

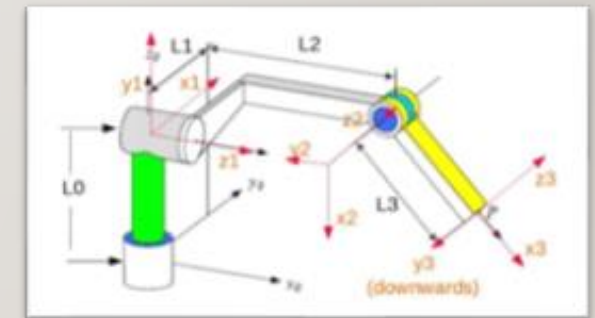
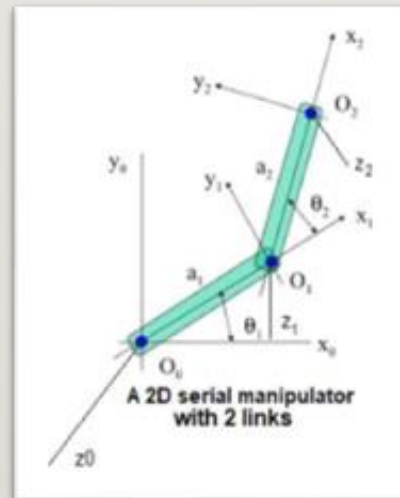
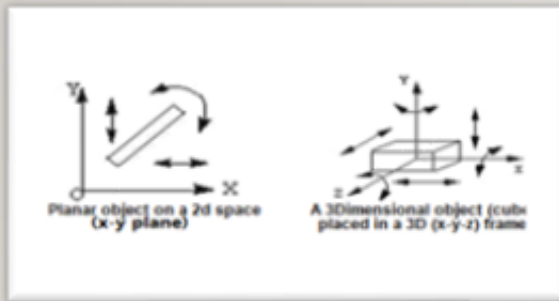
ROC - 2021

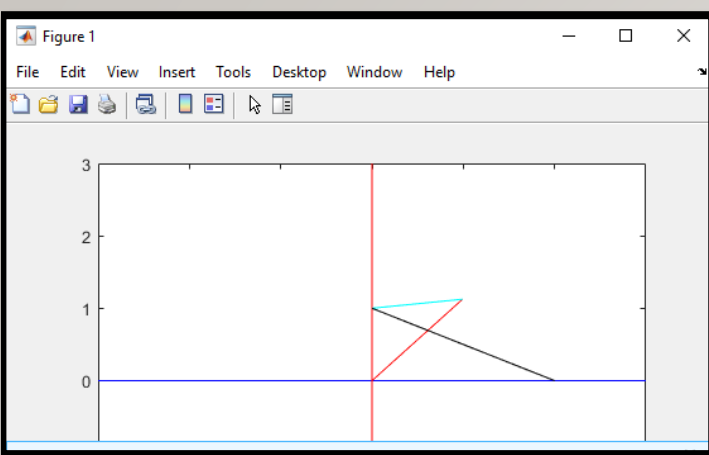
We certify that this project was undertaken by the members of **TEAM NO.B1** for the RoboAnalyzer based Online Competition (ROC) as a virtual summer internship conducted by Dr. Nayan M. Kakoty of Tezpur University, Assam in collaboration with Prof. S K Saha of IIT Delhi, New Delhi and Mr. Rajeevlochana C.G. of Amritha Vishwa Vidyapeetham, Bengaluru during May – July 2021.

Team Members:

1. Katta Tejashwini Reddy, JNTUH, Team co-Coordinator.
2. Peeyusha Kollipara, JNTUH, Team member.
3. Prithwish Sarkar, MAKAUT, WB, Team Co-Ordinator (Acting).

TASK – I (A moderated Output from all 4 members)



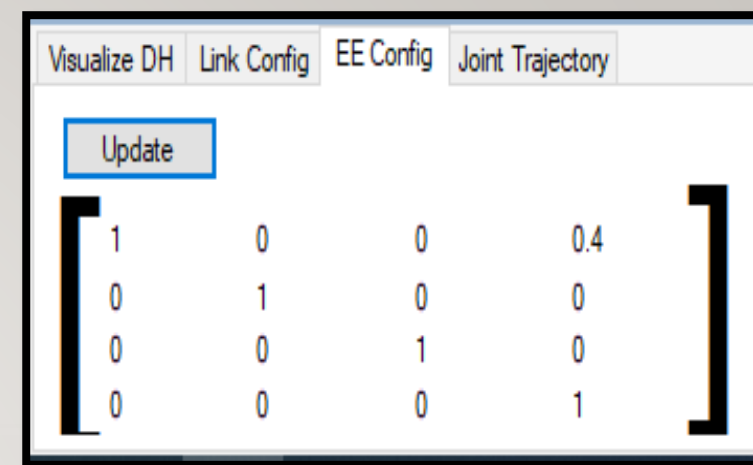


MATLAB
-The Mathematical way

TASK-2

KEEP GOING, NEVER GIVE UP

- Searching for information...
- Going through the videos.
- Executing the code and getting the outputs.
- Using Roboanalyzer to perform the same experiment on the same robot with the same parameters.
- Tally the results.
- Job done !!!!

