

# 심화전공실습 1

#05. 3D Programming

Self-scoring table

	P1	P2	P3	E1	E2	Total
Score	1	1	1	0	0	3

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# 목차

## 1.Practice

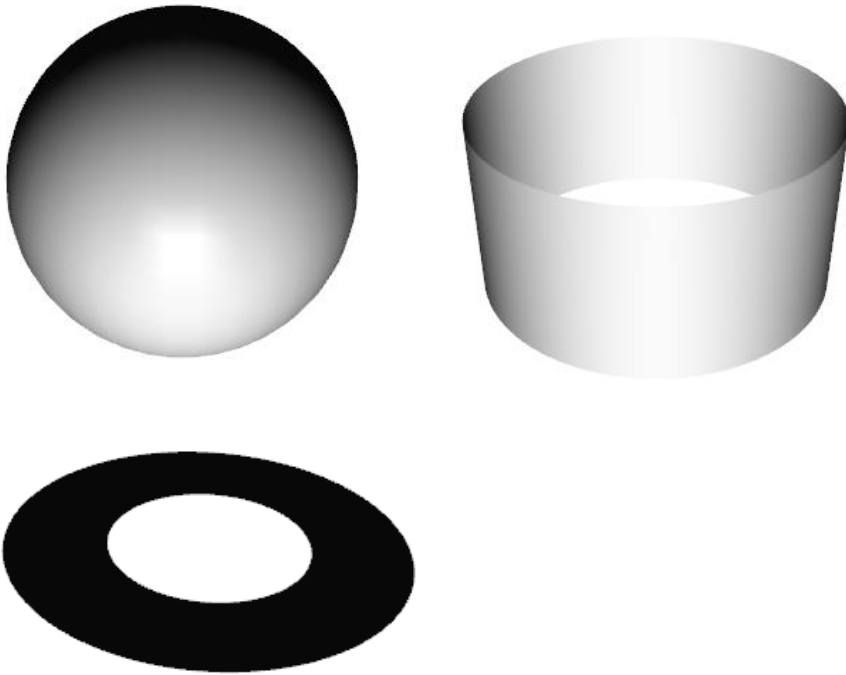
- Draw OpenGL quadric objects: sphere, cylinder, disk
- Polygon fill on/off
- Read/draw a bunny model using points

## 2.Exercise

- Extract all the edges and print # of edges of a bunny model
- Draw the extracted edges using lines

## Practice

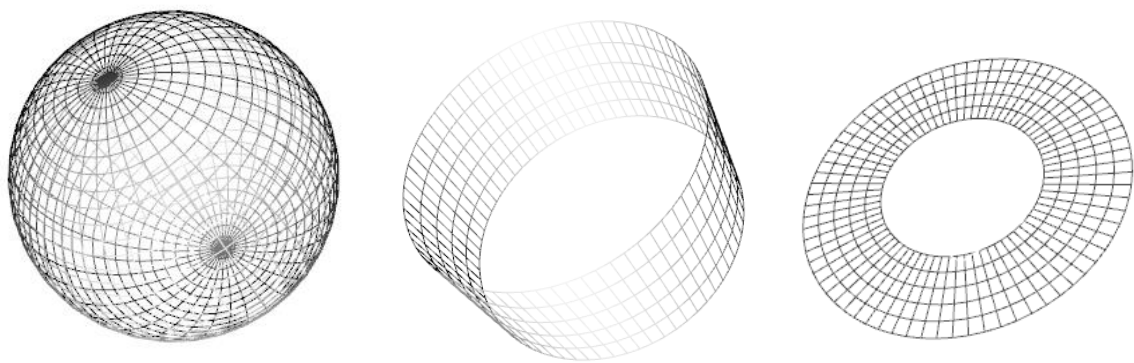
### 1. Draw OpenGL quadric objects: sphere, cylinder, disk



1 을 누르면 sphere, 2 를 누르면 cylinder, 3 을 누르면 disk 가 나온다.

### 2. Polygon fill on/off

Polygon Off 상태



F 를 누르면 on/off 할 수 있다.

### 3. Read/draw a bunny model using points



```
readMesh("m01_bunny.off");

cout << endl;
cout << "keyboard Input: d for depth test on/off" << endl;
cout << "keyboard Input: f for polygon fill on/off" << endl;
cout << endl;
cout << "Keyboard Input:1 for sphere" << endl;
cout << "Keyboard Input:2 for cylinder" << endl;
cout << "Keyboard Input:3 for Disk" << endl;
cout << "Keyboard Input:4 for bunny" << endl;
```

readMesh 에서 bunny 를 읽도록 한다.

그리고 4 번을 누르면 나오도록 한다.

## 1. Extract all the edges and print # of edges of a bunny model

```
for (int i = 0; i < nFaces; i++)  
    edge1.push_back(face[0][i]);  
for (int j = 0; j < nFaces; j++) {  
    edge2.push_back(face[2][j]);  
}
```

```
for (int i = 0; i < nFaces; i++)  
    for (int j = 0; j < nFaces; j++) {  
        for (int k = 0; k < nFaces; k++)  
            if ((face[0][i] == face[2][j]) && (face[0][j] == face[2][i]))  
                edge2.remove(face[2][j]);  
    }  
}
```

readMesh 에서

```
#include<list>
```

```
list<int> edge1;
```

linked list 를 이용하여 edge 를 extract 하려 했으나 구현하지 못했습니다.

## 2. Draw the extracted edges using lines