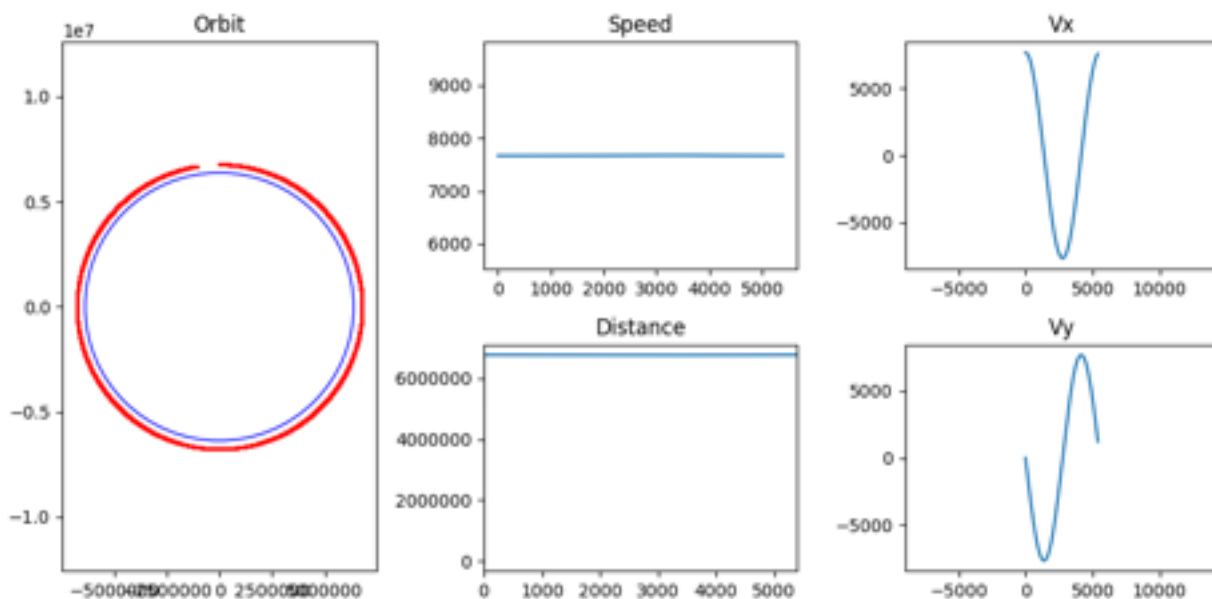


Print your name: Yusuf Bham

Today's date: 2019-10-22

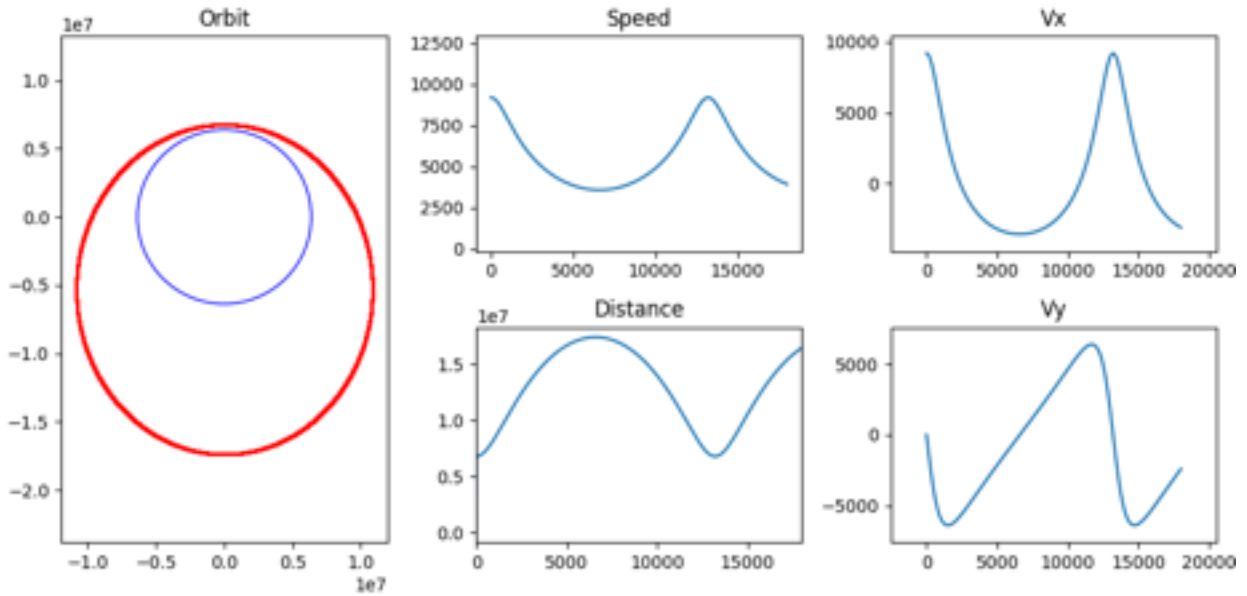
Class period: 3rd

1. Earth and a satellite in orbit.
2. Assume a point mass at the origin not moving.
3. Circular orbit. Duration is 90 minutes.
4. Initialize $y = R + 400 \text{ km}$, and $v_x = \sqrt{G \cdot M / y}$.
