Computer Graphics II
– Point Shadows (Questions)

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Possible Questions

What is the main difference between directional and omnidirectional shadow mapping?

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What is the main difference between directional and omnidirectional shadow mapping?

- Main difference between both shadow mapping techniques is the depth map used → cubemap

Possible Questions

- Complete the cubemap generation:

```
const unsigned int SHADOW_WIDTH = 1024, SHADOW_HEIGHT = 1024;
glBindTexture(GL_TEXTURE_CUBE_MAP, depthCubemap);
for (unsigned int i = 0; i < 6; ++i)
        glTexImage2D(                                    , 0,
                GL_DEPTH_COMPONENT, SHADOW_WIDTH, SHADOW_HEIGHT, 0,
                GL_DEPTH_COMPONENT, GL_FLOAT, NULL);
```

Possible Questions

- Complete the cubemap generation:

```cpp
const unsigned int SHADOW_WIDTH = 1024, SHADOW_HEIGHT = 1024;
glBindTexture(GL_TEXTURE_CUBE_MAP, depthCubemap);
for (unsigned int i = 0; i < 6; ++i)
        glTexImage2D(GL_TEXTURE_CUBE_MAP_POSITIVE_X + i, 0,
                GL_DEPTH_COMPONENT, SHADOW_WIDTH, SHADOW_HEIGHT, 0,
                GL_DEPTH_COMPONENT, GL_FLOAT, NULL);
```

Possible Questions

Complete the `ShadowCalculation`:

```
float ShadowCalculation(vec3 fragPos)
{
    vec3 fragToLight = fragPos - lightPos;
    float closestDepth = texture(depthMap, [                ]).r;
    closestDepth *= far_plane;
    float currentDepth = [                        ];
    float bias = 0.05;
    float shadow = currentDepth -  bias > closestDepth ? 1.0 : 0.0;

    return shadow;
}
```

Possible Questions

Complete the `ShadowCalculation`:

```
float ShadowCalculation(vec3 fragPos)
{
    vec3 fragToLight = fragPos - lightPos;
    float closestDepth = texture(depthMap, fragToLight).r;
    closestDepth *= far_plane;
    float currentDepth = length(fragToLight);
    float bias = 0.05;
    float shadow = currentDepth -  bias > closestDepth ? 1.0 : 0.0;

    return shadow;
}
```