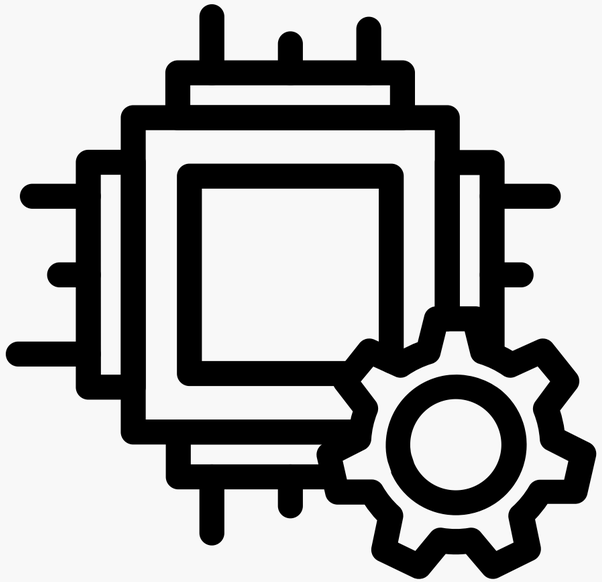
# EMBEDDED SYSTEMS PROJECT PROPOSAL -



GROUP-28

Submitted to - Dr. Ankur Beohar

## Group Members

20BCE10073 - MOHAMMAD SAIF

20BCE10085 - ANUBHAV DE

20BCE10366 - ANVESH MANDLIK

20BCE10845 - AKSHAT DADHICH

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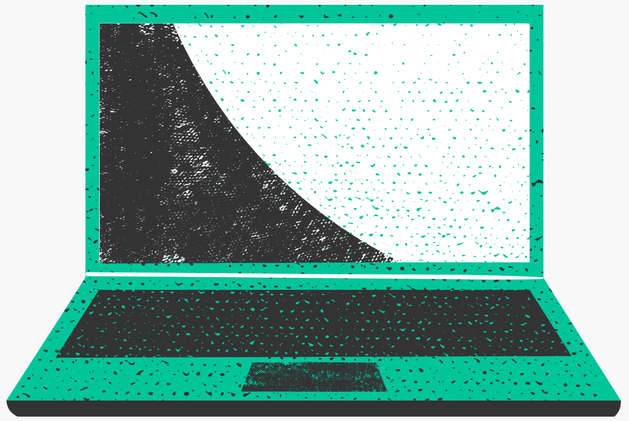
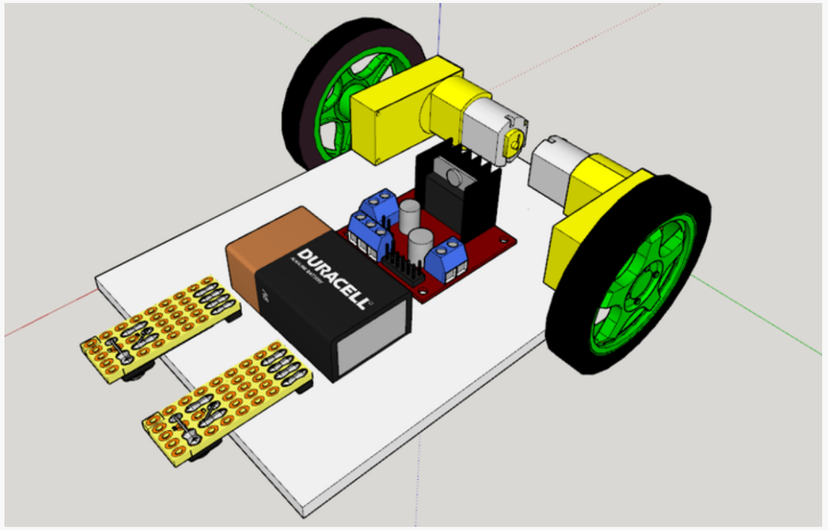