5. Loop, update position and velocity each Δt timestep.
6. Plot trajectory, and speed and distance over time.
7. Can include surface of Earth in trajectory plot too.

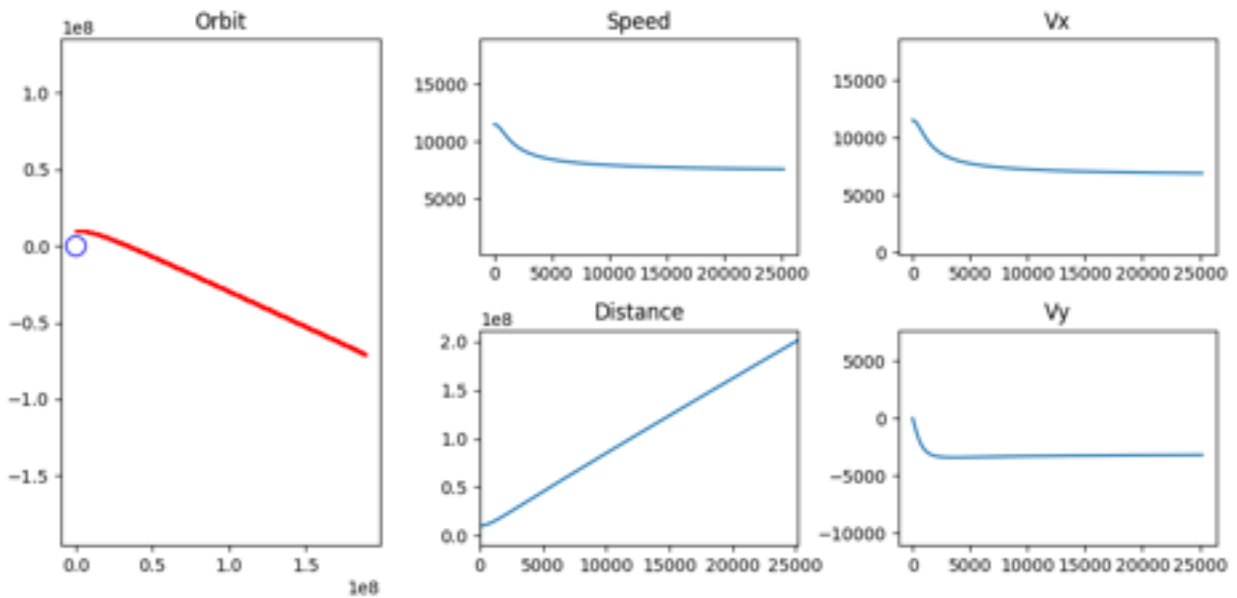


8. Elliptical orbit, $v_x + 20\%$, duration 4 or 5 hours.

9. Same plots, but include vx and vy over time as well.



10. Hyperbolic orbit, vx + 50%, x and y farther away.



END