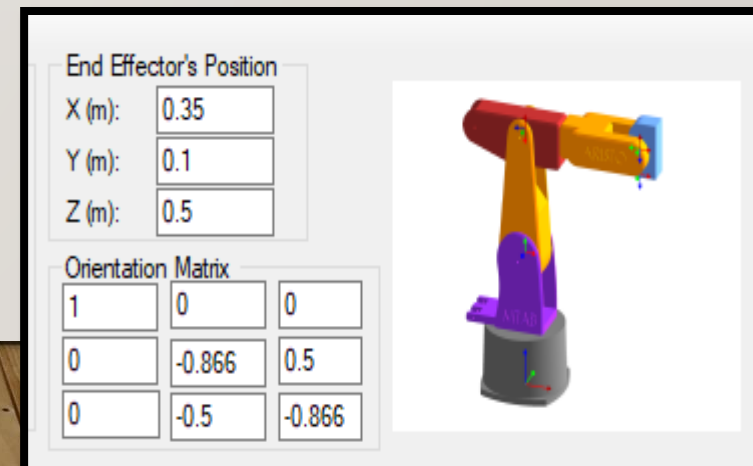


ROBOANALYZER
- The Analytical way

```

1 - [clear all; clc;
2 - a1 = 1;
3 - a2 = 0.75;
4 - a3 = 0.5;
5 - theta1degmin = 0; theta1degmax = 60;
6 - theta2degmin = 30; theta2degmax = 90;
7 - theta3degmin = 60; theta3degmax = 120;
8
9 - theta1min = theta1degmin*pi/180; theta1max = theta1degmax*pi/180;
10 - theta2min = theta2degmin*pi/180; theta2max = theta2degmax*pi/180;
11 - theta3min = theta3degmin*pi/180; theta3max = theta3degmax*pi/180;
12 - noOfSteps = 50;
13 - deltaTheta1 = (theta1max - theta1min)/noOfSteps;
14 - deltaTheta2 = (theta2max - theta2min)/noOfSteps;
15 - deltaTheta3 = (theta3max - theta3min)/noOfSteps;
16
17 - theta1 = theta1min; theta2 = theta2min; theta3 = theta3min;

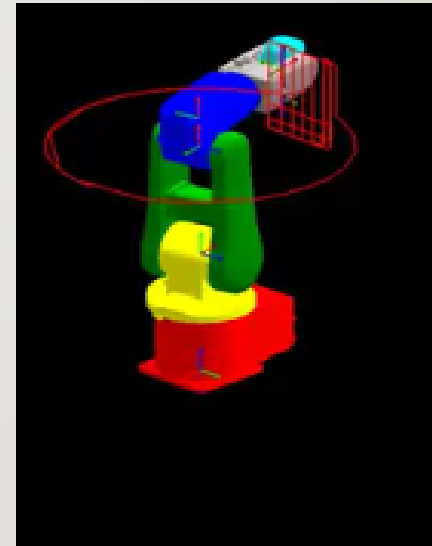
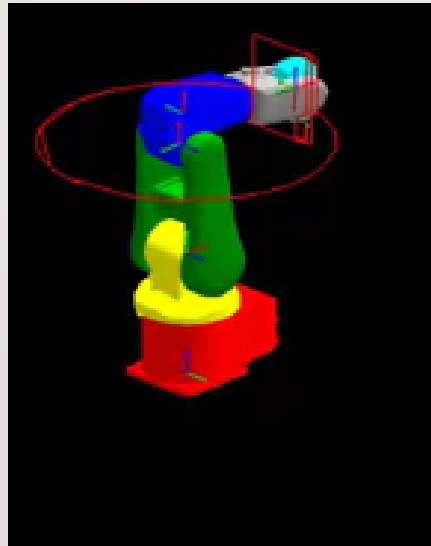
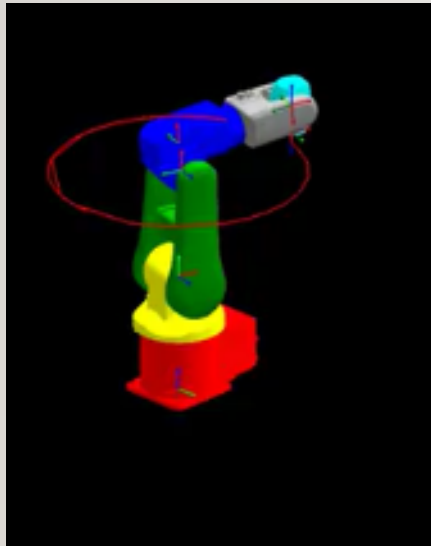
```



TASK - 3

DIVIDE AND RULE !!!!

