

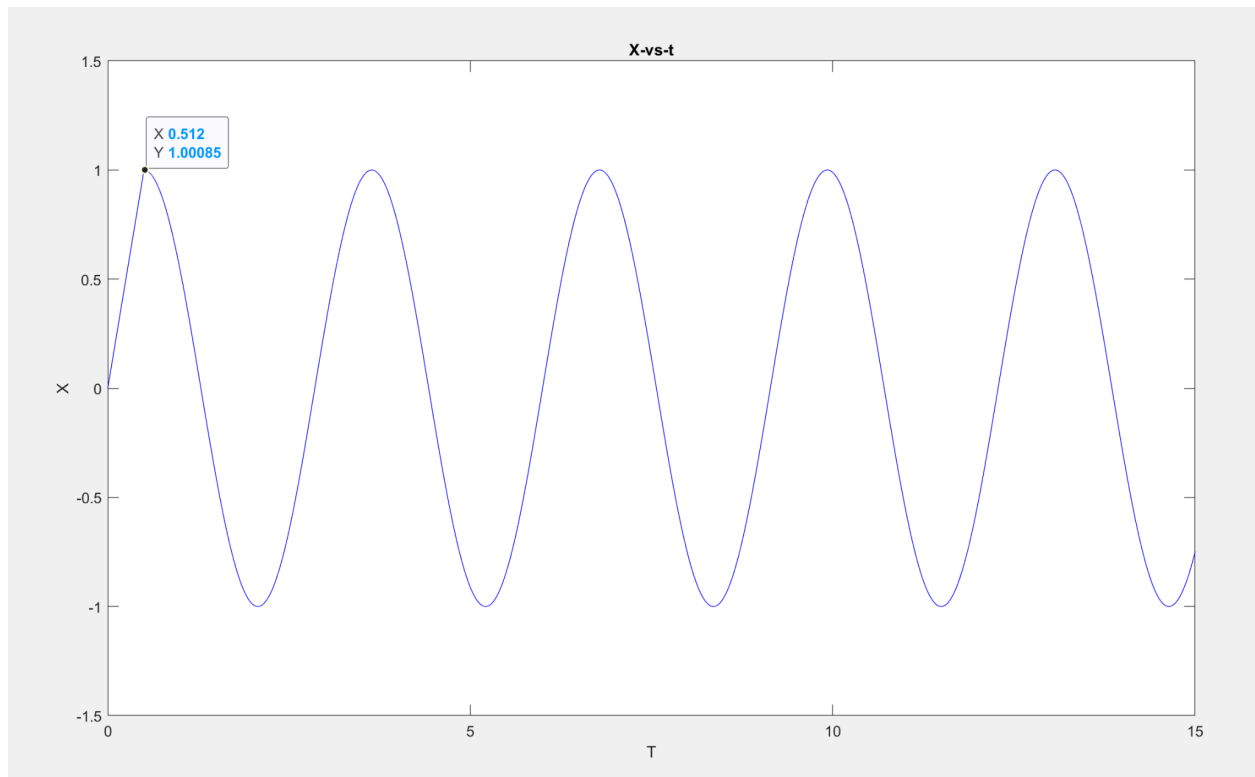
Robotics

Assignment-2

Submitted By

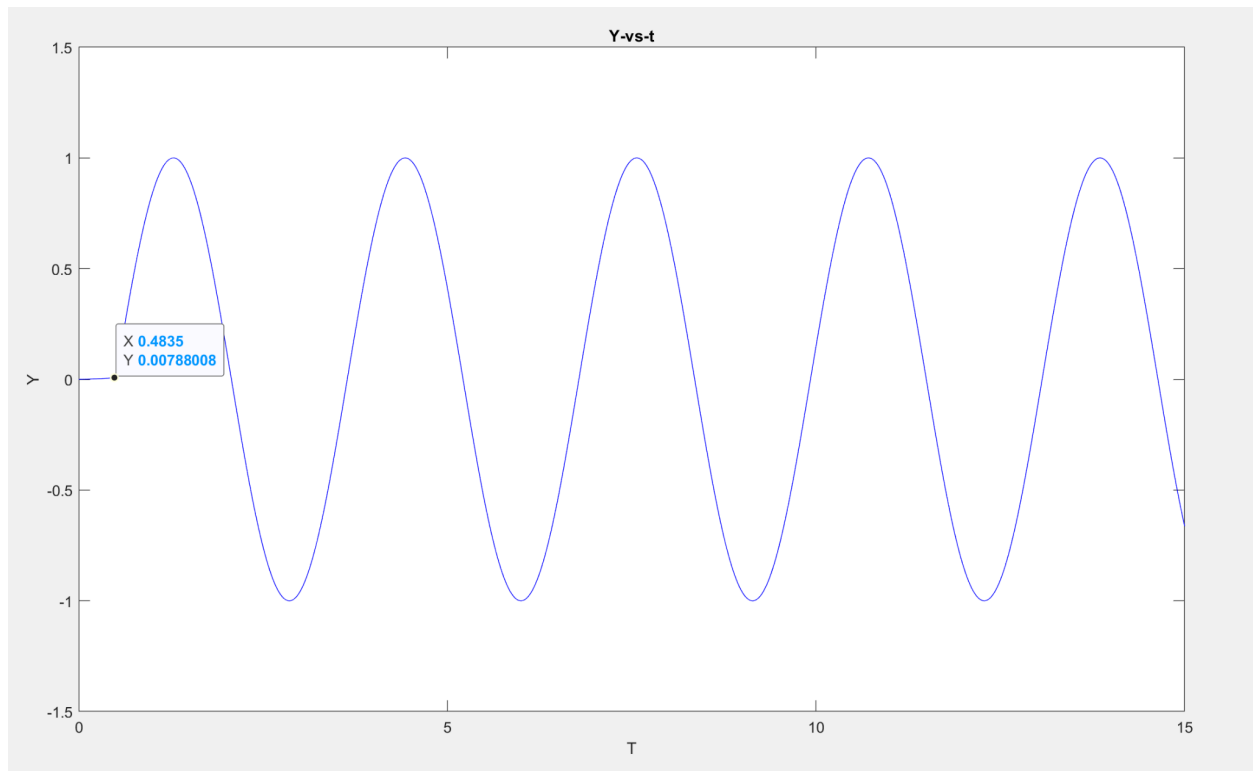
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2021019

Plot 1: x vs t



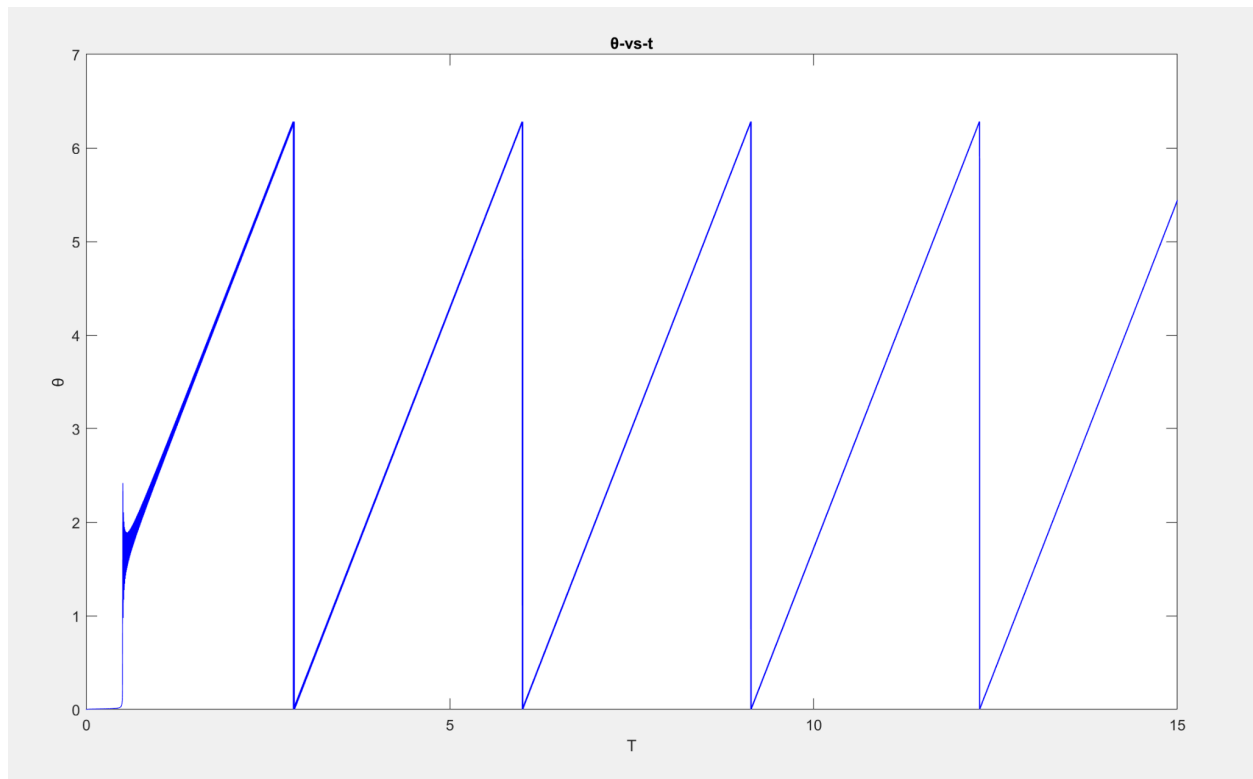
The graph starts out linearly, in an attempt to get on the circular path, which it reaches roughly 0.5 seconds after starting, and that's when it reverts to a cosine relationship with T , to track the circular trajectory.

