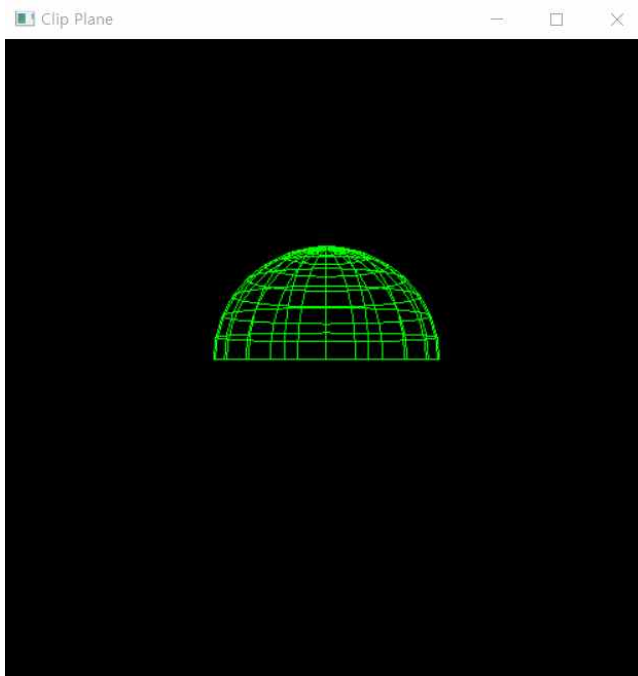


## 컴퓨터 그래픽스 과제 - ClipPlane

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1)



```
#include <glut.h>
#include <GL/GL.h>
#include <GL/GLU.h>

void MyDisplay() {
    GLdouble eqn1[4] = { 0.0, 0.0, -1.0, 0.0 }; // - 위
    GLdouble eqn2[4] = { 1.0, 0.0, 0.0, 0.0 }; // | 오른쪽
    GLdouble eqn3[4] = { 1.0, 1.0, 0.0, 0.0 }; // ₩ 우상단
    GLdouble eqn4[4] = { 1.0, 0.0, 0.0, 0.5 }; // | 절단선이 왼쪽으로 0.5만큼 더 치우침

    glMatrixMode(GL_MODELVIEW);
    glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);
    glColor3f(0.0, 1.0, 0.0);

    glTranslatef(0.0, 0.0, -5.0);
    glRotated(90.0, 1.0, 0.0, 0.0);

    glClipPlane(GL_CLIP_PLANE0, eqn1);
    glEnable(GL_CLIP_PLANE0);

    glutWireSphere(1.0, 20, 16);
}
```

```

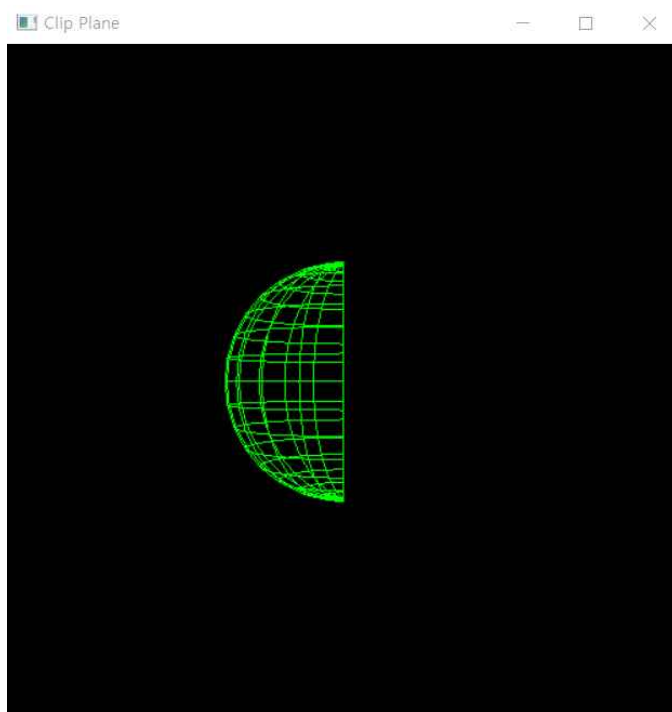
    glFlush();
}

void MyReshape(int w, int h) {
    glViewport(0, 0, (GLsizei)w, (GLsizei)h);
    glMatrixMode(GL_PROJECTION);
    glLoadIdentity();
    gluPerspective(60.0, (GLfloat)w / (GLfloat)h, 1.0, 10.0);
}

int main()
{
    glutInitDisplayMode(GLUT_SINGLE | GLUT_RGBA | GLUT_DEPTH);
    glutInitWindowSize(500, 500);
    glutInitWindowPosition(500, 400);
    glutCreateWindow("Clip Plane");
    glClearColor(0.0, 0.0, 0.0, 0.0);
    glutDisplayFunc(MyDisplay);
    glutReshapeFunc(MyReshape);
    glutMainLoop();
    return 0;
}

