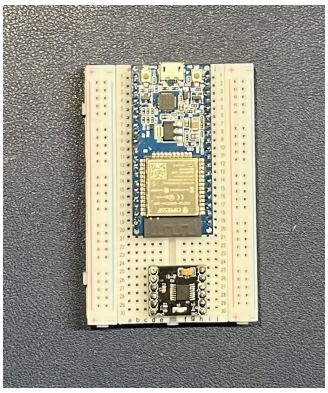
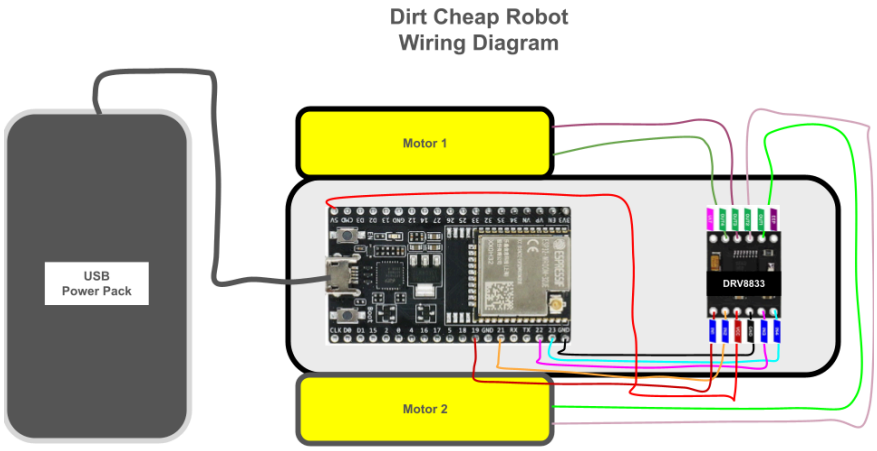
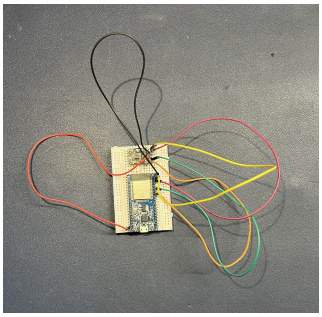
Dirt Cheap Robot
Assembly Instructions

1. Place the ESP32 board into the breadboard as shown.

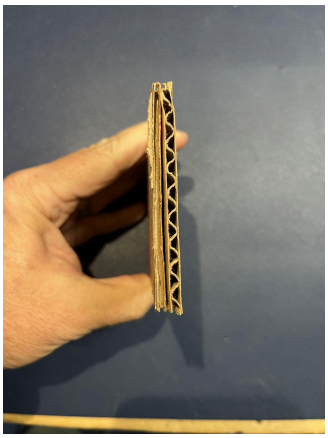


2. Attach the wires as shown in the wiring diagram and picture.



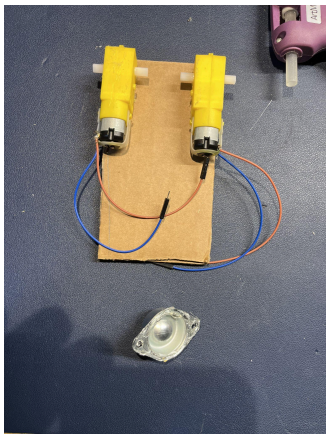


3. Cut two pieces of cardboard into rectangles 3” x 5 ½” in size. Make sure the two pieces of cardboard are opposite grains to add strength (See picture).

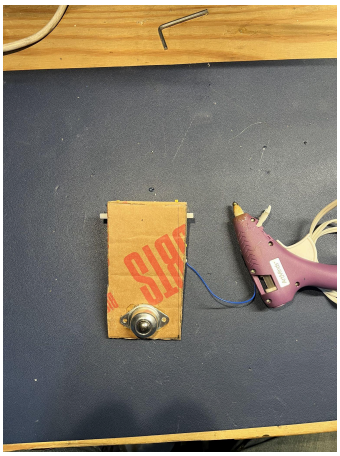


4. Hot glue the two pieces together.

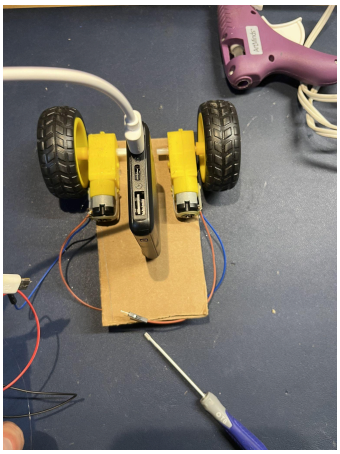
5. Hot glue the Motors to the Cardboard.



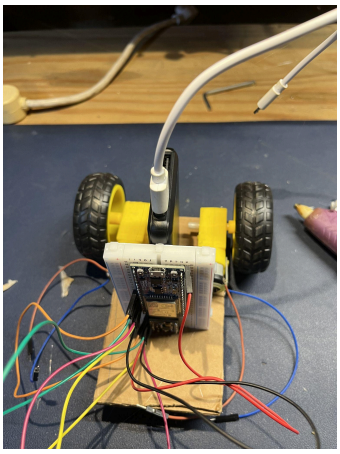
6. Hot glue the roller ball bearing to the other side of the cardboard.

