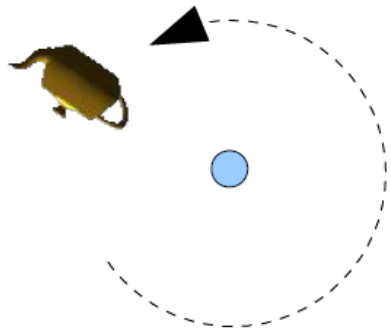
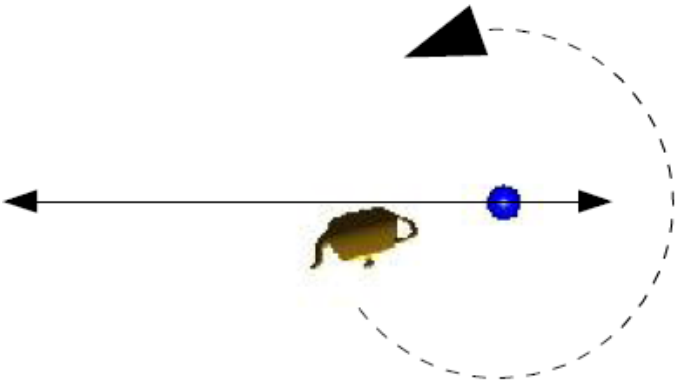
TP2: 3D Transformations

1. Use glRotatef and glTranslatef to make the teapot rotate 4 units around z axis.

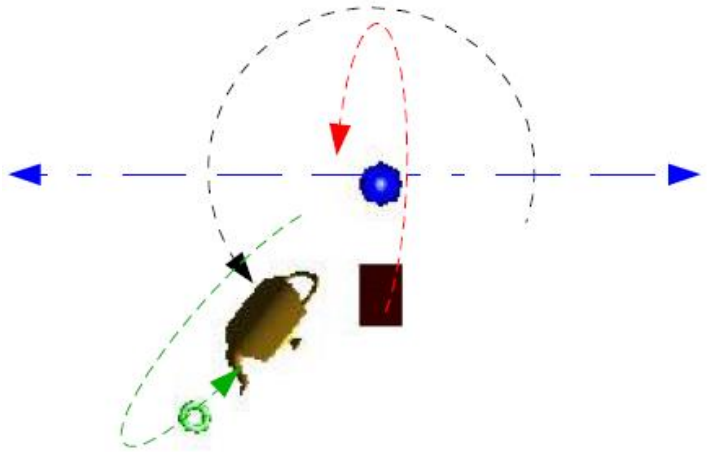


2. Composition of transformations. Following the previous exercise, lets add a translation to x= -8 to x = 8 (round trip). We will identify the center of rotation with a blue sphere.



3. Use a “glutSolidTorus" and make it spring around the teapot’s y axis. The torus follows the teapot’s linear movement. The torus should spin at 3 units from center and 3 times faster than the teapot.

Then, take a glutSolidCube of size 2. It must spin independently around X axis of the blue sphere. Use glPushMatrix() and glPopMatrix().



4. Solar System!

* Yellow sphere of size 4 with origin (0,0,0) will be the sun.
  * Sun will spin itself at velocity Vs.
* Around it, earth will be blue and size 2. Earth's velocity will be Vt and it will be 10 units far from sun.
  * VT = 3Vs is the earth's spin around its own axis.
* Around earth the moon will spin at velocity Vl = 2Vt.
  * VL= 1.5 Vs is the spin around its own axis.
* Add Mars at 18 units from sun. Its velocity around the sun is Vm = Vt. It will spin in its own axis at VS.