



Assignment: Solar System (CG-02.03A)

Version 2.0

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• **Main Assignment**

- Write an OpenGL program to draw an animated solar system with several planets orbiting a sun. Each planet shall have one or more moons circling the planet. Use the provided template “CG-02.03A - Solar System” as a starting point for your program.
- For planets and moons you may use different GLUT 3D primitives (spheres, etc.).
- Use different rotation directions and speed for orbit movement and planet rotation.
- Implement a GLUT idle callback function for continuous animation frame update.
- In the provided pop-up menu add the functions to start and stop the animation.

• **Programming Tips**

- Use GLUT solid drawing functions for geometric primitives and enable wire frame drawing mode with back-face culling enabled to see the rotation of planets and moons.
- In order to get a smooth animation you might need to experiment with different increment values for the rotation angles.

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• Additional Assignment

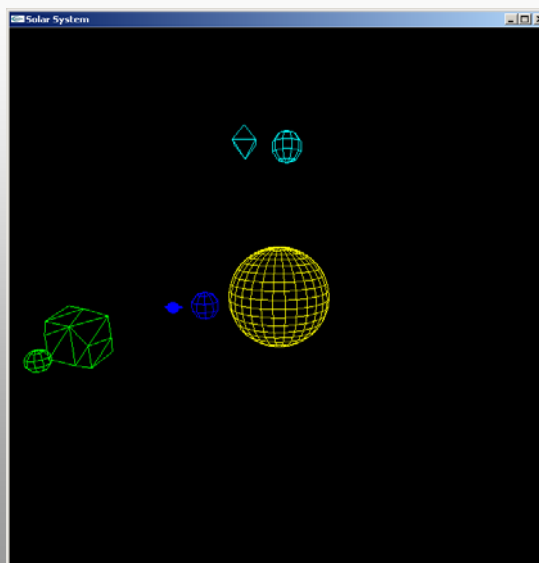
- Try to implement a planet or moon, with an orbiting plane perpendicular to the sun's equatorial plane.
- Try to tilt the rotation axis of a planet.
- Change the provided orthographic projection into a perspective projection using the `gluPerspective()` function.

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• Solution



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