

Octobotics Coding Assignment Report

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Code Base:-

Github Link:

https://github.com/Tanishq30052002/Octobotics_Coding_Assignment.git

Recordings:

https://drive.google.com/drive/folders/1n5DfcHNryxCBc7SQNSmjcJeMa_W8oVzV?usp=sharing

Problem Solving Strategy:-

Task_1: Used the condition provided in the PS to set the initial parameters of the pendulum.

Task_2: We were supposed to provide the sinusoidal wave input to the cart with different frequencies and different amplitudes and needed to plot them. So the program is executed in such a manner that it takes the input of amplitude and frequency from the user and forms the sinusoidal control force.

Task_3: We were supposed to control the pendulum in an inverted position by moving the cart through the control force, so for such a case I assumed the pendulum initially at some angle from the exact top position. Now using the PID control we managed the force that needed to be applied to the cart for balancing the pendulum at the top.