ROC 2021

Team Members (Team D2):

1. Joyshree Dutta (Team Coordinator)
2. Srinjoy De Joardar
3. Sharanya
4. Vivek
5. Manish
6. Apurba
7. Sisira

"We certify that this project was undertaken by us for the RoboAnalyzer-based Online Competition (ROC) conducted by Dr. Nayan M. Kakoty of Tezpur University in collaboration with Prof. S.K Saha of IIT Delhi and Mr. Rajeevlochan C.G. of Amrita Vishwa Vidyapeetham, Bengaluru Campus during May 2, 2021 to June 29, 2021."
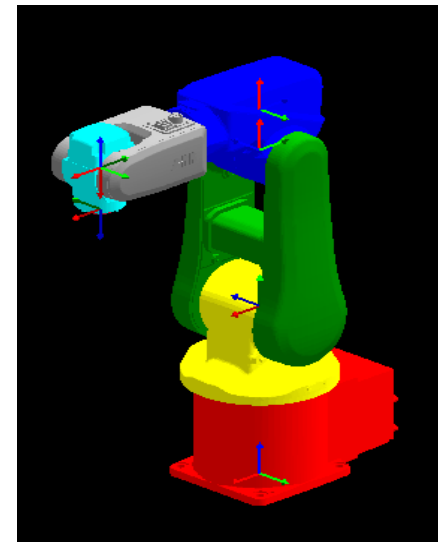
TEAM D2

ROC 2021

TASK 4 OUTLINE

TASK:

To write the acronym "ROC" using Virtual Robot Simulator

METHOD :

Robot used: ABB IRB 120

The lettering was first planned on a grid paper. Then cartesian control in relative mode was used to dictate the motion of the end effector. The final coordinates of the end effector were recorded at the end of each step and the increments for (X, Y , Z) were accordingly set for the next increment.
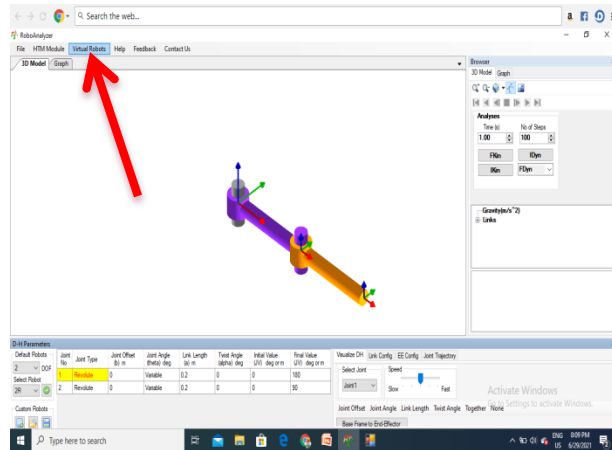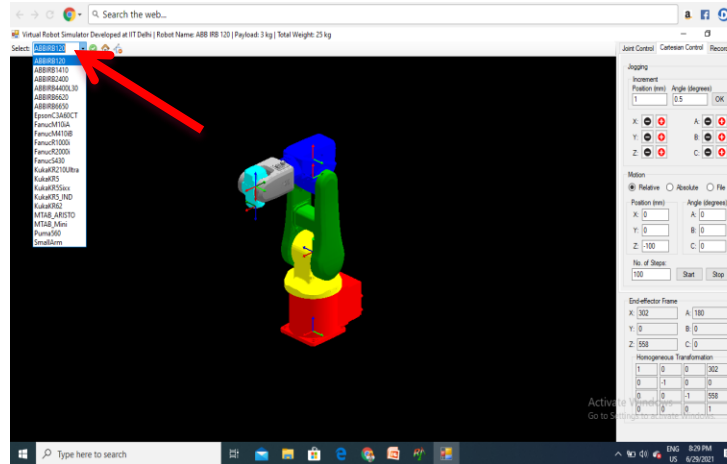
**Virtual Robot
ABB IRB 120**

In overall, Cartesian Jogging is used to perform the aforementioned task.

