2023-1 Computer Graphics

5th week_2

Sung Soo Hwang

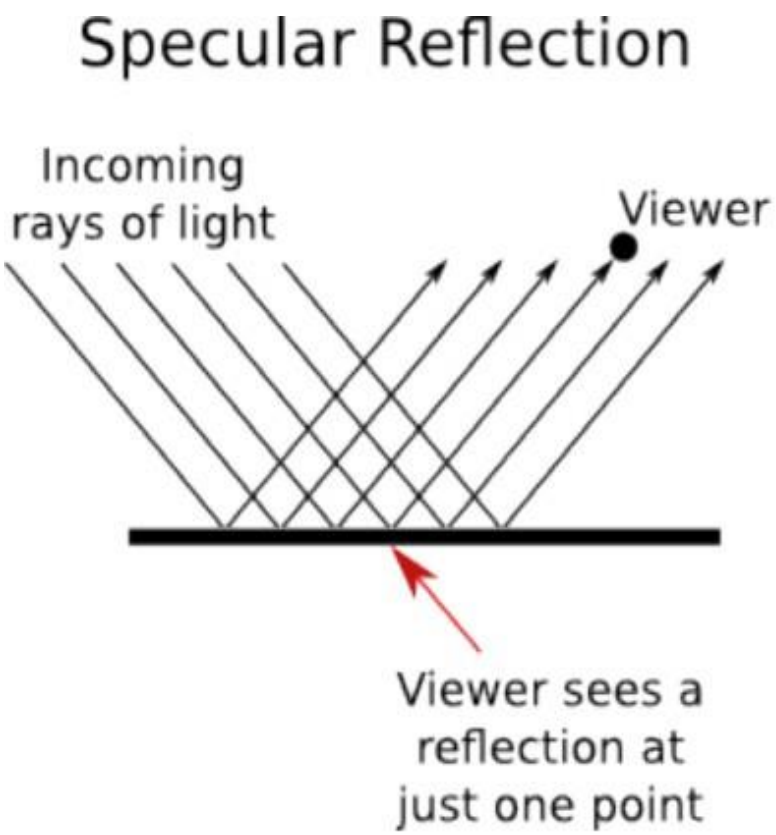
- Explain the persistence of vision
- Why do we need z-buffering to render an image?
- What is the difference between voxels and polygon meshes?
- Explain diffuse reflection and specular reflection
- Why do we use a normal map?

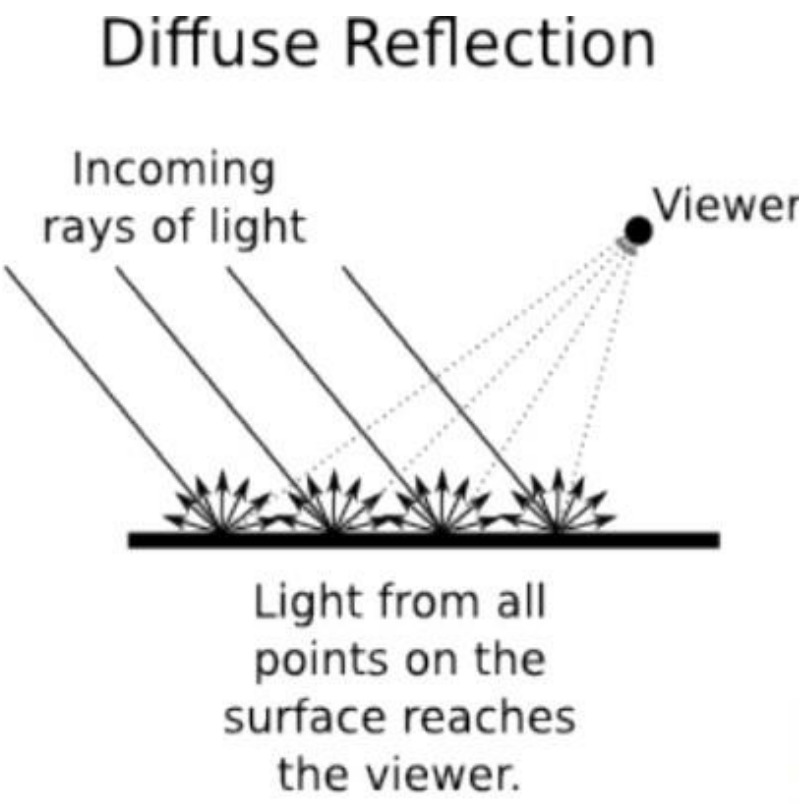
- Explain the persistence of vision
  - The image of any object stays on the retina for about 1/10th of the second, even after the object is being removed from our eye sight.
  - If there is any displacement of the object took place during this period our vision did not notice the displacement but perceive it as the object moved from one position to another position.

- Why do we need z-buffering to render an image?
  - Computer should know which part of a 3D object is in front of other parts
  - So, we generate a z-buffer and store the distance between a camera and a part of a 3D object

- What is the difference between voxels and polygon meshes?
  - Polygon meshes
    - represent a 3D object by its surface
    - It consists of points of the surface(vertices) and the connectivity information between points(edges)
  - Voxel
    - 3D version of pixel
    - Partition a 3D space into grids and find information of each grid (whether the cell is transparent or not, color of the cell)
    - Inner part of a 3D object can be represented

- Explain diffuse reflection and specular reflection





- Why do we use a normal map?
  - A normal map is a special kind of texture that allows you to add surface detail to a model that catches the light as if it is represented by real geometry.