Palestine Polytechnic University
College of IT & Computer Engineering

جـــــامـعـــة بـوليتكنـــــك فلســـطيـــــن
كـــــلـية هندسة الحاسوب وتكنولوجيا المعلومات

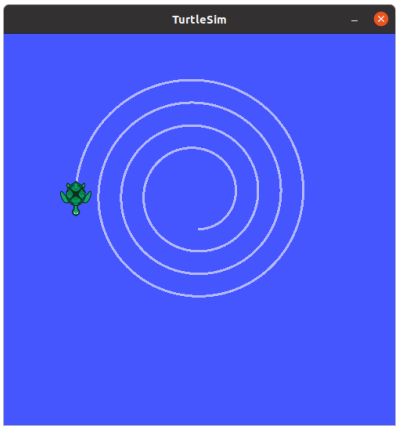
Autonomous Systems and Robot
Mini Project

Description:
You need to develop a motion trajectory for turtlesim such that the user can select the desired trajectory and the system prompts him to enter the required parameters for that trajectory then the turtle robot will move according to the required trajectory. Write a python script that prompt the user to enter the following list to the user:

Select one of the following motion trajectories for turtle robot:
1. Square
2. Tringle
3. Circular
4. Spiral
5. Point to Point
6. Hexagon
7. Wave motion
8. Exit

You need to consider the following

1. For square trajectory the system prompts to enter edge dimension
2. The triangle trajectory the robot will draw an equilateral triangle and it prompts the user to enter a length of triangle side.
3. For circular one the user must enter the radius of circle.
4. Spiral need to determine the change radius of spiral shape.
5. Point to point trajectory is required to determine the x and y coordinate of destination points given that the robot will start from its current position.
6. Wave motion will make the robot navigate the environment in a sinusoidal shape.



Notes:

- It is important to validate the user input in such a way that the turtle robot does not reach borders.
- You need to create a launch file to run all ROS nodes.
- You need to display output relevant information for each trajectory on the output screen.
- Organize your code and you must use comments in your code.

Project Team:
Each team must be two students at most.

Due dates:
Submission and discussion will be by the 15th week.