

TECHNOLOGIES FOR WORKING WITH AUTODESK MAYA GRAPHIC EDITORS FOR THREE-DIMENSIONAL MODELING

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Abstract: *Autodesk Maya is a professional 3D modeling, animation, and visualization software that is widely used in film, gaming, and many other industries. Maya stands out for its powerful tools and high level of flexibility. In this article, we will talk about technologies for working with Autodesk Maya and its main capabilities.*

Keywords: *three-dimensional modeling, visualization, technologies, polygon modeling, rendering, lighting systems.*

Programming languages or software can be used to develop three-dimensional modeling, or 3D modeling in short. It is more efficient to develop 3D modeling using ready-made software. This makes creating objects faster and easier. Examples of the most common 3D modeling software include Autodesk's 3ds MAX and Maya. The capabilities of these softwares are very wide, through which you can develop any 3D models. After the 3D modeling is done, it is necessary to connect it with the program and use programming languages to develop the programs. C/C++, Java, Python, JavaScript, C# programming languages are among them. In order to convert the finished 3D models into software, it is necessary to write software codes in the translators. This requires a lot of programming code. A number of graphic software have been developed to optimize these tasks. Autodesk Maya is one of the most popular programs in the field of 3D modeling and animation. The program provides users with a wide range of tools and functions that allow them to create complex 3D models. Maya's interface is intuitive and suitable for beginners, but due to the many options available in the program, it also offers a wide range of opportunities for professional users. Maya allows users to create objects using the polygon modeling method. In this method, users create complex shapes using vertices, edges, and surfaces. In Maya, it is easy to edit and modify objects in Component Mode. Maya supports the NURBS (Non-Uniform Rational B-Splines) modeling method. This method is mainly used to create smooth and high-quality objects. With NURBS, users can easily create complex shapes. Maya has the ability to model sculptures. With this method, users can manually shape objects and add intricate details. Sculpting Tool in Maya provides a high level of control.

The animation process in Maya is very convenient and intuitive. In Maya, you can add widgets to automate actions. Users need to set controls on the timeline to control the movement of objects. Using the rigging process in Maya, users can create bone systems to move 3D models. This process is very important for animation because it ensures the

natural movement of objects. Maya software also supports motion capture technology. With this feature, users can transfer real human movements to 3D models.

In Maya, the appearance of objects can be improved using materials and lighting systems. In Maya, users can add different materials to objects. With materials, users can define the color, texture, and other properties of objects. Creating and editing materials in Maya is easy through the Hypershade window. In Maya, lighting systems can be used to illuminate the scene and enhance the visibility of objects. There are many different lighting sources in Maya, such as artificial lighting, light sources, and other lighting methods. The rendering process in Maya is important to getting the scene to its final appearance. There are two main render engines in Maya.

One of the most popular rendering engines in Maya, it allows you to get high-quality and realistic renderings. With Arnold, users can render with the complexity of materials and lighting in mind. It is a real-time rendering engine. With Viewport 2.0, users can quickly render, which is very convenient for animation and games.

There are several basic methods for modeling in Autodesk Maya. Each method has its own characteristics and is used to create different 3D objects. Creating 3D objects using polygons. In this method, objects consist of triangles or rectangles. It is widely used in creating characters, furniture and other complex objects. Create smooth and curved objects using NURBS (Non-Uniform Rational B-Splines). In this method, objects are defined using mathematical formulas. Used to create cars, boats and other smooth surfaces. Modeling 3D objects with the method of "driving" such as clay or other materials. In this method, objects have more organic and complex forms. It is used to create characters and complex organic forms. Creating objects using mathematical and algorithmic methods. In this method, objects are automatically created and modified. It is used to create complex scenes, landscapes and other objects. Modify the polygon structure of existing objects to create high-quality models. This method uses a low-quality model to create a high-quality version of the object. It is usually used for characters and complex objects after sculpting. There are several methods for modeling in Autodesk Maya, each with its own characteristics. Depending on your project, you can use one or more of these methods together. You can develop your 3D modeling skills by learning and practicing each method.

Conclusion:

Autodesk Maya graphics editor is widely used in the fields of three-dimensional modeling, animation and visualization. Its powerful capabilities and high level of flexibility help users realize their creative ideas. Maya technologies, including modeling, animation, materials and lighting, as well as rendering processes, allow users to create high-quality 3D models. Autodesk Maya is constantly updated and new features are added, making it one of the most popular programs in the field of 3D modeling.

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