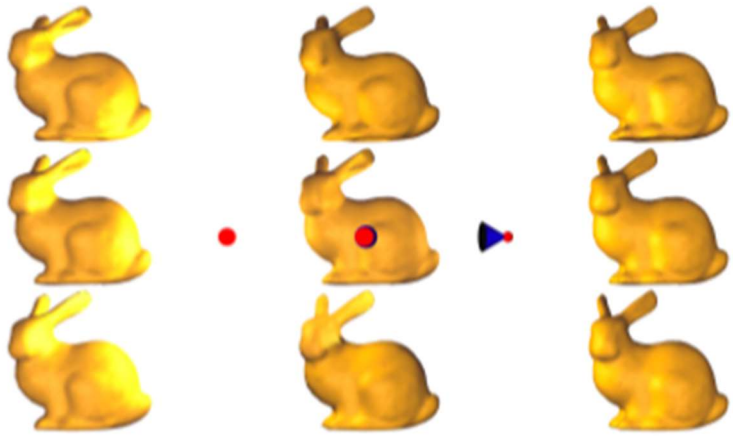
Computer Graphics



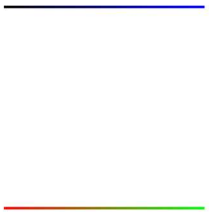
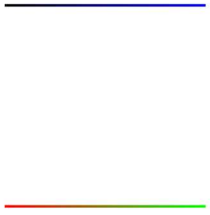
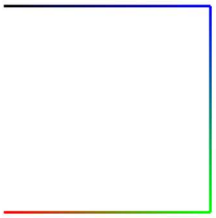
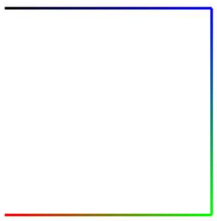
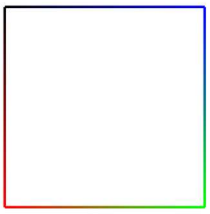
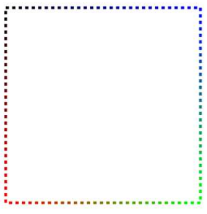
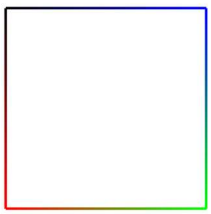
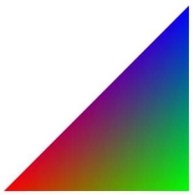
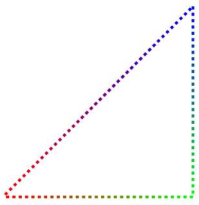
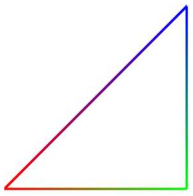
P02_PRIMITIVES AND KEYBOARD

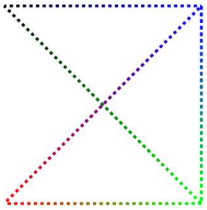
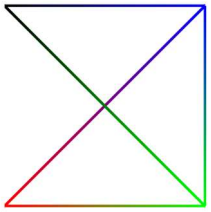
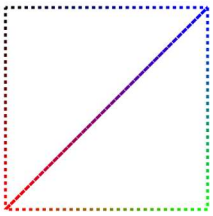
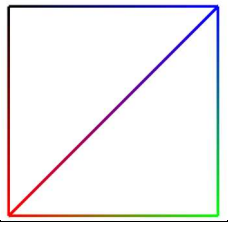
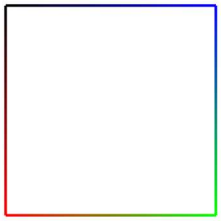
이민재 | Computer Graphics [심화전공실습 1] | 2020/09/13

