BITS F327
Assignment 1

Due Date: 15/02/2023 Total marks 10

1. Develop a circle and line representation of a robot.Take user input of a position (x,y) and orientation (theta) to place the robot in the plot.
   a. Generate a parametric equation for a trajecctory (x vs t and y vs t, theta vs t, 0<=t<=1), where the starting point is at the origin of the Global frame, and plot it. Also find the linear and angular velocities by diffierntiating the parametric equations and plot. [3]
   b. Divide the path parametrically in many small segments, use a loop to plot the agent at those posees generated by the parametric equations. (orientation of the robot can be found from the slope of the trajectory). [5]
   c. Develop a video based on the series of plots generated for the agent. (Take at least 100 parametric steps such that if you are going to make 24 fps video it will generate ~4 s video file) [2]

Submission:
1. Doc file with the plots of 1a
2. Python file with the complete code
3. Video file generated for the simulation.