Plot 2: y vs t



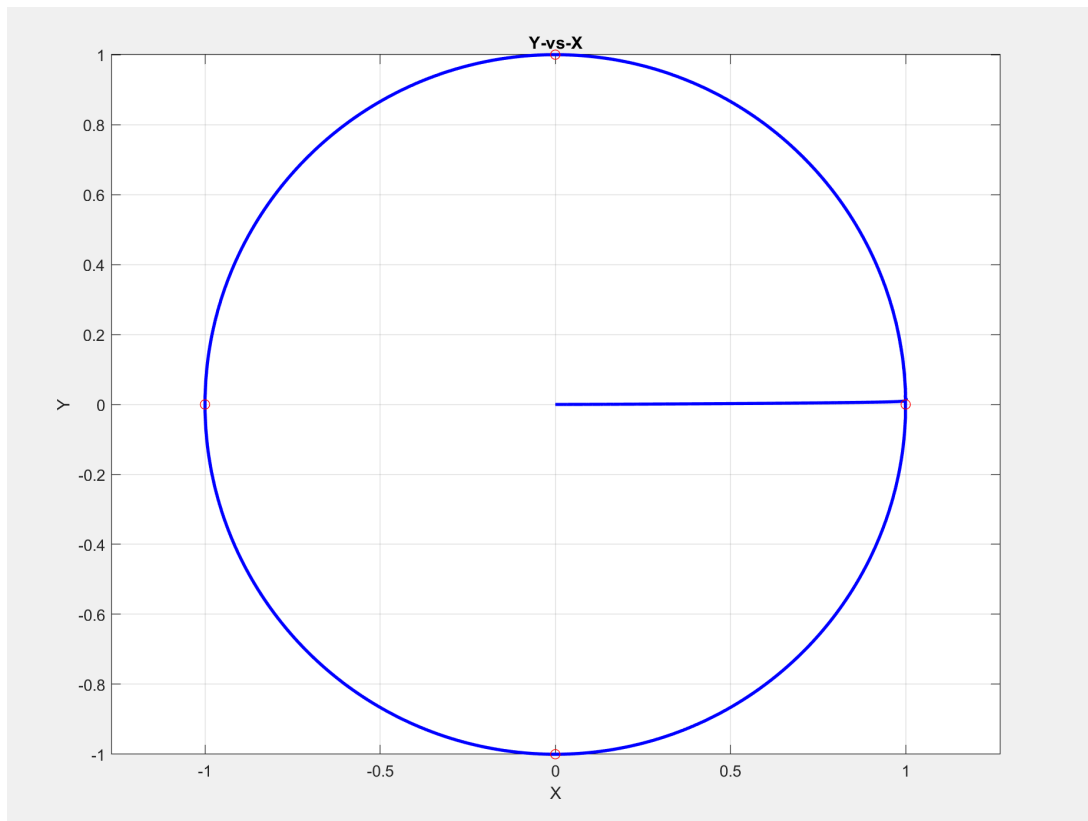
The graph starts out being roughly constant with time, since the robot is by and large speeding along the x axis , in an attempt to get on the circular path, which it reaches roughly 0.5 seconds after starting (same as in the last graph), and that's when it reverts to a sine relationship with T, to track the circular trajectory.

Plot 3: θ vs t



The graph starts out in a choppy fashion, rising up quickly and then oscillating around before smoothing out by the time the robot completes its first rotation around the circle, this sawtooth shape is attributable to the fact that $2\pi=0$, restarting the sawteeth every ~ 3.14 seconds.

Plot 4: X vs Y



The robot begins moving from its initial position , the origin, at 0 seconds at 2 units per seconds and meets the circle just above (1,0), and then keeps on tracking the circular trajectory, with minor deviations, which are well within the generally accepted error tolerance.