

Experiment 4

Introduction to Blender – Designing a Basic 3D Model

Objective:

To study a Blender, an open-source 3D creation suite, and enable them to design a simple 3D model using basic modeling tools.

Software Required:

- Blender (Version 2.8 or above)

Theory:

Blender is a powerful open-source software used for 3D modeling, animation, rendering, and game development. It supports the entire 3D pipeline including modeling, rigging, animation, simulation, rendering, compositing, and motion tracking. It is widely used in animation studios, game development, and visual effects.

Procedure:

1. Launch Blender
Open Blender from the system applications.
2. Understand the User Interface
Familiarize yourself with:
 - 3D Viewport
 - Toolbar
 - Properties panel
 - Outliner
3. Delete the Default Cube (Optional)
 - Select the cube by left-clicking.
 - Press `X` and confirm to delete.
4. Add a New Mesh Object
 - Press `Shift + A`
 - Select `Mesh > Cylinder` (or any basic shape)
5. Transform the Object
 - Use `G` to move, `R` to rotate, and `S` to scale.
 - Adjust using the transform tools on the left toolbar.

6. Enter Edit Mode
 - Press `Tab` to switch to Edit Mode.
 - Use tools like `Extrude (E)`, `Inset (I)`, and `Loop Cut (Ctrl + R)` to modify the shape.
7. Apply Materials and Colors (Optional)
 - Go to the `Materials` tab.
 - Add a new material and assign a base color.
8. Render the Model
 - Press `F12` to render the image using the default camera and lighting.
9. Save the Project
 - Save the `.blend` file and also export an image of your model using `File > Export > Image`.

Sample Output:

A screenshot or rendered image of the final 3D object created.

1. Object 1- A perfume bottle



2. Object 2: An egg



Conclusion:

Hence, we have studied a Blender, an open-source 3D creation suite, and enable them to design a simple 3D model using basic modeling tools.