#include <SoftwareSerial.h>

// HC-05 Bluetooth module setup

SoftwareSerial btSerial(2, 3); // RX | TX

// Variables to simulate joystick values (these will depend on the actual hardware used)

byte lxAxisValue = 127; // Left joystick X-axis (center position for base)

byte lyAxisValue = 127; // Left joystick Y-axis (center position for shoulder)

byte rxAxisValue = 127; // Right joystick X-axis (center position for gripper)

byte ryAxisValue = 127; // Right joystick Y-axis (center position for elbow)

byte wristRollValue = 127; // Third joystick X-axis for wrist roll

byte wristPitchValue = 127; // Third joystick Y-axis for wrist pitch

byte turnValue = 127; // Fourth joystick X-axis for turning

byte speedValue = 127; // Fourth joystick Y-axis for forward/backward

void setup() {

// Initialize Bluetooth communication

btSerial.begin(38400);

// Simulated joystick input setup

pinMode(A0, INPUT); // Left joystick X-axis (Base control)

pinMode(A1, INPUT); // Left joystick Y-axis (Shoulder control)

pinMode(A2, INPUT); // Right joystick X-axis (Gripper control)

pinMode(A3, INPUT); // Right joystick Y-axis (Elbow control)

pinMode(A4, INPUT); // Third joystick X-axis (Wrist Roll control)

pinMode(A5, INPUT); // Third joystick Y-axis (Wrist Pitch control)

pinMode(A6, INPUT); // Fourth joystick X-axis (Turn control)

pinMode(A7, INPUT); // Fourth joystick Y-axis (Speed control)

}

void loop() {

// Read joystick positions

lxAxisValue = analogRead(A0) / 4; // Scale 0-1023 to 0-255 (Base control)

lyAxisValue = analogRead(A1) / 4; // Scale 0-1023 to 0-255 (Shoulder control)

rxAxisValue = analogRead(A2) / 4; // Scale 0-1023 to 0-255 (Gripper control)

ryAxisValue = analogRead(A3) / 4; // Scale 0-1023 to 0-255 (Elbow control)

wristRollValue = analogRead(A4) / 4; // Scale 0-1023 to 0-255 (Wrist Roll control)

wristPitchValue = analogRead(A5) / 4; // Scale 0-1023 to 0-255 (Wrist Pitch control)

turnValue = analogRead(A6) / 4; // Scale 0-1023 to 0-255 (Turn control)

speedValue = analogRead(A7) / 4; // Scale 0-1023 to 0-255 (Speed control)

// Create a comma-separated string for packet transmission

String dataString = String(lxAxisValue) + "," +

String(lyAxisValue) + "," +

String(rxAxisValue) + "," +

String(ryAxisValue) + "," +

String(wristRollValue) + "," +

String(wristPitchValue) + "," +

String(turnValue) + "," +

String(speedValue);

// Send data to receiver

btSerial.println(dataString);

// Small delay to avoid overloading communication

delay(100);

}