

Lab 1.3 Assignment

1. 4-ViewPorts:

Achieved by giving the different coordinates to “glViewport(0, 0, width / 2, height / 2)” for every viewpoint.

2. Moving teapot:

With the help of changing camera position on every elapsed second via lookAt function.

```
GLdouble xp = 2.0f * cos(ONE_DEG_IN_RAD * last_angle);  
GLdouble zp = 2.0f * sin(ONE_DEG_IN_RAD * last_angle);  
  
glm::lookAt(glm::vec3(xp, 0.0f, zp), glm::vec3(0.0f, 0.0f, 0.0f),  
glm::vec3(0.0f, 1.0f, 0.0f))
```

3. Orthographic projection:

Used the glm::ortho function.

```
glm::ortho(-2.0f, 2.0f, 2.0f, -2.0f, 0.0f, 10.0f)
```

4. Perspective projection:

Anton's math class had a perspective projection function to do the same.

```
perspective(60.0, (float)width / (float)height, 0.1, 100.0)
```

5. LookAt function:

```
glm::lookAt(glm::vec3(0.0f, 2.0f, 0.0001f), glm::vec3(0.0f, 0.0f,  
0.0f), glm::vec3(0.0f, 1.0f, 0.0f))
```

