EXPERIMENT 2: CHELONIA CONTROL USING MOBILE APP

Objective

The objective of this experiment is to control the Chelonia Bot using the "Arduino Bluetooth Connector" mobile app. By executing this code and using the app, you can make the Chelonia Bot move forward, backward, turn left, turn right, and stop.

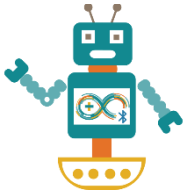
Setup

Before running the experiment, ensure that you have assembled the Chelonia Bot hardware as per the assembly instructions in Section 2.1. Additionally, make sure you have connected the Chelonia Bot to the Arduino IDE, as explained in Section 2.3.

Hardware Setup: Connect the hardware as follows to ensure proper functionality.

- **Motor Control Pins:**
  - Connect Motor 1:
    - Direction input 1 (IN1): Connect to pin 8
    - Direction input 2 (IN2): Connect to pin 9
  - Connect Motor 2:
    - Direction input 1 (IN3): Connect to pin 10
    - Direction input 2 (IN4): Connect to pin 11
- Ensure the Bluetooth module (HC-05) is properly connected to the Arduino (VCC and GND). Connect its RX to TX and TX to RX. For detailed guidance on connecting the HC-05 Bluetooth module to your Arduino, please refer to the following link: HC-05 and Arduino Connection.

Code Example: Chelonia control using mobile



Mobile App Setup

Download and install the "Arduino Bluetooth Connector" app from the Play Store.

Pair your mobile device with the HC-05 Bluetooth module.

Usage Instructions

- Open the "Arduino Bluetooth Connector" app on your mobile device.
- Connect to the HC-05 Bluetooth module.
- Use the on-screen controls to send commands to the Chelonia Bot:
  - **F:** Move forward
  - **B:** Move backward
  - **L:** Turn left

- **R:** Turn right
- **S:** Stop

Note: Connect the RX and TX pins of HC-05 to the TX and RX pins of Arduino after uploading the code.

Common Issues: Bluetooth connection issues: If your device is connected, but not appearing in the mobile app, troubleshoot by checking the Bluetooth pairing settings and ensuring the HC-05 module is connected. If the issue persists, a simple resolution is to press the reset button on the HC-05, which often resolves connectivity problems.

Frequently Asked Questions (FAQs)

Q: Can I use a different Bluetooth app for control?

A: Yes, if the app allows sending characters 'F,' 'B,' 'L,' 'R,' and 'STOP' over Bluetooth.

Q: How can I modify the code for different motor speeds?

A: Adjust the values passed to the **analog Write()** functions in the code for different motor speeds.