	P01	P02	P03	E01	E02	E03	TOTAL
SCORE	1	1	1	1	1	1	6

P01 P02 P03

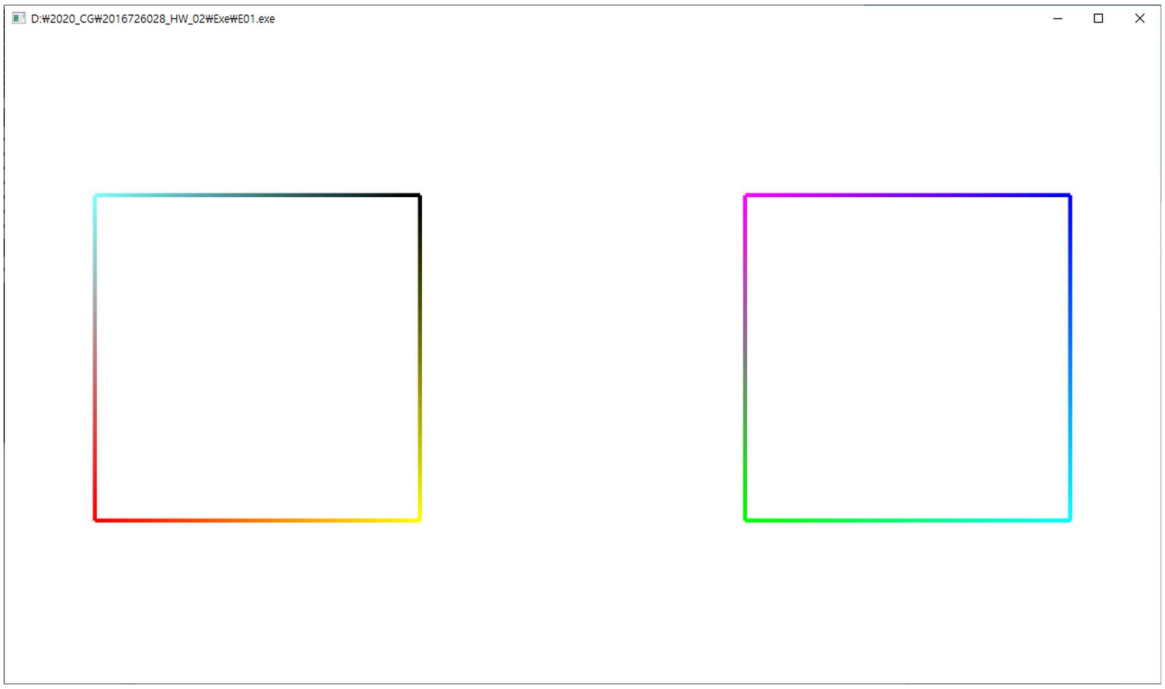
<SNAPSHOT>

PRIMITIVES	DEFAULT	STIPPLING ON (&POLYGON FILLING OFF)	POLYGON FILLINIG OFF
POINTS			
LINES			
LINE STRIP			
LINE LOOP			
TRIANGLES			

TRIANGLE STRIP			
TRIANGLE FAN			
POLYGON			

E01 E03(GL_Quads)

<SNAPSHOT>



<EXPLANATION>

```
case GLFW_KEY_9:    mode = GL_QUADS;    break;
case GLFW_KEY_0:    mode = GL_QUAD_STRIP;    break;
```

키 입력 9 와 0 을 각각 GL_QUADS, GL_QUAD_STRIP 에 할당하기위해서 case 문에 추가하였다. GL_QUADS 의 경우 vertex 의 순서대로 4 점을 기준으로 삼고 사각형을

