

# Crystal ball on a desk

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## Project Theme

1. Sphere crystal ball: glass, reflection of objects on the desk
2. Crystal ball on a desk in a room. There may be other simple objects surrounding the crystal ball on the desk, e.g. books, cups.
3. Crystal ball scene can change: different seasons, different places, such as under sea, or arctic with snow, or raining day
4. Particles inside the crystal ball: snow, falling leaves, etc.
5. User can also change the texture mapping of the objects

## Resources for Implementation

Labs:

Lab 2 (moving objects in the scene)

Lab 8 (particles)

Lab 9 (metal and glass)

Earlier projects

OpenGL/GLSL

## Technical Features Description

Not covered in assignments/labs:

- Anti-aliasing
- Screen space ambient occlusion with deferred lighting (custom shader)
- Bump mapping

Covered in assignments/labs:

- Glass, metal shaders for objects encountered along the ride (lab 10)
- 3D particles generation (lab 9 Particles) (custom shader)
- Texture mapping (Ray)
- Procedural geometric shapes (cube, sphere, cone, cylinder)

## Job Division

Each of our team member will be taking the lead on one or two features as described below:

Yifan:

1. SSAO and deferred rendering

2. Creating a skybox and apply glass metal shader to objects

Jinglu:

1. Texture Mapping
2. Anti-aliasing

Xinyue:

1. Particles
2. Geometric shapes & scenefile