

Modelling Interior of a Building Structure and It's Estimation Costing

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Abstract

3d Studio max, is a professional 3D computer graphics program for making 3D animations, models, games and images. It is developed and produced by Autodesk Media and Entertainment. It has modeling capabilities and a flexible plugin architecture and must be used on the Microsoft Windows platform. It is frequently used by video game developers, many TV commercial studios, and architectural visualization studios. It is also used for movie effects and movie pre-visualization. For its modeling and animation tools, the latest version of 3ds Max also features shaders (such as ambient occlusion and subsurface scattering), dynamic simulation, particle systems, radiosity, normal map creation and rendering, global illumination, a customizable user interface, new icons, and its own scripting language. Objects can be animated along curves with controls for alignment, banking, velocity, smoothness, and looping, and along surfaces with controls for alignment. Weight path-controlled animation between multiple curves, and animate the weight. Objects can be constrained to animate with other objects in many ways — including look at, orientation in different coordinate spaces, and linking at different points in time. These constraints also support animated weighting between more than one target

1. Introduction

The objectives of this paper is to introduce a generic computer aided building cost estimation model based on functional elements for Turkish construction sector projects which will be used in feasibility and schematic design phases. The research design was based on the building functional elements method and a building cost estimation model based on functional elements works on a cost database was suggested. Underlying principles and basic steps of cost estimation based on functional elements was explained by means of computer-based cost estimation process. In order to automate the manual building cost estimation process, the software based on functional elements was developed. The software is currently in the testing phase and is being used for educational purposes. Making use of both public sector and current market prices in the cost estimation process, increasing number of projects stored in the database for more accurate results, estimating costs of different types of projects and estimating the structural functional element percent more precisely are suggested for future research. As the number of the similar projects in database is increased, the accuracy of the cost estimation is also increased. Estimators and graduate students can use the software to estimate building cost of residential projects in feasibility and schematic design phases

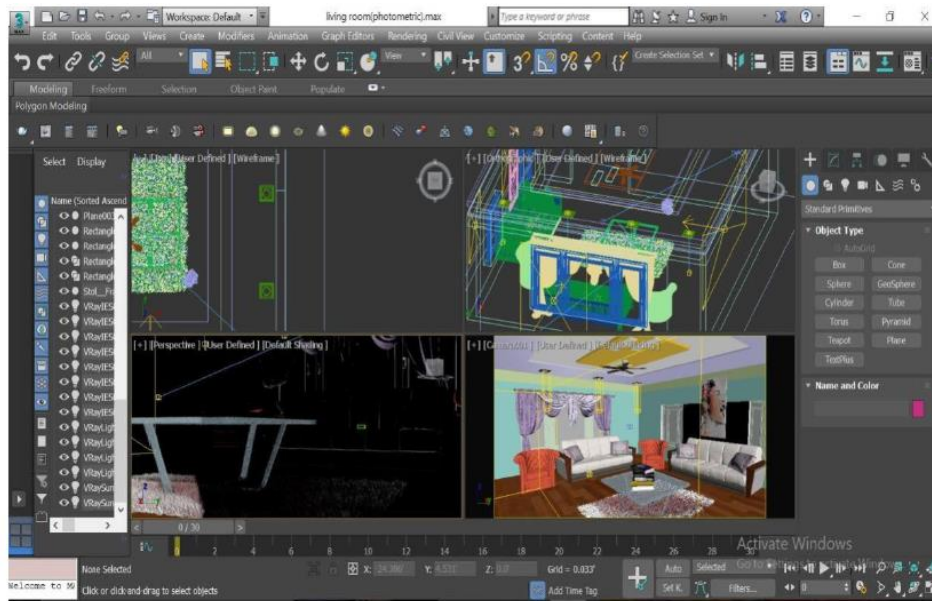


Fig.1 Software model

2. Literature Review

There are several unique features which make it stand apart from other modeling tools. Autodesk 3ds Max is principally, but not exclusively based on polygon modelling. This type of modelling is used broadly in game design because of its highly explicit control over individual polygons that make up the model. The polygon modelling feature also allows for greater model optimization.

- The latest 3ds Max versions have a simplified mesh editing interface and using the 'edit poly' modifier which moves the tools available in the primitive model, advanced in the modifier stack, also allow the users to be used on top of other modifications.
- This software comes with numerous unique primeval shapes such as teapots, cones, pyramids, and cubes are available which can be used as a base for model development.
- With the help of this tool, manipulation of vertex clouds into the desired shape without distortions from unwanted shapes can be possible and can display smooth surfaces with its soft selection tool. By using the sculpting brush feature designers can draw smooth surfaces by hand, if polygons give a distorted image, although functionality is limited.
- One of the most significant features – NURBs feature of Autodesk 3ds permits smooth surface rendition by use of mathematical formulae. It is of great use and most inaccurate simulation of mechanical parts. It is commonly used in various applications like automobile and instrument design.
- This rendering tool also lets designers and architects use custom lighting and shadows along with highlights can also be 'burned' into the image rendered. These settings are mostly used for game imagery.