```

2)



```

#include <glut.h>
#include <GL/GL.h>
#include <GL/GLU.h>

void MyDisplay() {
    GLdouble eqn1[4] = { 0.0, 0.0, -1.0, 0.0 }; // - 위
    GLdouble eqn2[4] = { -1.0, 0.0, 0.0, 0.0 }; // | 왼쪽
    GLdouble eqn3[4] = { 1.0, 1.0, 0.0, 0.0 }; // W 우상단
    GLdouble eqn4[4] = { 1.0, 0.0, 0.0, 0.5 }; // | 절단선?이 왼쪽으로 0.5만큼 더 치우침

    glMatrixMode(GL_MODELVIEW);
    glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);
    glColor3f(0.0, 1.0, 0.0);

    glTranslatef(0.0, 0.0, -5.0);
    glRotated(90.0, 1.0, 0.0, 0.0);

    glClipPlane(GL_CLIP_PLANE0, eqn2);
    glEnable(GL_CLIP_PLANE0);

    glutWireSphere(1.0, 20, 16);
    glFlush();
}

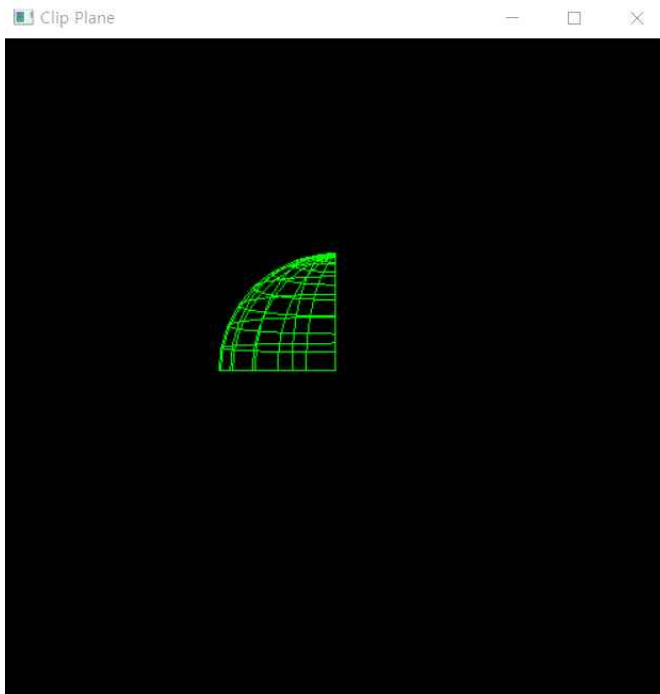
void MyReshape(int w, int h) {
    glViewport(0, 0, (GLsizei)w, (GLsizei)h);
    glMatrixMode(GL_PROJECTION);
    glLoadIdentity();
    gluPerspective(60.0, (GLfloat)w / (GLfloat)h, 1.0, 10.0);
}

int main()
{
    glutInitDisplayMode(GLUT_SINGLE | GLUT_RGBA | GLUT_DEPTH);
    glutInitWindowSize(500, 500);
    glutInitWindowPosition(500, 400);
    glutCreateWindow("Clip Plane");
    glClearColor(0.0, 0.0, 0.0, 0.0);
    glutDisplayFunc(MyDisplay);
    glutReshapeFunc(MyReshape);
}

