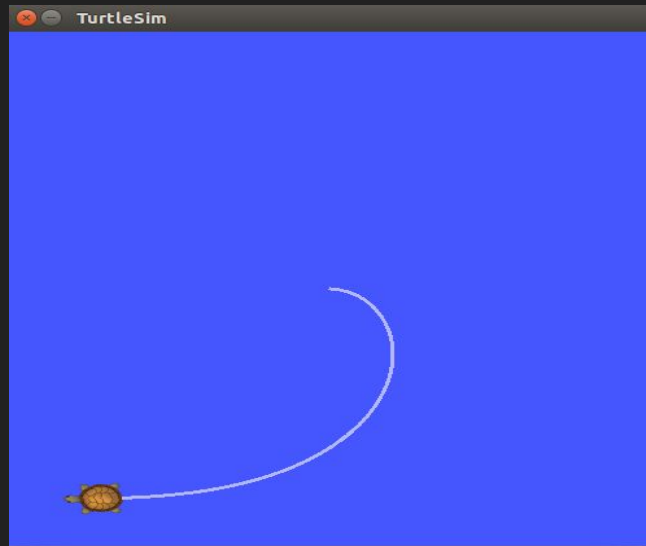


Cleaning Robot With Turtlesim



Team Members

Manisha -PES1UG19EC139
Sanjeev Sannihith-PES1UG19EC140
Eesha Kothuru-PES1UG19EC141
Navya Sree Paladi-PES1UG19EC192

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Problem Statement:

Simulating a cleaning robot using Turtlesim

Objective:

- Understand the objectives and tasks of the turtlesim cleaning applications
- Recognize the different functions to be developed for the cleaning application

Working:

- To develop a function to make the robot move in a straight line forward and backward
- Understand how to choose the right ROS topic to publish a message for a certain functionality
- Use the Twist message to send linear velocity commands to move in straight line
- Control the distance traveled by the robot

Working:

- Understand rotation conventional assumptions
- Develop a function to make the robot rotate left and right
- Use the Twist message to send angular velocity commands to rotate
- Set the desired orientation of the robot after rotation
- Develop and use some basic functions related to rotation
- Use the move and rotate functions to develop the cleaning applications and area coverage.

Concepts Used:

Turtlesim

Publisher-subscriber

turtle1/cmd_vel topic

turtle1/pose

Geometry msg

PID control

Demo video:

THANK YOU