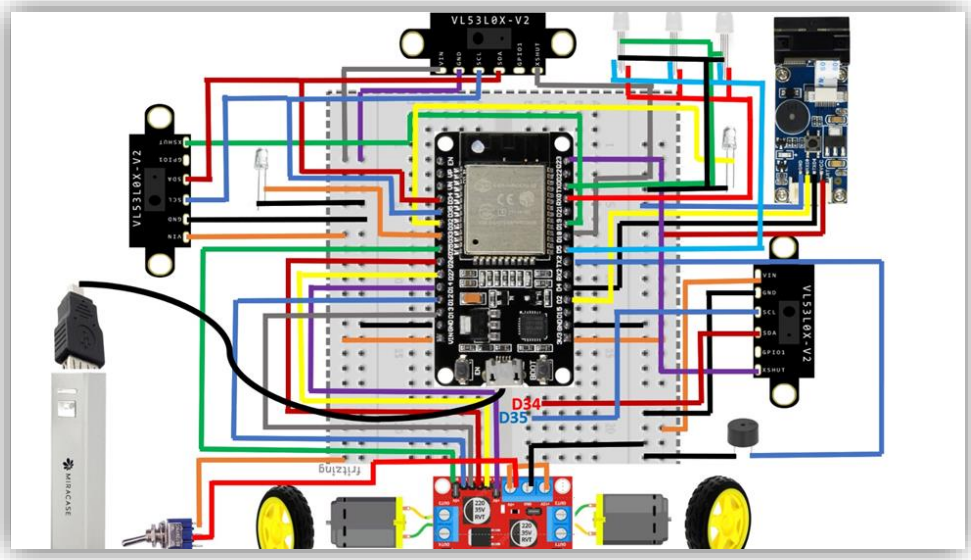
Duplicating

Steps for building the "Coding Minion":

1. Bring all the following system parts:

   - ✓ ESP32 Dev Module.
   - ✓ 3 VL53L1X Distance Sensors.
   - ✓ GM65.
   - ✓ Buzzer.
   - ✓ 3 RGB LEDs.
   - ✓ 2 white LEDs.
   - ✓ 14 resistors.
   - ✓ Two N20 DC Motors.
   - ✓ L298 motors driver.
   - ✓ Toggle Switcher.
   - ✓ Silver power bank miracase.
   - ✓ Two 3D-Printed wheels.
   - ✓ Two guiding rolling wheels.

2. Connect all system parts together, according to the following connections diagram:



3. Build the minion as shown here.
4. Download the folder “main” from the ESP32 Code folder and upload the code to the “Coding Minion”.

   Note that: there might be some bugs in the moving, avoid hitting the walls and turn 90, or 180 degrees. To fix that:

   - ✓ To Fix the moving and avoid hitting the walls, you have to open the file “motors.h” and change the values of the defined parameters there. You have to make tests with different values until the bug is fixed.
   - ✓ To Fix turn 90, or 180 degrees, you have to open the file “leds.h” and change the values of the delay in the corresponding functions:
     - Function “havhavRight” for turning 90 degrees right.
     - Function “havhavLeft” for turning 90 degrees left.
     - Function “havhavLeft_180” for turning 180 degrees left.

Steps for building the cards:

Download the pdf file “cards” from the assets folder, print it, and make the cards such that, every card has a barcode in front and a “Coding Minion” in the back, as follows:

Front

Back

Steps for building one wall for the maze:

1. Big size wall:
   - ✓ Bring one paper board (size: A4) and 2 tree cube (size: 1cm x 1cm).
   - ✓ Cut the paper board in the middle, and make two square holes in the corner, as follows:

   - ✓ Glue the two cubes in the two square corners.

2. Small size wall:

- ✓ Bring one half of paper board (size: A4) and 2 tree cube (size: 1cm x 1cm).
- ✓ Cut the paper board in the middle, and make one square hole in the down middle, as follows:

- ✓ Glue the two cubes in the two square corners.