EXPERIMENT 7: VOICE CONTROLLED ROBOT

Objective: The objective of this experiment is to create a voice-controlled robot using a Bluetooth module and the "Arduino Bluetooth Connector" mobile application. The robot should respond to specific voice commands to move forward, backward, left, right, or stop.

Setup: Before proceeding, ensure that you have completed the Chelonia Bot assembly and connected it to the Arduino Uno following the instructions in Sections 2.1 and 2.3.

Hardware Connections:

- **Motor 1 (Left Motor):**
  - Direction 1 (motor1Dir1): Connect to pin 8
  - Direction 2 (motor1Dir2): Connect to pin 9
- **Motor 2 (Right Motor):**
  - Direction 1 (motor2Dir1): Connect to pin 10
  - Direction 2 (motor2Dir2): 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

Mobile Application:

- To download the required mobile application, "Arduino Bluetooth Connector," simply visit the Play Store on your Android device and search for the app, or conveniently click on the provided link for quick access. This app is essential for establishing a connection between your mobile device and the Chelonia Bot's Bluetooth module, enabling seamless voice control.

Link:mobile app setup

Code Example: Voice controlled robot

Usage Instructions:

- Power up the CheloniaBot and ensure the Bluetooth module is paired with the mobile device.
- Open the "Arduino Bluetooth Connector" app on your mobile device.
- Establish a connection between the app and the Bluetooth module.
- Send voice commands ('F' for forward, 'B' for backward, 'L' for left, 'R' for right, 'S' for stop) through the app.

Expected Results:

- The Chelonia Bot should respond to voice commands and move accordingly.

Frequently Asked Questions (FAQs):

Q: What should I do if the robot does not respond to voice commands?

A: Ensure that the Bluetooth module is properly connected, the app is paired, and the commands are sent correctly.

Q: Can I customize the voice commands?

A: Yes, you can modify the execute Command () function in the code to change the corresponding actions for different voice commands.

Q: How do I stop the robot?

A: Send the 'S' command through the app to stop the robot.

Additional Notes:

- Make sure your mobile device's Bluetooth is enabled and connected to the module before sending commands.