

Implementation of 3D Campus View

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ABSTRACT

The proposed system involves creating the 3D model of the SKNSCOE Korti, Pandharpur campus into a virtual model. The model is represented in two ways: A pre-rendered video sequence. The information begins by introducing the project area of virtual urban modeling in general terms. It discusses the modeling process of each building, the problems encountered and what has been done to solve these problems. Lastly, the information discusses the possibilities of future work that can be applied to this project. Appendix A contains the video and real-time application this project has produced. The initial results of reconstructing SKNSCOE Korti, Pandharpur 3D virtual model and future research directions are presented. Unity3D, which is usually treated as game development software, as a virtual reality development platform. The hierarchical approach of geographic information system is adopted in the study area.

The campus is surrounded by plants in many shapes and forms. Increasing overall realism of bushes and trees is another way to increase realism of the virtual environment. The main aim of this project is to make the overall graphical realism of the building models as realistic as possible, and place them in a virtual environment.

1. INTRODUCTION

3D model is nothing but the process of developing a mathematical representation of any three-dimensional surface of an object via specialized software. 3D modeling is the process of creating a 3D representation of any surface or object. 3D computer graphics that use three-dimensional representation of geometric data and that data is stored in the computer used for the purposes of performing rendering 2D images and calculations. Such images may be stored for viewing later or displayed in real-time. Disney was especially innovative, adding sound and producing the first full length animated film "Snow White and the Seven Dwarfs". The outlook for 3D modelers looks good for 2015. Opportunities in movies, TV, the internet and video games will provide multiple career options for those entering this field. Because of these opportunities though comes competition.

1.1.1 How 3D Modeling Is Used

The most common popular example the film Avatar, the 2009 blockbuster from director James Cameron. The film helped in many of the concepts of 3D modeling. 3D modeling is closely related to the concepts of polygonal and digital sculpting mesh.

1.1.2 Modeling:

Modeling is nothing but creating a 3D mesh, whether the end result is a bug-eyed alien or a teacup. How you get to that finished model depends largely on the methods that make the most sense to you.

1.1.3 Layout and Animation:

It is the process of taking a 3D object and getting it to move. Animation has a few different flavors. Example is key frame animation; in key frame animator manipulates the objects on the basis of frame, similar to hand-drawn cartoons. Different methods of animation where objects are placed on splines and set the path of curve for follow also import the motion capturing data and applying it to a character rig. Other way to animate is to use in your 3D application's built-in physics engines, such as when your

scene requires that objects fall. 3ds Max is used by design firms and top-tier animation to create imaginative characters and realistic scenes in games and architecture.

1.1.4 Texturing: An important component of 3D Modeling is texturing. It has a significant role in the creation of high quality animation and graphics.

1.1.5 Rendering: Rendering is the last step and it is important part in the 3D modeling. It is often overlooked by beginners, who are more focused on creating models and animating them. There are many aspects to creating a good final render of a scene, including attention to lighting choices, camera placement which may affect mood, shadows, reflections, transparency and the handling of special effects, such as fluids or grasses.

Advantages of wireframe 3D modeling over exclusively 2D methods include:

- Ability to change angles or animate images with quicker rendering of the changes;
- Rendering photorealistic effects rather than mentally visualizing or estimating;
- Less chance of human error in overdoing, misplacing or forgetting to include a visual effect.

Disadvantages compare to 2D modeling:

2D CAD can only draw two-dimensional objects. 2D CAD used only this type of CAD is best for drawing traditional orthographic projections, such as sections. Making 2D drawings is fast and easy, but the output is still a 2D drawing which does not readily work

with downstream systems. In fact, the majority of the buildings need 3D files and it is difficult read 2D drawings because 2D drawings do not contain all information needed to develop a 3D product. For some photorealistic effects use the 3D modeling software.

Reasons Why 3D Modeling is Important in Architecture Presentations

1. Quicker, easier and realer
2. Remodeling and corrections are easier
3. Better project execution
4. Interior designers are greatly benefited

2. LITERATURE REVIEW:

- Over the past 20 years significant research has been conducted to explore the 3D technology in visualization
- According to survey major improvement has been made in tools and technologies that we use for designing the 3D models.
- percentage of use of 3D visualization is more in Construction and manufacturing field to make simulations
- We have used this improved tools and technologies to make our project interactive and user-friendly.
- No need to work at pixel level so work is reduced of modelling

Most important for the applicability of a model in real-life situations is, whether it can be used to solve problems of industry-relevant sizes. Whether this is possible greatly depends on the solution time of the algorithm. To help you get into 3D modeling in 2014, we created this list of the top 10 free 3D modeling applications.