```

```
    glutMainLoop();  
    return 0;  
}
```

3)



```
#include <glut.h>  
#include <GL/GL.h>  
#include <GL/GLU.h>  
  
void MyDisplay() {  
    GLdouble eqn1[4] = { 0.0, 0.0, -1.0, 0.0 }; // - 위  
    GLdouble eqn2[4] = { -1.0, 0.0, 0.0, 0.0 }; // | 왼쪽  
    GLdouble eqn3[4] = { 1.0, 1.0, 0.0, 0.0 }; // W 우상단  
    GLdouble eqn4[4] = { 1.0, 0.0, 0.0, 0.5 }; // | 절단선?이 왼쪽으로 0.5만큼 더 치우침  
  
    glMatrixMode(GL_MODELVIEW);  
    glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);  
    glColor3f(0.0, 1.0, 0.0);  
  
    glTranslatef(0.0, 0.0, -5.0);  
    glRotated(90.0, 1.0, 0.0, 0.0);  
  
    glColor3f(0.0, 1.0, 0.0);  
    glClipPlane(GL_CLIP_PLANE0, eqn1);  
}
```

```

glEnable(GL_CLIP_PLANE0);

glClipPlane(GL_CLIP_PLANE1, eqn2);
glEnable(GL_CLIP_PLANE1);

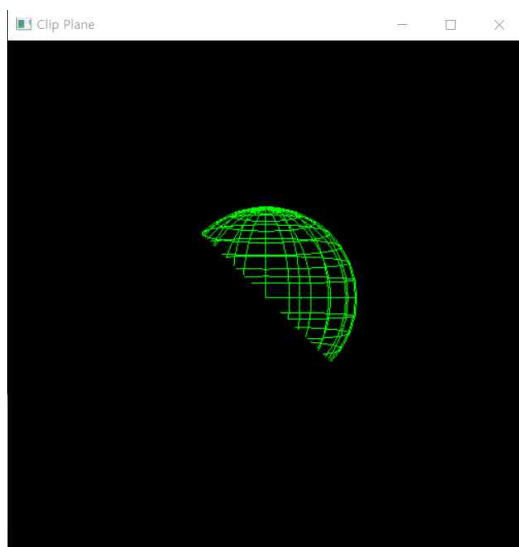
glutWireSphere(1.0, 20, 16);
glFlush();
}

void MyReshape(int w, int h) {
    glViewport(0, 0, (GLsizei)w, (GLsizei)h);
    glMatrixMode(GL_PROJECTION);
    glLoadIdentity();
    gluPerspective(60.0, (GLfloat)w / (GLfloat)h, 1.0, 10.0);
}

int main()
{
    glutInitDisplayMode(GLUT_SINGLE | GLUT_RGBA | GLUT_DEPTH);
    glutInitWindowSize(500, 500);
    glutInitWindowPosition(500, 400);
    glutCreateWindow("Clip Plane");
    glClearColor(0.0, 0.0, 0.0, 0.0);
    glutDisplayFunc(MyDisplay);
    glutReshapeFunc(MyReshape);
    glutMainLoop();
    return 0;
}

