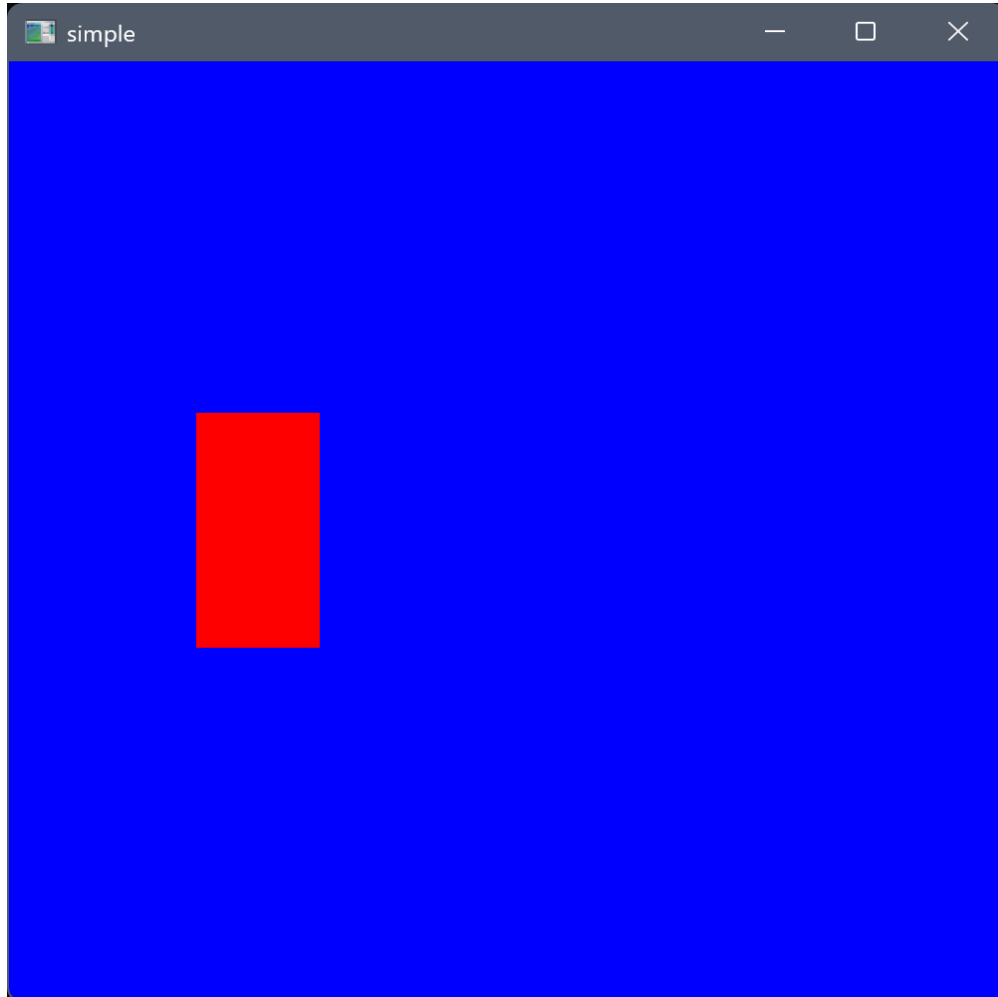


## | 2025-04-18\_CG\_05\_예제\_뷰포트 이해

### | 📁 예제 설명

#### | 📄 목표 출력

- 직사각형의
  - 높이는  $h/4$
  - 너비는  $w/2$  의  $1/4$



#### | 📄 조건

- `glRectf(-0.25f, 0.25f, 0.25f, -0.25f);`
  - `glutInitWindowSize(500, 500);`
  - `glOrtho(-1, 1, -1, 1, 1, -1);`
  - `glViewport()` 수정하여 해결하기.
-

## I 📁 해결 방법

### I 📄 glViewport()

```
glViewport(0, 0, 250, 500);
```

- 전체 창 크기: 500 x 500
- viewport 크기: 250 x 500 → 왼쪽 절반만 사용
- 결과적으로, 사각형은 창의 왼쪽 절반에만 출력된다.

