Activity 1: Introducing turtlesim and rqt

Background

Turtlesim is a lightweight simulator for learning ROS 2. It illustrates what ROS 2 does at the most basic level, to give you an idea of what you will do with a real robot or robot simulation later on.

This tutorial touches on core ROS 2 concepts, like the separation of nodes, topics, and services.

1. Install turtlesim

```
sudo apt update

sudo apt install ros-foxy-turtlesim
```

check that package is installed:

```
ros2 pkg executables turtlesim
```

The above command should return a list of turtlesim's executables:

```
turtlesim draw_square
turtlesim mimic
turtlesim turtle_teleop_key
turtlesim turtlesim_node
```

2. Start Turtlesim

```
ros2 run turtlesim turtlesim_node
```

In the terminal under the command, you will see messages from the node:

```
[INFO] [turtlesim]: Starting turtlesim with node name /turtlesim

[INFO] [turtlesim]: Spawning turtle [turtle1] at x=[5.544445], y=[5.544445], theta=[0.000000]
```

3. Use turtlesim

Open a new terminal(ctrl+shift+T) and **source ROS 2 again**.

Now you will run a new node to control the turtle in the first node:

```
ros2 run turtlesim turtle_teleop_key
```

At this point you should have three windows open: a terminal running turtlesim_node, a terminal running turtle_teleop_key and the turtlesim window. Arrange these windows so that you can see the turtlesim window, but also have the terminal running turtle_teleop_key active so that you can control the turtle in turtlesim.

Use the arrow keys on your keyboard to control the turtle. It will move around the screen, using its attached "pen" to draw the path it followed so far.