

```

1  #Objects
2  Earth = sphere(pos=vector(0,0,0), radius=6.4e6, material=materials.BlueMarble)
3  Satellite = sphere(pos=vector(7*Earth.radius, 0,0), radius=1e6, color=color.red, make_trail=True)
4
5  #Parameters and Initial Conditions
6  mSatellite = 1
7  pSatellite = vector(0,5000,0)
8
9  #Time and time step
10 t = 0
11 tf = 60*60*24
12 dt = 1
13
14 #MotionMap/Graph
15 SatelliteMotionMap = MotionMap(Satellite, tf, 20, markerScale=2000, labelMarkerOrder=False)
16
17 #Calculation Loop
18 while t < tf:
19     rate(10000)
20
21     Fnet = vector(0,0,0)
22
23     pSatellite = pSatellite + Fnet*dt
24     Satellite.pos = Satellite.pos + (pSatellite/mSatellite)*dt
25
26     SatelliteMotionMap.update(t, pSatellite/mSatellite)
27
28     t = t + dt
29
30     #Earth Rotation (IGNORE)
31     theta = 7.29e-5*dt
32     Earth.rotate(angle=theta, axis=vector(0,0,1), origin=Earth.pos)

```