

Rotational Motion - Interactive Challenge Notebook

This notebook will guide you through controlling an **omni-wheel robot** step by step. You'll see an **example**, then try to complete a similar challenge on your own!

Learning Objectives

- Understand how to move the robot using Python commands.
- Experiment with different speeds, directions, and durations.
- Observe and adjust movement patterns to improve control.

```
In [ ]: import sys
import os
import time

# Add parent directory to the Python path
sys.path.insert(0, os.path.abspath('../'))

import rclpy
from controllers.omni_robot_controller import OmniWheelControlNode # Import

# Initialize ROS2 node
rclpy.init()
node = OmniWheelControlNode()
```

Challenge: User Input and Functions

For this challenge you are going to ask a student to enter the angle (in degrees) they would like the robot turn between 10 and 360 degrees

```
In [ ]: # Challenge
# For this challenge you are going to ask the user to input in an angle in degrees
# You need to convert this degree measurement into radians (306 degrees = 2π)
# You should then have the robot turn those degrees using a speed of 1 radian
```

Shutting Down the Node

Once you're done, **shutdown the node** properly.

```
In [ ]: node.destroy_node()  
        rclpy.shutdown()
```