Buzzer_Challenge_8__Student

This is the **student version** of **Challenge 2: Countdown Timer**.

Follow the instructions to complete the challenge on your own.

In [ ]:
```
import rclpy
from omni_robot_controller import OmniWheelControlNode  # Import control noc

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

ℹ ROS2 Node Initialization

This cell includes the correct libraries and initializes the `OmniWheelControlNode` for use with the challenges. **Make sure ROS2 is installed and sourced in your environment.**

Challenge 2: Countdown Timer

- Program the buzzer to **beep once per second** for **10 seconds**.
- After 10 seconds, play a **final long beep** to indicate time is up.
- Use a loop with **time.sleep()** to create the effect.

Objective

Create a countdown timer using the buzzer. The buzzer should beep once per second for 10 seconds. After the countdown is complete, it should play a final long beep to indicate time is up.

Instructions

1 Use a Loop to Control Timing

- Use a `for` loop to repeat the buzzer sound 10 times (once per second).
- Use `time.sleep(1)` to create the delay between each beep.

2 Play a Short Beep

- Call the buzzer function inside the loop.
- Use an appropriate frequency for a short beep.
- Adjust the `on_time` and `off_time` to ensure the beep is clear.

3 Play a Final Long Beep

- After the loop finishes, play one final beep that is longer than the previous beeps.
- Choose a different frequency to make it distinguishable.

In [ ]:
```
#  Write your solution here
```