### I 📄 전체 코드

```
#include <GL/glut.h>
#include <stdio.h>
#include <iostream>

// 장면 렌더링
void RenderScene(void) {

    glClear(GL_COLOR_BUFFER_BIT);
    glViewport(0, 0, 250, 500); // ✨

    glMatrixMode(GL_PROJECTION);
    glLoadIdentity();

    glOrtho(-1, 1, -1, 1, 1, -1);

    glMatrixMode(GL_MODELVIEW);
    glLoadIdentity();

    glColor3f(1.0f, 0.0f, 0.0f);
    glRectf(-0.25f, 0.25f, 0.25f, -0.25f);

    glFlush();
}

void SetupRC(void) {
    glClearColor(0.0f, 0.0f, 1.0f, 1.0f);
}

int main(int argc, char** argv) {

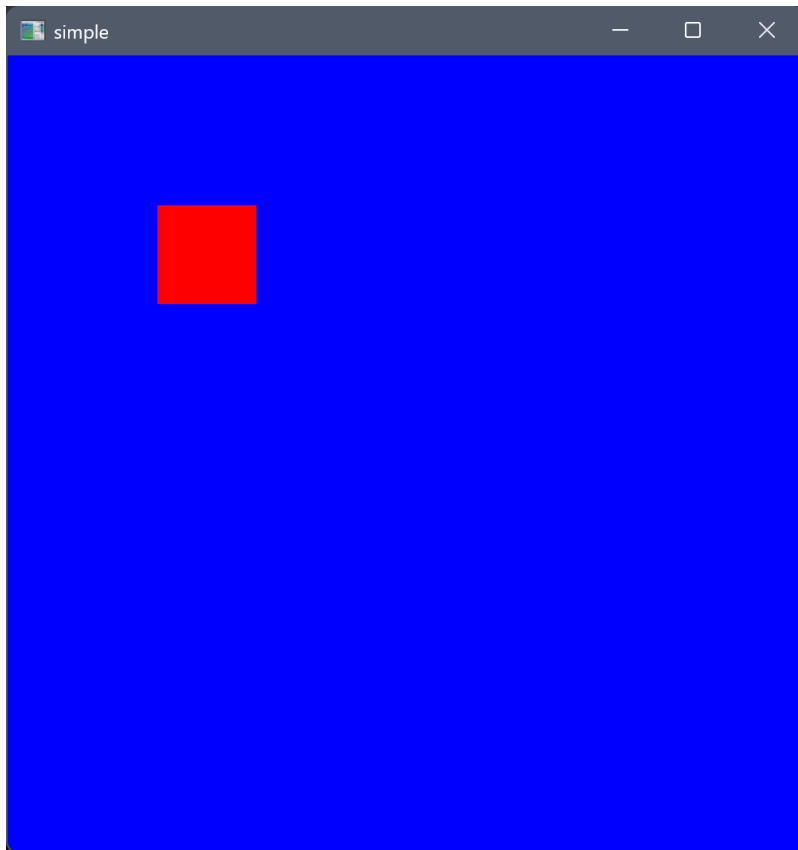
    glutInit(&argc, argv);
    glutInitDisplayMode(GLUT_SINGLE | GLUT_RGB);
    glutInitWindowSize(500, 500);
    glutInitWindowPosition(100, 100);
```

```
glutCreateWindow("simple");  
  
SetupRC();  
  
glutDisplayFunc(RenderScene);  
  
glutMainLoop();  
}
```