STEPS INVOLVED IN THE TASK

Step 1: At first we opened the RoboAnalyzer Software, and we selected the Virtual Robots tab to open The Virtual Robot Simulator.
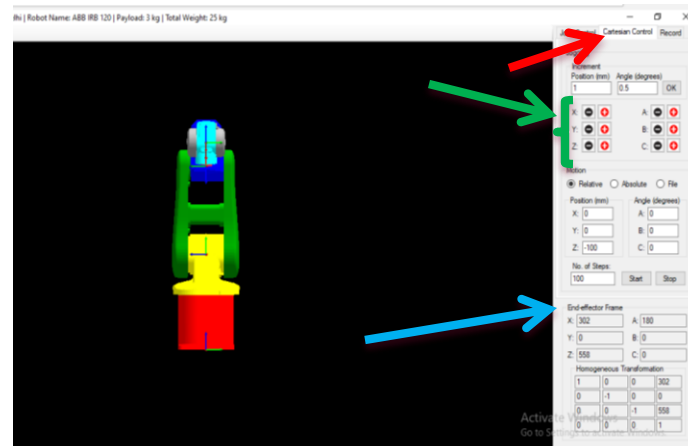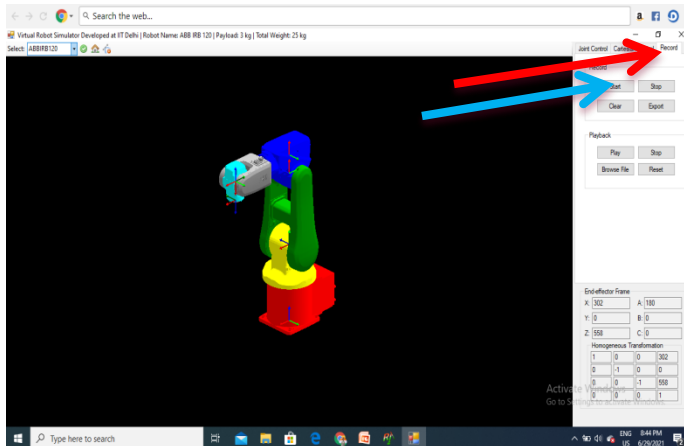
Step 2: The Virtual Robot Simulator interface opens and here, we have many inbuilt virtual robots. We select the Virtual Robot, namely the ABB IRB 120, for our task.
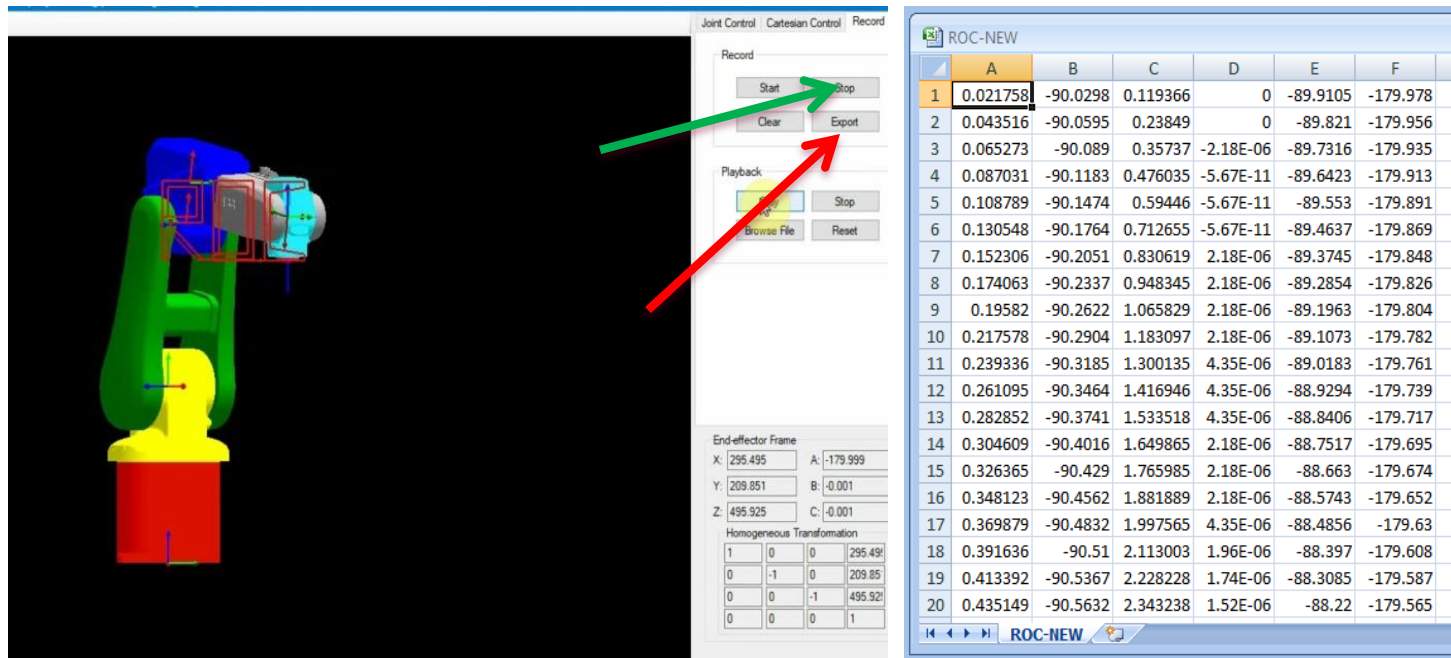
Step 3: Next, we pressed the record tab and started recording our robot motion. On recording the controls of the robots, it is recorded in the form .csv file for the position of end effector at different points. This file can be accessed anytime to view the output from the appropriate file location.

