EXPERIMENT 6

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Aim

To create and render 3D geometric objects such as cubes, spheres, and cylinders using polygons in Blender, and to apply basic color and shading techniques for realistic visualization.

Procedure

1. **Start Blender** → open a new project and delete the default cube.
2. **Add objects**:
    - Use **Shift + A** → **Mesh** to add a **Cube**, **UV Sphere**, and **Cylinder**.
    - Place them at different positions on the grid.
3. **Modify objects**:
    - Use **S (Scale)**, **G (Grab/Move)**, and **R (Rotate)** to resize, move, and orient objects properly.
4. **Apply Materials and Colors**:
    - Select an object → go to **Material Properties** → click **New**.
    - Assign basic colors (e.g., red for cube, blue for sphere, green for cylinder).
5. **Shading**:
    - Switch to **Shading workspace**.
    - Adjust material properties like **Base Color**, **Metallic**, and **Roughness** to give a shiny or matte effect.

6. **Lighting and Camera**:
    - Add a **Light (Shift + A → Light → Sun/Point Light)** and adjust position.
    - Place the camera to frame all objects using **Numpad 0** for camera view and adjust.
7. **Rendering**:
    - Choose **Render → Render Image (F12)** to generate the final output.

Result

3D polygonal objects such as a cube, sphere, and cylinder were successfully created in Blender. Basic materials and colors were applied, shading was adjusted, and the objects were rendered with proper lighting and camera setup. The final render displayed realistic 3D objects with smooth surfaces and visible shading.