of the art gallery. User can view acrylic, oil, pen & ink paintings with designated key arrows.



4.2) SYSTEM USER INTERFACE

1) Entrance of the Art gallery

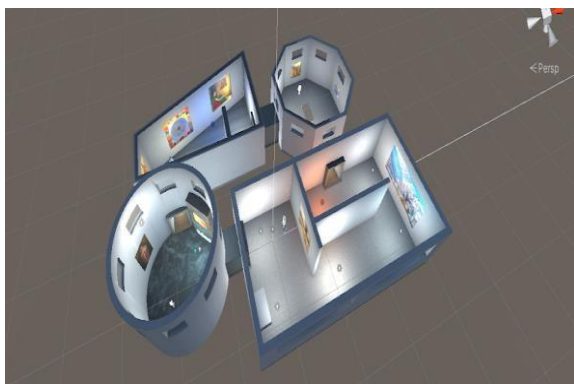
Initial look of the model. The user can enter the art gallery using key arrows.



2) Welcome Gate:



3) Virtual Model creation: His development of the virtual model is been created using UNITY 3D software. It contains specialistic features, also the game engine that supports the development on multiple platforms including web, mobiles, etc. It also provides Virtual reality, virtual environments, simulation, global illumination, realistic lighting and design, education, arts



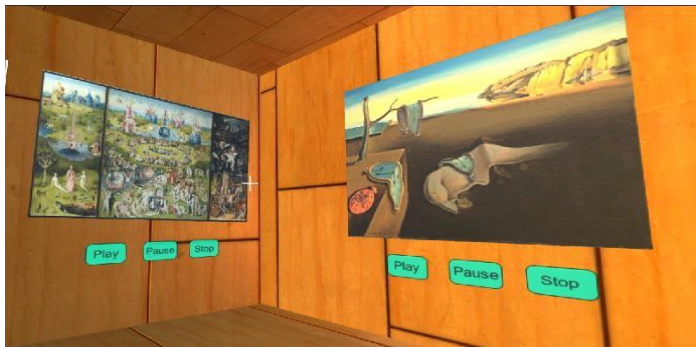
4) Play, Pause & Stop Buttons: The model consists of 3 buttons below very paintings i.e Play, Pause and Stop buttons. Audio format gets played whenever the user gets closer to a particular painting. If the User wants to hear the information of the respective painting, he can just simply click on the buttons as per his requirements.

When the user enters the art gallery, it sees a welcome gate which displays instruction to the user for further decision, where to roam and which paintings to view.



3) Display Buttons

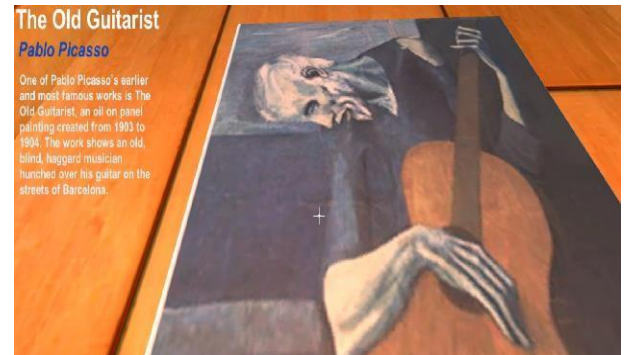
This is a Interface where the user can view the buttons below the paintings and gain the information of the above paintings. The audio will play only when the user gets close towards the paintings and an audio will be played in the background giving the information of that painting.



4) Information Display:



As soon as the user operates the commands, the information about the paintings will displayed on the screen and he/she can attain information and knowledge about the artistic works.

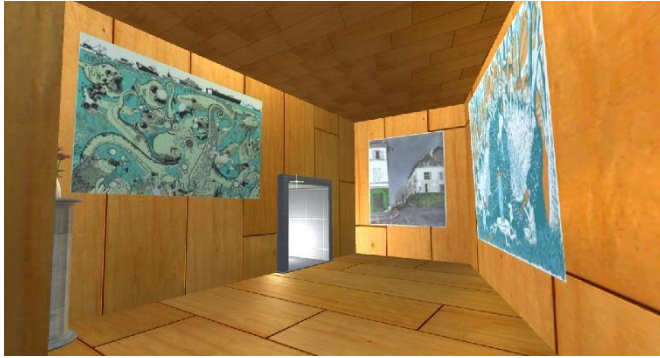


5) Landscape and Lightings:

People are paying more attention to virtual natural landscape walkthrough technology, which creates natural landscape walkthroughs using Unity 3D, describes some common methods of creating sky, landforms, trees, flowers, and water in virtual walkthroughs, and proposes that virtual reality should focus on how to be performed and interactive, with model optimization coming in second when the computer has a higher software and hardware configuration.



A virtual environment for helping interior lighting and design curricula was described. We designed a digital space with numerous light sources that could all be independently manipulated by the user in real-time using global illumination techniques and virtual reality technology. Through the use of virtual reality and global illumination approaches, this research aims to expand and improve those options to the study of interior lighting situations. In lighting and design training, we describe a prototype virtual environment that has been built, refined, and subjectively evaluated.



5. CONCLUSION

The demand for virtual tours has skyrocketed. Virtual tours allow you to explore locations, attractions, museums, and other travel places without having to physically visit them. It's a technologically enabled immersive experience. Many people are unable to visit particular locations owing to a variety of factors including medical issues, economical constraints, and so on. Virtual tours allow such persons to visit destinations without having to leave their homes. One of the barriers that prevent many people from anticipating in virtual tours is the lack of a suitable gadget. Using a campus as an example, this research rates a virtual reality system based on Unity3D. The project created a basic structure or model using Unity- D. We enhanced the model by adding numerous elements and settings such as lighting, colliders, materials, tables, planar photos, movies, and so on. We took the model to the next level by incorporating interactions with Unity-3D scripts written in C#. When the user approaches an art work within an 8-unit radius, information on that art piece is displayed to the user. The information vanishes when you move away from the artwork.

6. REFERENCES

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