**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.