

BLENDER PROGRAM AND ITS CAPABILITIES

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Annotation

The article covers the concept of rendering in the Belender program and its capabilities in the Blender program, mastering the basic techniques of creating materials and textures, animations, scene-making.

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In humans, there was usually a perception that free software meant “bad”, “limited-function”, or “demo version”. But Blender is a full-function application. It is developed by the Society of open-source (free and open source software) programmers. The Society of open-source programmers refers to people from all over the world who are contributing to the development of Blender. Blender is a rendering, animation and game-making application. It is also free and open source software supported and distributed freely by The Blender Foundation. You can easily free the blender www.blender.org you can download it from the site.

- The purpose of the foundation is formulated as follows:
- "The Blender foundation is an independent non-profit (nonprofit public benefit corporation) organization that has set the following goals:
- Blender is a licensing fee collection company that must be paid in the amount of € 100,000 for its open code.
- Designed to allow the internet community around the world to learn the technical basics of Blender, to develop 3D technology.
- Service for developers and active users of the blender.
- Hammabop is configured to improve and support the system under the GNU GPL Lyceum with open codes.
- To compensate for the expenses that go to organize the entry system or to collect aids that serve the purposes of the fund and organize the fund's Affairs.

Blender's website: www.blender.org

If you try to master a large number of all the features of a blender, it may seem like a difficult enough program. This book is structured so that you can master the basic techniques of object, scene and animation construction. When studying this program, the best advice I can give you is to never give up learning. Learning any rendering and animation drawing software is a difficult process. Blender is also not out of this situation. after a few weeks of learning, many things will start to seem easy to you. This

tutorial is based on learning by doing exercises every day. Therefore, not all features of the program are fully covered. If you use this book to learn independently or to develop your knowledge, you can use additional information b3d.mezon.ru, blender3d.org.ua, and blender.org you can get it from sites like (there the information is in Russian and English). From these sites you will come across forums and guides where you can find answers to a number of questions. Thousands of blender terrestrial users follow these forums to give and receive tips. Use an extensive knowledge repository!

Version information

Version 2.49 of the blender at the time of publication of this book. Blender is developing its leisure time around the world through the power of human beings who are contributing to the development of the program. Therefore, the new version may appear after 4 months or a year. We express our gratitude to a large number of people who are contributing to the development of the blender. New changes will appear in new versions of dasur, and this program will constantly develop.

Basic concepts of rendering and animation construction

Rendering-Render is a graphical representation of a 3D object or scene. This feature, such as materials, controls the quality of lighting, shadow effects and render. The more these elements you add, the more your scene turns out to be true, but the more time you have to compose an image.

Materials and texture

You can control the appearance of the obyek by choosing a color or texture. The materials give the object validity using different effects. You can control the annealing (specularity), the light beam property, transparency, as well as the return of the appearance of the material. Light Fall (Raytracing) gives the property of capturing the reflection (mirror)and (refraction) effects. As a texture, it is possible to use any scanned image or a drawing in an application where any image is able to be edited. Any format (.jpg,.bitmap,.png) the image can be used as a texture. Also, the blender has a large amount of internal texture generator. These texture generators produce different high characteristics. Examples include wood (wood), marble (marble), clouds (clouds), waves (waves).

Lighting

Lamps (lights) add authenticity to your scene using different types of reflections and shadows. You can control type control, intensity, as well as light scattering. A number of lamps produce an eagle (oreol) effect based on lighting such as fog or dust. Or large-scale lighting is also possible. You can also adjust the illumination distance.

Cameras

The camera is the point of observation of your scene. You can use it as a real camera: it is also possible to control the distance of the lens to see the obyetk in a large plan or at a wide angle. It is also possible to adjust the camera display area. Depth of field (depth-of-field) is also controlled by nodes.

Animation

Animation is a series of rendered pictures, formed as a video recorder. The quality of your film is influenced by the reasons given above, such as frame frequency (fps) in 1 second, image size, file type and compression. A much more common method of animation is keyframing (key frames). Key frames are created in different cases of animation, and then the computer itself performs all the remaining passing frames between these keys.The main variants of animation are volume change, displacement, and motion of objects.

Time factors

Before doing the animation, you need to measure the length of your animation in frames. Also, the number of frames per 1 second (fps). The length of the animation can be calculated according to the

following values:

Types of personnel frequency (fps):

NTSC - us and Japanese video standard: 30 fps.

Film-cinema standard: 24 fps.

Pal is a European video standard; 25 fps.

Custom (other) – choose your personal fps.

If we want to transfer animation to a DVD, we usually use a frame frequency of 25-30 fps, depending on the speed of the computer. Press the PAL or NTSC keys to use the 25-30 fps frame system.

Drawing up key frames of animation

Key frames are set to the beginning and end of the movement, shift or object size change you want. Think about how quickly your object will move (volume change, shift) in accordance with the number of frames per second. For example: if you want the object to move from point A to point B in 2 seconds, and the frame frequency is exactly 30 fps, set the 2-key frame to a distance of 60 frames wide.

Observation from the path of the object in motion

In most animation applications, during motion time, the camera can track the detected path buoy or object from behind (or otherwise). This feature greatly reduces the amount of animation drawing up and the amount of key frames needed.

Output options

We usually save our videos for Windows in MPEG format. Along with the ability to store images in high quality in this format, it can be displayed by most media players. You can choose other formats depending on what purpose you use your video for (for example, for posting on the internet, for writing to DVD, for creating a presentation). Different formats allow you to control qualities in different parameters. For example, the AVI format allows compression using various compressor (compressors) known as codecs (codecs).

Real-time animation (for Blender only):

Real-time animation allows your object to use physical properties to control it, as well as the ability to use the keyboard and add other equipment. You can change the moving person (actor), mass (mass), control (friction), adjust the Force, Move X,y,z to widths, make contacts with other objects on the stage. In time, real-time scrolling opportunities appear in interesting three-dimensional games and architectural constructions.

Now you can use the true fall, shift and other true animations in your role through the physical engine of the blender.

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