```

4)



```

#include <glut.h>
#include <GL/GL.h>
#include <GL/GLU.h>

void MyDisplay() {
    GLdouble eqn1[4] = { 0.0, 0.0, -1.0, 0.0 }; // - 위
    GLdouble eqn2[4] = { -1.0, 0.0, 0.0, 0.0 }; // | 왼쪽
    GLdouble eqn3[4] = { 1.0, 0.0, -1.0, 0.0 }; // W 우상단
    GLdouble eqn4[4] = { 1.0, 0.0, 0.0, 0.5 }; // | 절단선?이 왼쪽으로 0.5만큼 더 치우침

    glMatrixMode(GL_MODELVIEW);
    glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);
    glColor3f(0.0, 1.0, 0.0);

    glTranslatef(0.0, 0.0, -5.0);
    glRotated(90.0, 1.0, 0.0, 0.0);

    glClipPlane(GL_CLIP_PLANE0, eqn3);
    glEnable(GL_CLIP_PLANE0);

    glutWireSphere(1.0, 20, 16);
    glFlush();
}

void MyReshape(int w, int h) {
    glViewport(0, 0, (GLsizei)w, (GLsizei)h);
    glMatrixMode(GL_PROJECTION);
    glLoadIdentity();
    gluPerspective(60.0, (GLfloat)w / (GLfloat)h, 1.0, 10.0);
}

int main()
{
    glutInitDisplayMode(GLUT_SINGLE | GLUT_RGBA | GLUT_DEPTH);
    glutInitWindowSize(500, 500);
    glutInitWindowPosition(500, 400);
    glutCreateWindow("Clip Plane");
    glClearColor(0.0, 0.0, 0.0, 0.0);
    glutDisplayFunc(MyDisplay);
}

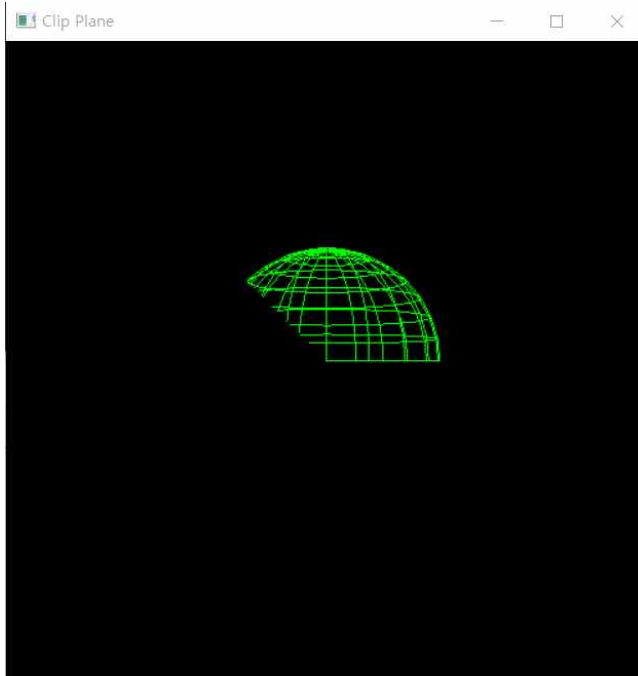
```

```

    glutReshapeFunc(MyReshape);
    glutMainLoop();
    return 0;
}

```

5)



```

#include <glut.h>
#include <GL/GL.h>
#include <GL/GLU.h>

void MyDisplay() {
    GLdouble eqn1[4] = { 0.0, 0.0, -1.0, 0.0 }; // - 위
    GLdouble eqn2[4] = { -1.0, 0.0, 0.0, 0.0 }; // | 왼쪽
    GLdouble eqn3[4] = { 1.0, 0.0, -1.0, 0.0 }; // W 우상단
    GLdouble eqn4[4] = { 1.0, 0.0, 0.0, 0.5 }; // | 절단선?이 왼쪽으로 0.5만큼 더 치우침

    glMatrixMode(GL_MODELVIEW);
    glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);
    glColor3f(0.0, 1.0, 0.0);

    glTranslatef(0.0, 0.0, -5.0);
    glRotated(90.0, 1.0, 0.0, 0.0);
}

```

```
    glColorPlane(GL_CLIP_PLANE0, eqn1);
    glEnable(GL_CLIP_PLANE0);

    glColorPlane(GL_CLIP_PLANE1, eqn3);
    glEnable(GL_CLIP_PLANE1);

    glutWireSphere(1.0, 20, 16);
    glFlush();
}

void MyReshape(int w, int h) {
    glViewport(0, 0, (GLsizei)w, (GLsizei)h);
    glMatrixMode(GL_PROJECTION);
    glLoadIdentity();
    gluPerspective(60.0, (GLfloat)w / (GLfloat)h, 1.0, 10.0);
}

int main()
{
    glutInitDisplayMode(GLUT_SINGLE | GLUT_RGBA | GLUT_DEPTH);
    glutInitWindowSize(500, 500);
    glutInitWindowPosition(500, 400);
    glutCreateWindow("Clip Plane");
    glClearColor(0.0, 0.0, 0.0, 0.0);
    glutDisplayFunc(MyDisplay);
    glutReshapeFunc(MyReshape);
    glutMainLoop();
    return 0;
}
```