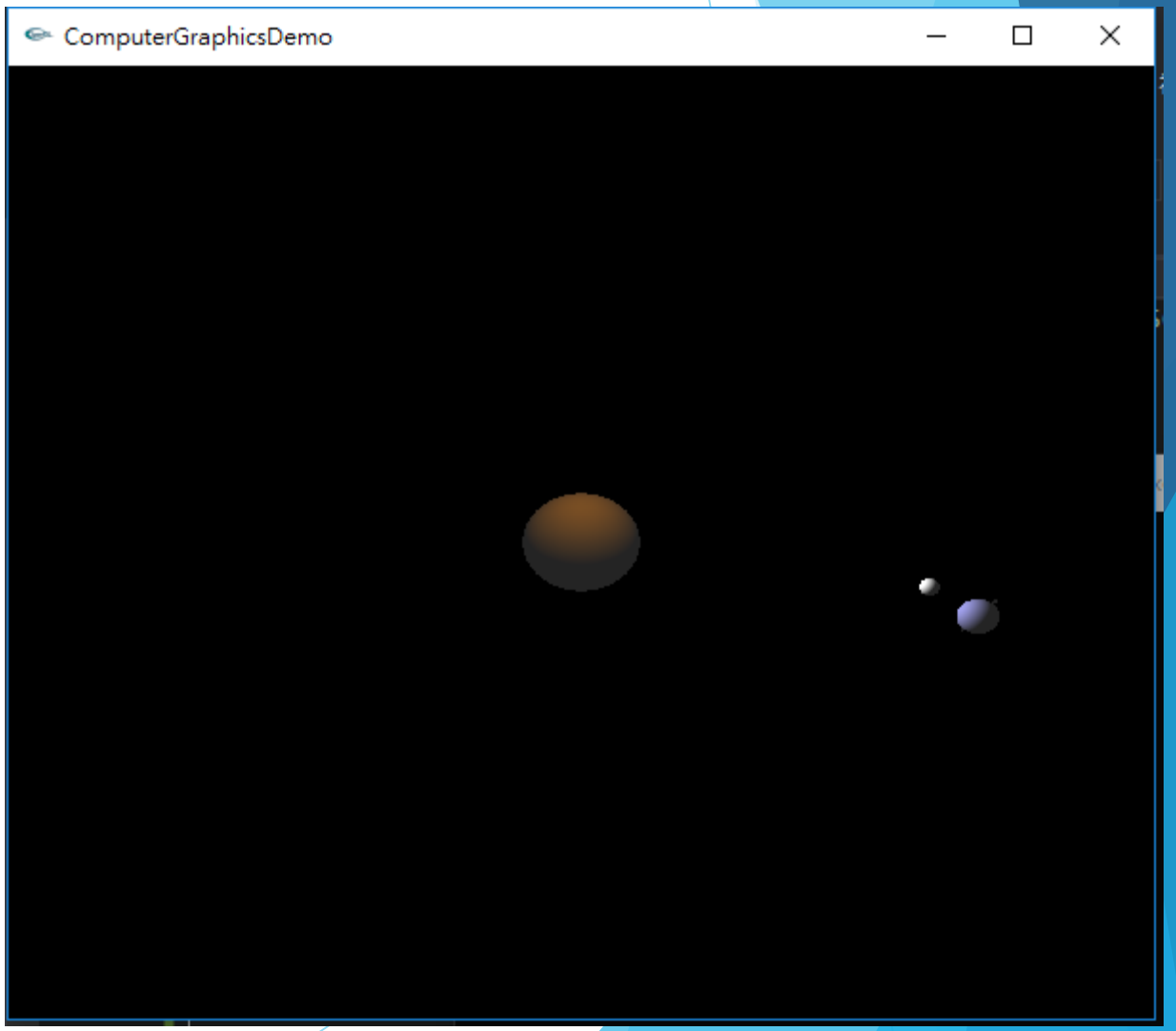
HW1

Introduction

- Draw three sphere: sun, earth, moon.
  - (can not use glutwiresphere and glutSolidsphere)
- Draw the spin axis of the earth.
- Implement rotation and revolution.
  - (use glPopMatrix and glPushMatrix)



Spec

- Global value:
  - Degree: X(any value)
  - Radius: Y(any value)
- Camera:
  - Position: (0, 50, 50)
  - Center: (0, 0, 0)
  - Up vector: (0, 1, 0)
- Light:
  - Position: (0, 10, 0)
  - Diffuse: (1, 1, 1, 1)
  - Ambient: (0.5, 0.5, 0.5, 1);
- Keyboard:
  - P(p): pause
  - O(o): switch the slice and stack of earth

Spec

- Sun:
  - Position: (0, 0, 0)
  - Slice: 240
  - Stack: 60
  - Rotation: 0
  - Radius: 6*Y
  - Diffuse material: any

Spec

- Earth:
  - Slice: 360/4 (switch when pressing key ”o”)
  - Stack: 180/2 (switch when pressing key ”o”)
  - Rotation: X
  - Revolution: X/365
  - Radius: 2*Y
  - Obliquity: 23.5
  - Length of rotation axis: 4*Y
  - Revolution radius(around sun): 20
  - Diffuse material: any

Spec

- Moon:
  - Slice: 240
  - Stack: 60
  - Rotation: X/28
  - Revolution: X/28
  - Radius: Y
  - Revolution radius(around earth): 3
  - Diffuse material: any

Upload

- Zip your
  - (1) visual studio project

    or
  - (2) source code + Makefile
- Into “HW1_<student_id>.zip”, then upload.

Supplement

- If you can't draw sphere successfully, you may use "glutsolidsphere()", but you won't get score of this part.
- You can use any mode to draw your sphere(ex. GL_TRIANGLES, GL_TRIANGLE_STRIP, GL_QUADS)
- You can draw polygons in any order, just make sure that it makes sense.