(Each member takes up the part of the job they know the best)



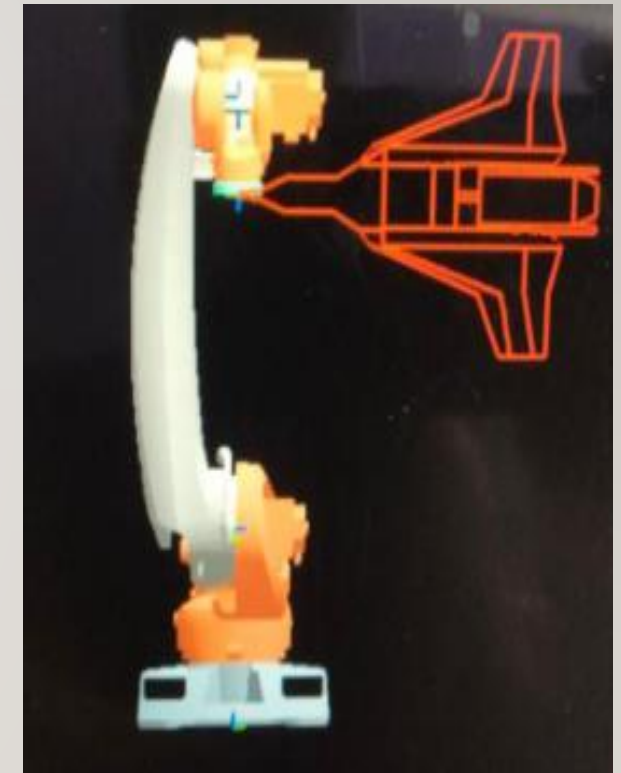
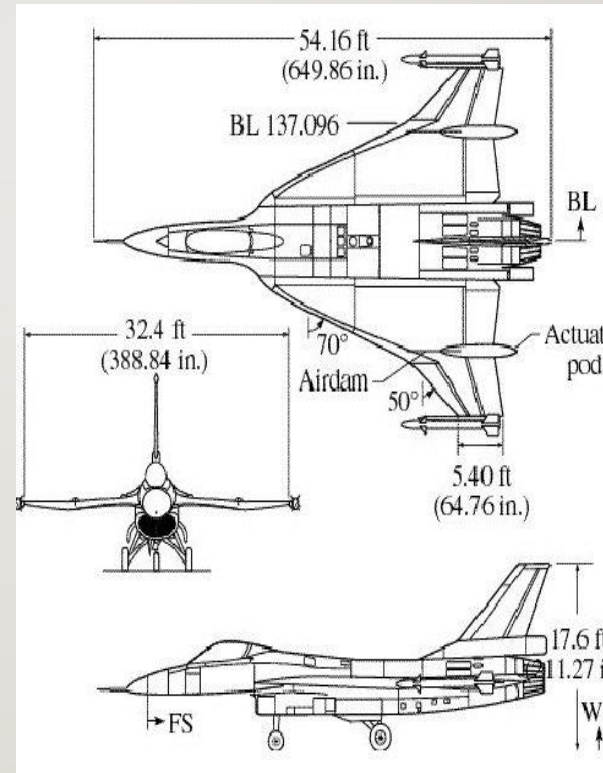
TASK - 4

UNLEASHING CREATIVITY...

```
Editor - C:\Users\LENOVO\Downloads\final.m
FKin_1R.m x FKin_2R.m x FKin_3R.m x FKin_3R_Animati
18 p = p0 + t*deltap;
19 pXarray(i) = p(1);
20 pYarray(i) = p(2);
21 pZarray(i) = p(3);
22 end
23
24 deltap = p2 - p1;
25 existingtrajectory = length(pXarray);
26 for i=1:n
27     t = tarray(i);
28     p = p1 + t*deltap;
29     index = existingtrajectory + i;
30     pXarray(index) = p(1);
31     pYarray(index) = p(2);
32     pZarray(index) = p(3);
33 end
34
35 deltap = p3 - p2;
36 existingtrajectory = length(pXarray);
37 for i=1:n
38     t = tarray(i);
39     p = p2 + t*deltap;
40     index = existingtrajectory + i;
41     pXarray(index) = p(1);
42     pYarray(index) = p(2);
```

A	B	C	D	E	F	G
1	800	0	800	180	0	0
2	800	1.0101	800.15	180	0	0
3	800	2.0202	800.3	180	0	0
4	800	3.0303	800.45	180	0	0
5	800	4.0404	800.61	180	0	0
6	800	5.0505	800.76	180	0	0
7	800	6.0606	800.91	180	0	0
8	800	7.0707	801.06	180	0	0
9	800	8.0808	801.21	180	0	0
10	800	9.0909	801.36	180	0	0
11	800	10.101	801.52	180	0	0
12	800	11.111	801.67	180	0	0
13	800	12.121	801.82	180	0	0
14	800	13.131	801.97	180	0	0
15	800	14.141	802.12	180	0	0
16	800	15.152	802.27	180	0	0
17	800	16.162	802.42	180	0	0
18	800	17.172	802.58	180	0	0
19	800	18.182	802.73	180	0	0
20	800	19.192	802.88	180	0	0
21	800	20.202	803.03	180	0	0
22	800	21.212	803.18	180	0	0
23	800	22.222	803.33	180	0	0

final



ALL'S WELL THAT ENDS WELL !!!

THANK YOU