1. Blender
2. Google Sketchup
3. AutoQ3D Community
4. 3D Canvas
5. Design Workshop Lite
6. K3D Surf
7. Bishop3D
8. FreeCad
9. 3DPlus
10. Anim8or

- The models present in the 2D computer graphics usually do not show for 3dimensional shapes, 3 dimensional optical phenomena such as shadows, reflection, lighting, refraction etc. However, they usually can model multiple layers (conceptually, of film, ink or paper; translucent, or transparent, opaque—stacked in a specific order.

3. METHODOLOGY:

Now days there are no. of way to show the object in realistic form for that use the virtual reality, augmented reality. By using the model we overcome the limitation of 2d model, we can make the

use of 3d modeling and show this model in realistic structure of every object.

In unity provide the asset store which is fully integrated in the unity editor and provides a means for people to share or even sell their custom made content. This asset allows you to acquire needed assets without necessarily needing to make them yourself. Because of these you save your time and aggravation.

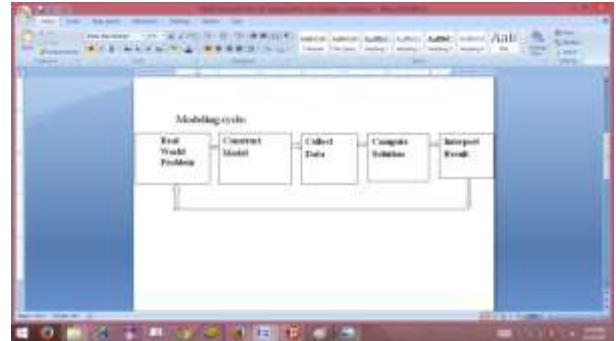


Fig: 3d modeling cycle

In this project we show the actual view of campus related to every object in the campus like tree, classrooms, labs, buildings etc. From that we feel that it is real campus main motive of this project is show the reality .By using the 3d model we create simple small also large games using unity. Unity is the free and open source tool for every 3d application ,in the unity models ,asset store ,material present .

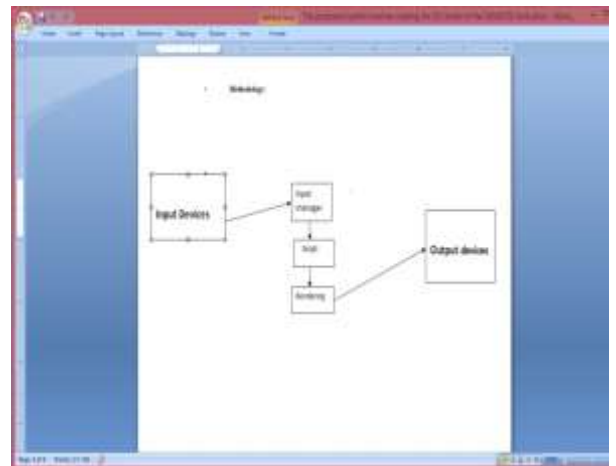


Fig: Block diagram

4. PROPOSED WORK:

3d model overcome the limitation of 2d model because in 2d model we see the object in 2 surface only but in 3d we see object in 3 surface means easily we identify the object see that object is as like a real object .In this we show the real world scenario of the every object. The most important advantage of selecting the unity is easily create the model and for scripting is also simple .For the game development unity tool perfect. Product design is faster (roughly 45% faster on averages) Beat your competition to market. Actual view is show in virtual reality because of 3d anyone easily identified the object or image, we select unity 3d tool kit free, open source or easily handle by anyone. For creating a game we use unity 3d tool it is very beneficial to the user. The Unity game engine has often been referred to as the best video game engine.

Unity game engine was created by Unity Technologies in 2004 for their game as a development tool. For Unity the powerful three robust languages: JavaScript, C#, and Boo.

- Effective communication with customer/suppliers
- Visualize actual scenarios during the design process
- Show effective internal design reviews
- Ability to create renderings and animations for design proposals or reviews
- Generation of virtual prototypes allows non-CAD people to participate in the process
- Automate your design process and increase speed and accuracy of output and response to customers

We propose a simple C# based 3D campus view project which can provide virtual reality of the campus tops as well as show the object in realistic manner. This project shows the each and every object in the campus.

5. IMPLEMENTATION USING UNITY 3D:

Main building consists of four floors one is main office, first year floor, Electronic Telecommunication floor and last is Computer Science.



Fig: Main Department



Fig: Building Department Front View

In above figure you see the front view of the building, in the front view you see the only stair part of building.



Fig: Building Department Side View

In above figure you see the side view of the building.

In below figure you see the actual 3d view of the stair that stair you easily see the actual 3d view of stair.



Fig: Stairs

6. CONCLUSION

This paper presented an efficient framework of 3D campus view that dynamically shows the location of all the object, building etc. We can make efficient use of 3d modeling to represent design of any object to give the clear idea about whole structure by making it realistic.

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