Step 4: Now, switching on to the Cartesian Control, we put up all the position values required for writing the term "ROC" as planned on the grid paper. The final coordinates of the end effector were recorded at the end of each step and the increments for (X, Y , Z) were accordingly set for the next increment.

SAVING THE RECORDED MOTION

The recording which was started with step 3 now has to be stopped on completion of the task and saved in the device and this get recorded in the form .csv file as shown below representing the position of end effector at different points. This file has now to be saved (using Export icon) in the appropriate file location so that it can be accessed anytime to view the output from that directory.
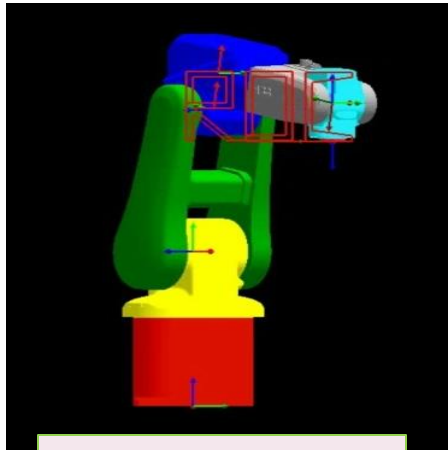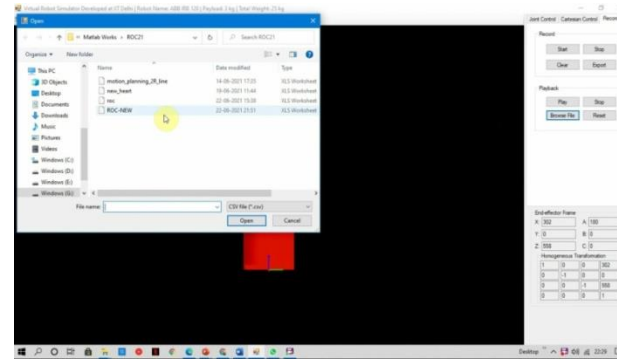
EXECUTION (PLAY) OF THE RECORDED MOTION

To play the recorded motion, we click on the play icon under the Record option and choose the saved file (.csv type) from the appropriate location and then open it to run the recorded motion.

Desired output

Some other forms of the write-up in Front View and Isometric Views respectively

Conclusion: The selected robot writes down the term "ROC" as per the given position values. This project has helped us learn the basic concepts of robotic in an easy, interesting and innovative way.