- Autodesk 3d Studio Max comprises of simulation which supports generating character models with the help of hair, skin, cloth, and fur. These inbuilt features reduce the time required for model development and improve the detail for each frame.
- It is used to accomplish simulation for hard bodies such as wood or bricks. It follows rigid body dynamics. It can recreate the dynamics of shattering rigid objects with its feature shatter effect. Nevertheless, soft body dynamics is also used for the motion simulation of deformable objects.
- It also has a very useful feature which supports Inverse Kinematics and Forward Kinematics. Inverse Kinematics or skeleton modelling feature permits the user to create a model and fit it with a skeleton, which can then be animated as per the requirements of the animator.

3. Proposed System

The safe frames are displayed in three concentric boxes. The outermost safe frame matches the render output resolution. The safe frame matches the render output resolution.

- Free Camera -Free cameras view the area in the direction where the camera is aimed. Unlike target cameras, which have two independent icons for the target and the camera, free cameras are represented by a single icon, making them easier to animate. Free cameras can be used when the camera's position is animated along a trajectory, as in a walkthrough of a building or when the camera is attached to a moving vehicle. The free camera can bank as it travels along the path. If the camera needs to be directly overhead in a scene, use a free camera to prevent it from spinning.
- Target Camera A target camera “views” the area around the target icon that you place when you create the camera. A target camera is easier to aim than a free camera because you simply position the target object at the center of interest.
- Create Camera From View Create Camera From View creates a Target camera whose field of view matches an active Perspective viewport. At the same time, it changes the viewport to a Camera viewport for the new camera object, and makes the new camera the current selection.
- Match Camera to View

Repositions the selected camera so its viewpoint matches the active viewport.

- Using Cameras These topics provide a general introduction to using cameras in 3ds Max.
- Multi-Pass Rendering Effects

Cameras can create two kinds of rendering effects: depth of field and motion blur.

- Walkthrough Assistant The Walkthrough Assistant lets you easily create a predefined walkthrough animation of your scene by placing a camera on a path and setting the height, turning the camera and viewing a preview. This feature is available from the Animation Menu.
- Camera Correction Modifier The Camera Correction modifier applies two-point perspective to a camera view. By default, camera views use three-point perspective, in which vertical lines appear to converge with height. In two-point perspective, vertical lines remain vertical.
- Perspective Match Utility Uses a background image to orient a camera so that its position and field-of-view match the perspective of the image.

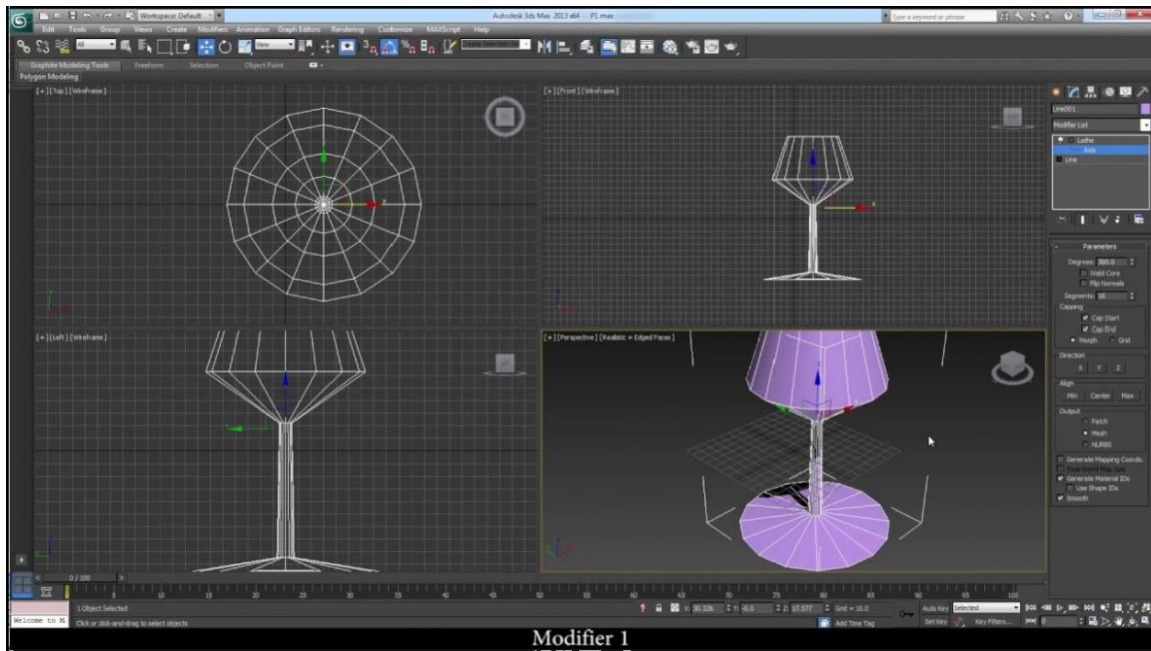


Fig. 2 Proposed Placing

4. Conclusion

Autodesk 3ds Max is a practical software for learning and practicing animation and it helps in developing skills required for 3D modeling and animation purposes. One of the best features is the plug in functionality which boosts its features and makes it a globally used application. The software is used in developing CGI as well as applications ranging from academia to game development. Each use of the software requires the use of a different set of tools available in the software and as plug-ins. 3ds Max is available free of cost for students.

However profession packs are available for sale. Usually, the design process begins at the selection of a primitive model bundled with 3ds, which is then further refined as per need. The current versions have a simplified mesh editing interface and using the 'edit poly' modifier which moves the tools available in the primitive model, higher in the modifier stack, allowing them to be used on top of other modifications.

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