CSE-4208 Computer Graphics Laboratory

ROLL: 1907121

Project Proposal: Five Star Restaurant's Multipurpose Kitchen

Project Overview:

Multipurpose Kitchen project is an OpenGL-based simulation of a restaurant's multipurpose kitchen.

Key Features:

Dynamic Scenes:

User Interactions: Users can perform actions like opening cabinets, moving utensils, toggling appliances (e.g., turning the gas stove ON/OFF), and controlling fire flames.

Animated Operations: Visual effects like water boiling or conveyor belts moving add realism and interactivity to the simulation.

Curvy Objects:

Objects will be designed with smooth, curved surfaces to mimic real-life utensils.

Aesthetic and Realistic Design:

Detailed Textures: High-quality textures will make surfaces like walls, countertops, and appliances look authentic.

Lighting and Object Placement: Realistic lighting and thoughtful arrangement of objects will make the kitchen look professional and believable.

2D and 3D Rendering:

2D elements might display information, such as appliance status or instructions.

3D models represent the kitchen and its objects.

Projection Techniques

Perspective Projection: Adds depth perception, making objects closer to the camera appear larger.

Orthographic Projection: For technical views without distortion, useful for side or top views.

Coloring and Shading

Material Representation: Shading models will mimic the look of materials like shiny metals, textured wood, and glossy ceramics.

Color Transitions: Dynamic color changes will highlight active elements (e.g., when fire is ON)

Lighting

Dynamic Light Sources: Lights from bulbs, fire flames, and appliances.

Shadows and Reflections: Surfaces will reflect light and cast shadows, adding realism.

Texture Mapping

Textured Walls and Tiles: Patterns or materials like ceramic for tiles and painted textures for walls.

Appliance Surfaces: Stainless steel or matte finishes for kitchen equipment.

Fractals

Decorative Elements: Fractal-based patterns for tiles, countertops, or wall art.

Procedural Generation: Fractals will be dynamically generated to ensure unique designs.