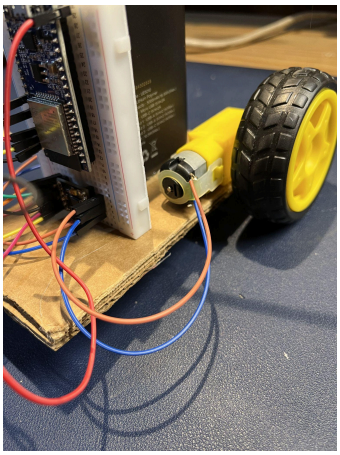


7. Hot glue the USB Battery Bank to the cardboard.

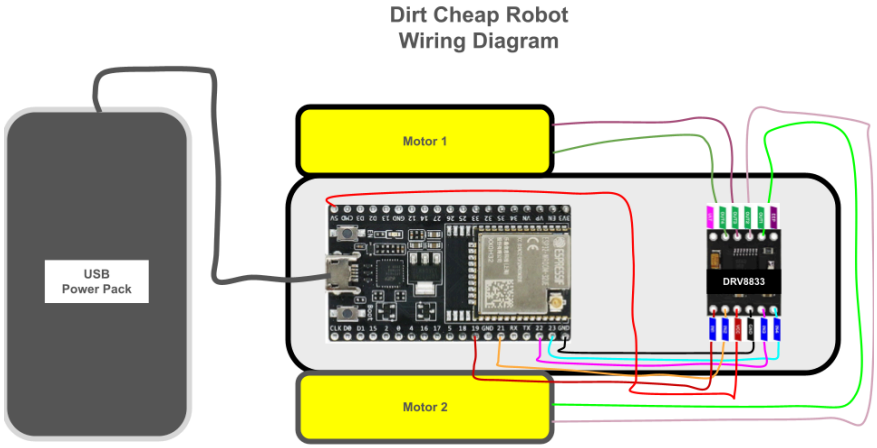


8. Hot glue the Breadboard to the battery bank and the cardboard.



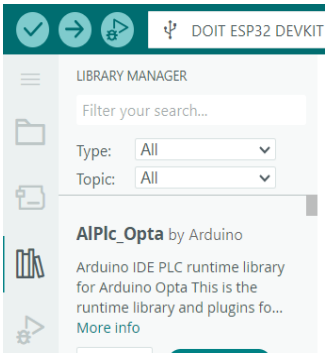


9. Connect the motor wires to the breadboard as shown in the wiring diagram.



10. Connect the ESP32 to a laptop using the USB cable.
11. Open the DirtCheapRobot.ino file in the Arduino IDE
    a. Create a folder called **DirtCheapRobot**
    b. Copy the DirtCheapRobot.ino file into this folder
    c. Open the DireCheapRobot.ino file in the Arduino IDE (File/Open)
12. Prepare the Arduino IDE application.
    a. Install the bluepad32 library

        i. Click the ----------->



        ii. Select File/Preferences in the Arduino IDE

iii. Click the  at the bottom right to open the "**Additional Boards Manager URLs**"

iv. In the space below "Enter additional URLs, one for each row" paste "https://raw.githubusercontent.com/ricardoquesada/esp32-arduino-lib-builder/master/bluepad32_files/package_esp32_bluepad32_index.json" on a new line..

v. Click "**Ok**"

vi. Click "**Ok**"

b. Select the correct 'Comm Port'

i. Tools>

ii. Comm: Port ?

iii. Select the correct Comm Port from the list provided
Note: For additional help see:
Select board and port in Arduino IDE – Arduino Help Center

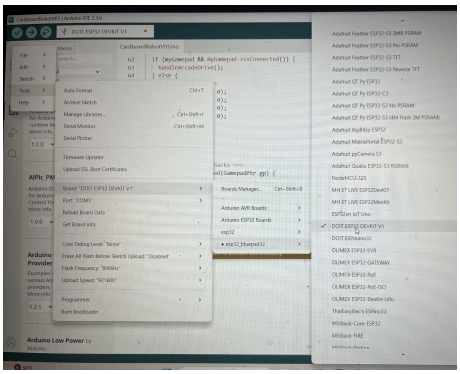
c. Select the correct 'Board'

i. Tools>

ii. Board: *'Current selected board'*

iii. *esp32_bluepad32*

iv. Select "DO IT ESP32 DEVKIT V1"



13. Compile and Load the DirtCheapRobot.ino file onto the ESP32.

a. Click the Upload  button at the top right of the Arduino IDE.

b.

c. The file should compile and load without errors.

14. Pair your Game Controller with the ESP32 - PS4

a. Push and Hold the Share Button and the PS4 Button

b. The light on the front will blink then go solid.

c. Release both buttons when the light goes solid

Controls

Stick	Axis	Function
Left stick (Y)	`axisY`	Forward / reverse
Right stick (X)	`axisRX`	Steering left / right
Center both sticks	—	Stop