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| 컴퓨터 그래픽스 | | | | | |
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1. Which requirements you implemented
   1. Camera control : orbit, panning, zooming
   2. Toggle : perspective to ortho, ortho to perspective
   3. Drawing grid line
2. A few screenshot images of your program

제대로 Camera moving이 되었는지 확인하기 위해 x, y, z 축에 대해 Frame을 그렸음.

* 1. Camera control
     1. Orbit

|  |  |  |
| --- | --- | --- |
| 움직이기 전 | 움직인 후 | upvector가 바뀌는 모습 |
|  |  |  |
| orthogonal – 움직이기 전 | orthogonal – 움직인 후 | ortho – upvector 변화 |
|  |  |  |

* + 1. Panning

|  |  |
| --- | --- |
| 움직이기 전 | 움직인 후 |
|  |  |
| orthogonal – 움직이기 전 | orthogonal – 움직인 후 |
|  |  |

* + 1. Zooming

|  |  |  |
| --- | --- | --- |
| zoom in | normal | zoom out |
|  |  |  |
| orthogonal – zoom in | orthogonal – normal | orthogonal – zoom out |
|  |  |  |

orthogonal projection은 w가 아니라 input 값에 zoom 한 만큼 곱해서 들어가도록 구현했음.

1. Toggle

|  |  |
| --- | --- |
| Perspective projection | Orthogonal projection |
|  |  |

1. Draw Grid

|  |  |
| --- | --- |
| Perspective projection | Orthogonal projection |
|  |  |