A3 Moving Planets

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1. Consistent animation speed by using time stamps (glfwgetTime())
2. There are total Nine spheres and eight spheres are rotating around the Sun. Where Sun is located in (0,0,0). Size, revolution radius, rotate speed … are scaled by some value first.
3. Planets are also self-rotated according to their roation speed.

Panning

The eye and at moves around UV plane. By amount of mouse moved and by direction it moved on monitor, the eye and at moves around UV plane.

The x-axis difference in mouse movement becomes U difference and the y-axis difference in mouse movement becomes V difference. So by multiply with those with U,V vector it becomes the difference of UV.

It is applied by changing view matrix using look at method.

Zooming

The eye moves along n axis. By amount and direction of y-axis movement, it zoomed-in or zoomed-out. Also the eye does not goes through the At which eye sees. It only closed to at.

It is applied by changing view matrix using look at method.

Additional

The tracking movement is maintained while panning and zooming. By saving the eye, at, up value when after trackball moves, it can pan and zoom continually at that situation.