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**CS-330-11421-M01 Comp Graphic and Visualization**

**2-3 Milestone One: Project Proposal**

**Southern New Hampshire University**

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**Select a 2D image with objects to replicate in a 3D scene.**

For this assignment, I have selected four objects to replicate in a 3D scene. The objects and their shapes are as follows:

* **Box**: A cleaning block shape
* **Cylinder and Tampered Cylinder**: A wine bottle
* **Sphere**: A round orange
* **Cone**: A red cone
* **Plane**: A square piece of cardboard

I have taken several photos of these objects, capturing their front, left, right, and top views to ensure accurate 3D modeling.

**A bottle of liquid and orange on a table

Description automatically generated**

**A bottle of wine and orange on a table

Description automatically generated**

**A table with objects on it

Description automatically generated**

**Discuss which objects will be replicated in 3D**

Box (Cleaning block shape): The box offers a simple geometric shape that is fundamental in 3D modeling.

Cylinder and Tampered Cylinder (Wine bottle): The cylinder represented by a wine bottle base, the tampered cylinder provides a more complex shape with a curved surface and details such as the bottle neck.

Sphere (Round orange): The sphere, illustrated by a round orange, is essential for understanding and mastering the creation of perfectly round objects in 3D.

Cone (Red cone): The cone shape is another basic geometric form that is important in 3D modeling. Its pointed end and circular base will help in understanding the construction of tapered shapes and smooth transitions.

Plane (Square piece of cardboard): The plane, depicted by a square piece of cardboard, is fundamental for creating flat surfaces.

**Explain which basic 3D shapes will be used to replicate the 2D objects**.

Box (Cleaning block shape)

Basic 3D Shape: Cube or rectangular prism

Explanation: The cleaning block shape is a straightforward rectangular prism, making it simple yet essential for understanding basic 3D construction.

Cylinder (Wine bottle)

Basic 3D Shapes: Cylinder and tampered cone

Explanation: The wine bottle primarily consists of a cylindrical body. The neck of the bottle can be represented by a tampered cone, transitioning smoothly from the wider body to a narrower top. This object introduces curved surfaces and the concept of tapering.

Sphere (Round orange)

Basic 3D Shape: Sphere

Explanation: The round orange is a perfect sphere, an essential geometric shape in 3D modeling. It aids in understanding the creation and manipulation of round objects.

Cone (Red cone)

Basic 3D Shape: Cone

Explanation: The red cone is a simple geometric cone. It is useful for learning how to create pointed shapes and understand the relationship between the base and the apex of a conical object.

Plane (Square piece of cardboard)

Basic 3D Shape: Plane

Explanation: The square piece of cardboard will be represented by a plane, providing a flat surface to ground the other objects. It serves as the foundational element, ensuring all objects are properly aligned and anchored in the scene.

**Scope of Work**

**Modeling the Box (Cleaning block shape)**

Create a cube or rectangular prism using 3D modeling software.

**Modeling the Cylinder (Wine bottle)**

Start with a cylinder for the main body. Add a tampered cone for the neck, ensuring a smooth transition.

**Modeling the Sphere (Round orange)**

Create a sphere with the appropriate radius.

**Modeling the Cone (Red cone)**

Create a cone shape with the specified height and base radius. Ensure the cone's apex is sharp and the base is flat.

**Modeling the Plane (Square piece of cardboard)**

Create a flat plane with dimensions matching the cardboard piece. Position it as the ground plane for the scene.