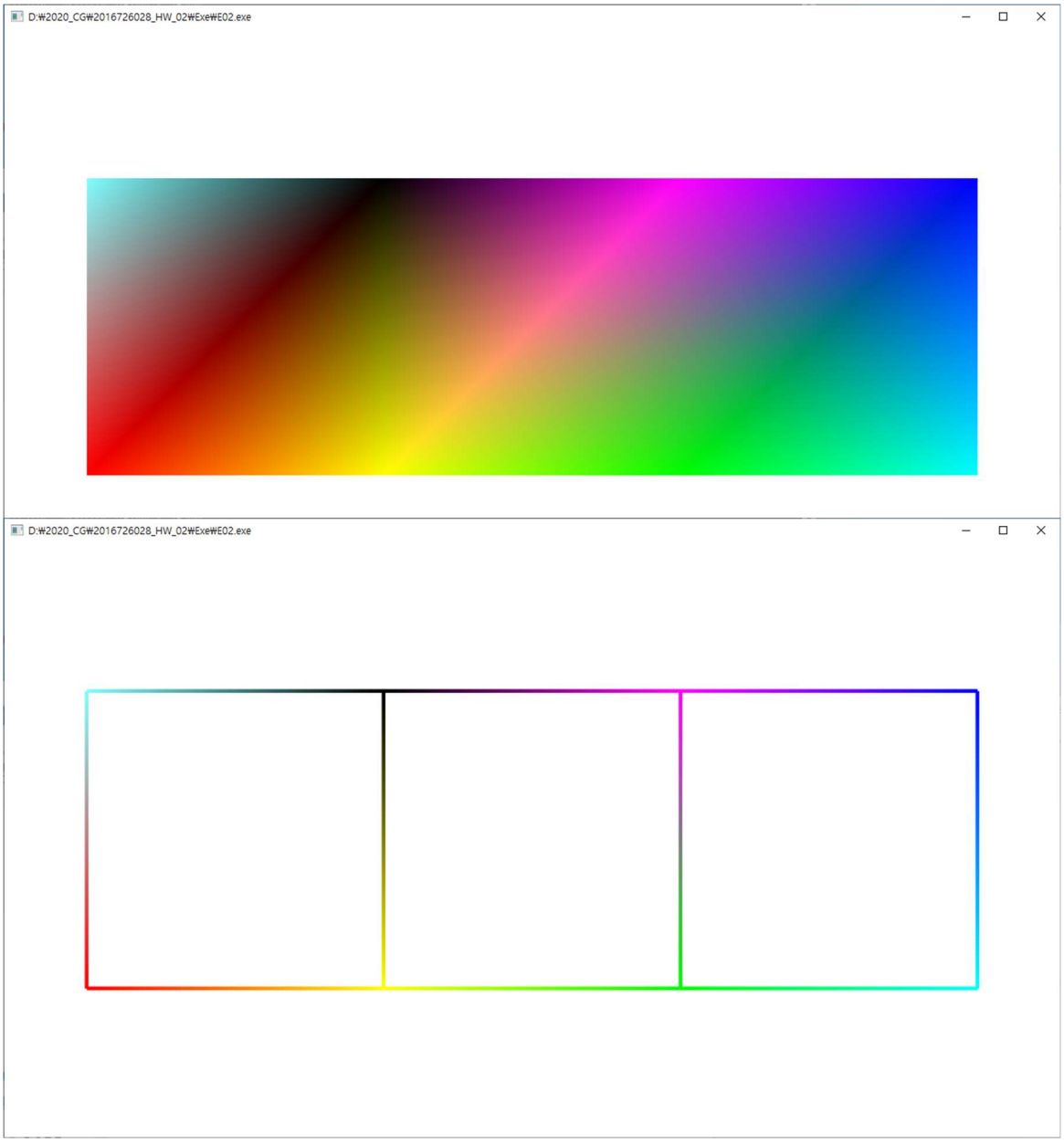
그리는 형식이기 때문에 반시계방향으로 배치한 4 개의 vertex 를 x 축만 좌표만 이동하여 2 번 반복하는 것으로 구현하였다.

```
glColor3f(1, 0, 0); glVertex2f(-1.5, -0.5);
glColor3f(1, 1, 0); glVertex2f(-0.5, -0.5);
glColor3f(0, 0, 0); glVertex2f(-0.5, 0.5);
glColor3f(0.5, 1, 1); glVertex2f(-1.5, 0.5);

glColor3f(0, 1, 0); glVertex2f(0.5, -0.5);
glColor3f(0, 1, 1); glVertex2f(1.5, -0.5);
glColor3f(0, 0, 1); glVertex2f(1.5, 0.5);
glColor3f(1, 0, 1); glVertex2f(0.5, 0.5);
```

E02 E03(GL_Quad_Strip)

<SNAPSHOT>



<EXPLANATION>

GL_QUAD_STRIP 의 경우 사각형을 인덱스 순서대로 그려가는데, v0-v1 / v2-v3 의 연속된 vertex 가 각 사각형의 한 변이 되는 것을 이용하여 다음과 같이 구현하였고, GL_QUADS 와 비교하였을 때 동일 vertex 개수를 사용하였지만 더 많은 사각형을 그린 것을 알 수 있다.

```
glColor3f(1, 0, 0); glVertex2f(-1.5, -0.5); //v0
glColor3f(0.5, 1, 1); glVertex2f(-1.5, 0.5); //v1

glColor3f(1, 1, 0); glVertex2f(-0.5, -0.5); //v2
glColor3f(0, 0, 0); glVertex2f(-0.5, 0.5); //v3

glColor3f(0, 1, 0); glVertex2f(0.5, -0.5); //v4
glColor3f(1, 0, 1); glVertex2f(0.5, 0.5); //v5

glColor3f(0, 1, 1); glVertex2f(1.5, -0.5); //v6
glColor3f(0, 0, 1); glVertex2f(1.5, 0.5); //v7
```