## I 추가 실행

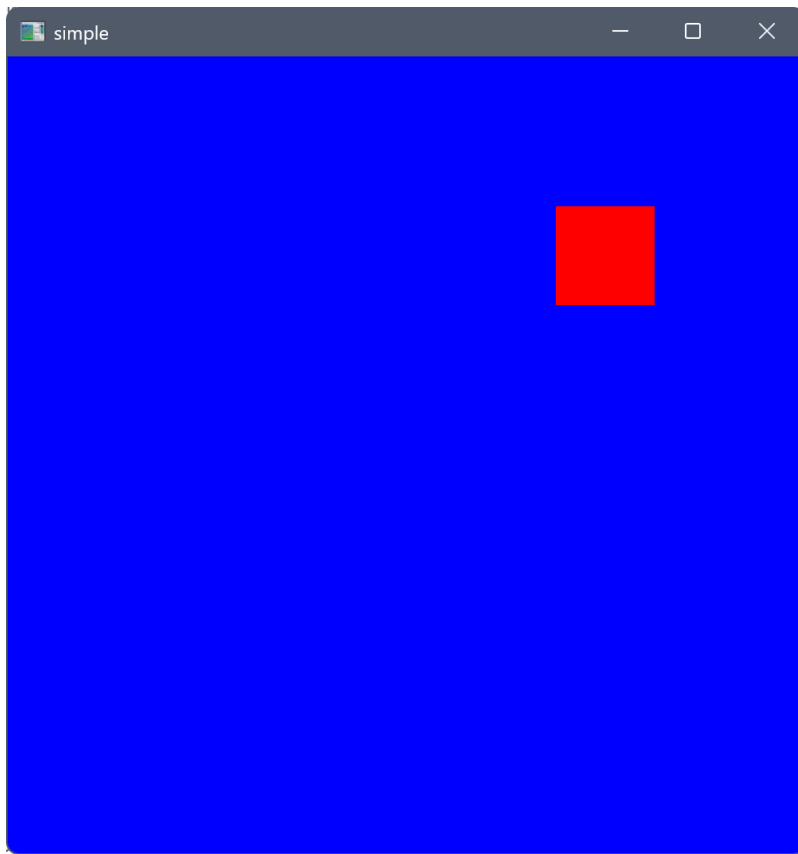
### I 1.

```
glViewport(0, 250, 250, 250);
```



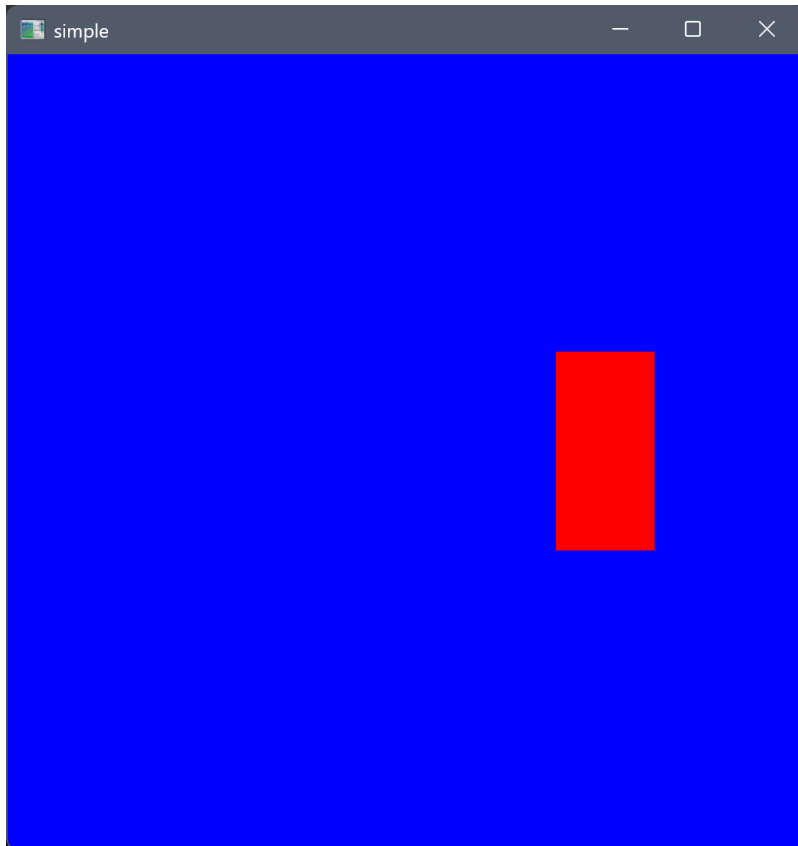
### I 2.

```
glViewport(250, 250, 250, 250);
```



3.

```
glViewport(250, 0, 250, 500);
```



4.

```
glViewport(0, 0, 500, 250);
```

