README

The type of controller used here is the feedforward-plus-P controller. The constant for the proportionality (P) controller is a 6*6 matrix with all diagonal elements as 4 and all other elements having value as 0. The constant for the integral (I) controller is a 6*6 matrix with all diagonal elements as 0 and all other elements having value as 0.

The code takes some time to run because of the number of lines to be written in the csv files of configuration and error by the program.

For changes to be made in the common code to make it newTask :

Please change the code accordingly :

1] kpmat=np.diag(np.full(6,4))

2] kimat=np.diag(np.full(6,0))

The initial cube configuration is (x,y,theta)=(1.5,0.5,0).

The final cube configuration is (x,y,theta)=(0.5,1.5,1.57).

Please input the configurations accordingly :

Specify the initial configuration of the cube having 3 elements of the vector : x,y,theta
1.5
0.5
0
Specify the final configuration of the cube having 3 elements of the vector : x,y,theta
0.5
1.5
1.57
Specify the initial desired configuration of the youbot having 12 elements of the vector : transformatio
n matrix with no last row
0
0
1
0
0
1
0
0
-1
0
0
0.5
Specify the joint velocity limit for joint 1
7
Specify the joint velocity limit for joint 2
7
Specify the joint velocity limit for joint 3
7
Specify the joint velocity limit for joint 4
7
Specify the joint velocity limit for joint 5
7
Specify the wheel velocity limit for wheel 1

5
Specify the wheel velocity limit for wheel 2
5
Specify the wheel velocity limit for wheel 3
5
Specify the wheel velocity limit for wheel 4
5
Specify the timestep between successive configurations
0.01
Specify the initial actual configuration of the youBot having 13 elements of the vector
0.7854
-0.3
0
0
-1.57
0
0
0
0
0
0
0
0