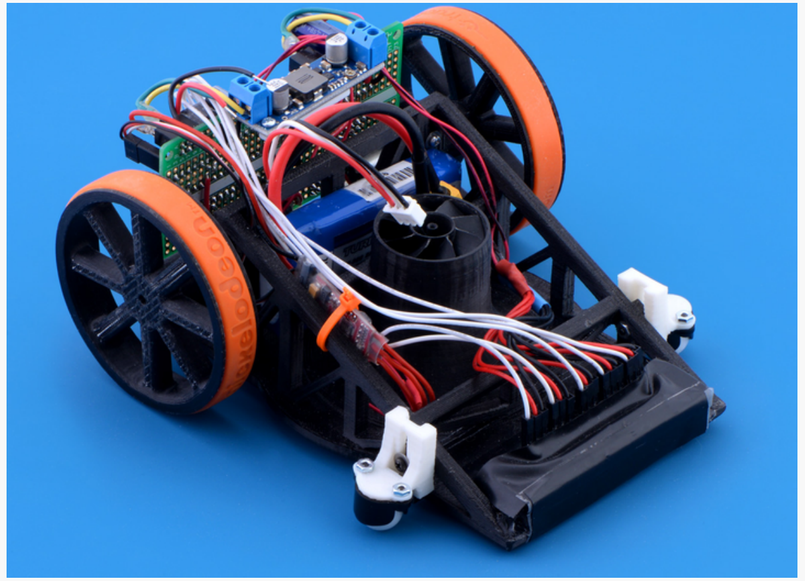
# II. What is a Line Follower Robot?




- Autonomously guided robot that follows a line drawn on the ground to either detect a dark line on a white surface or a white line on a dark surface.

- Self-Correction to stay on track.

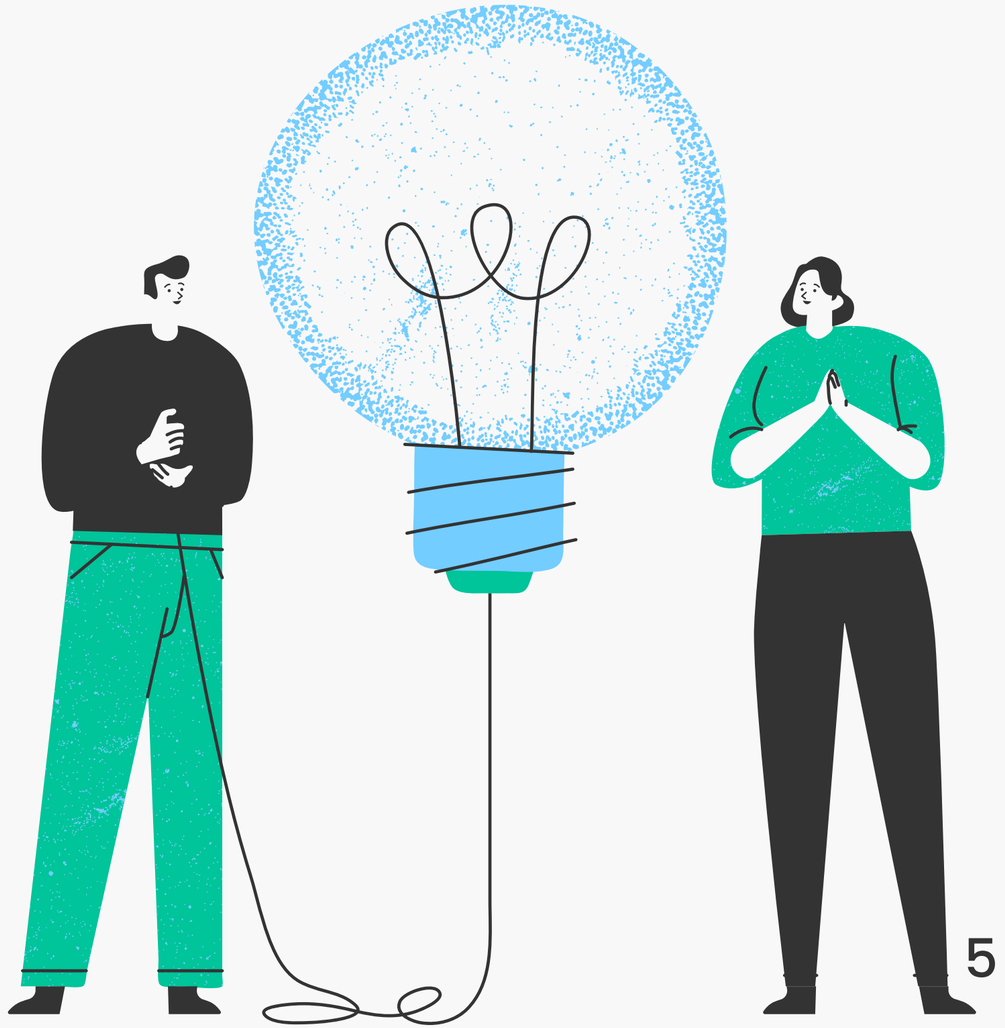
- No need of Human Help



# IV. Procedure

- The IR sensor detects the light emitted by the transmitter, if the receiver receives light, the wheel of that side will keep on moving, as soon as the receiver stops receiving the light (black colour absorbs the light and thus no light is reflected so receiver cannot receive any light) the wheel of that side will stop. For turning, the robot stops 1 motor and runs the second to make the turn possible.

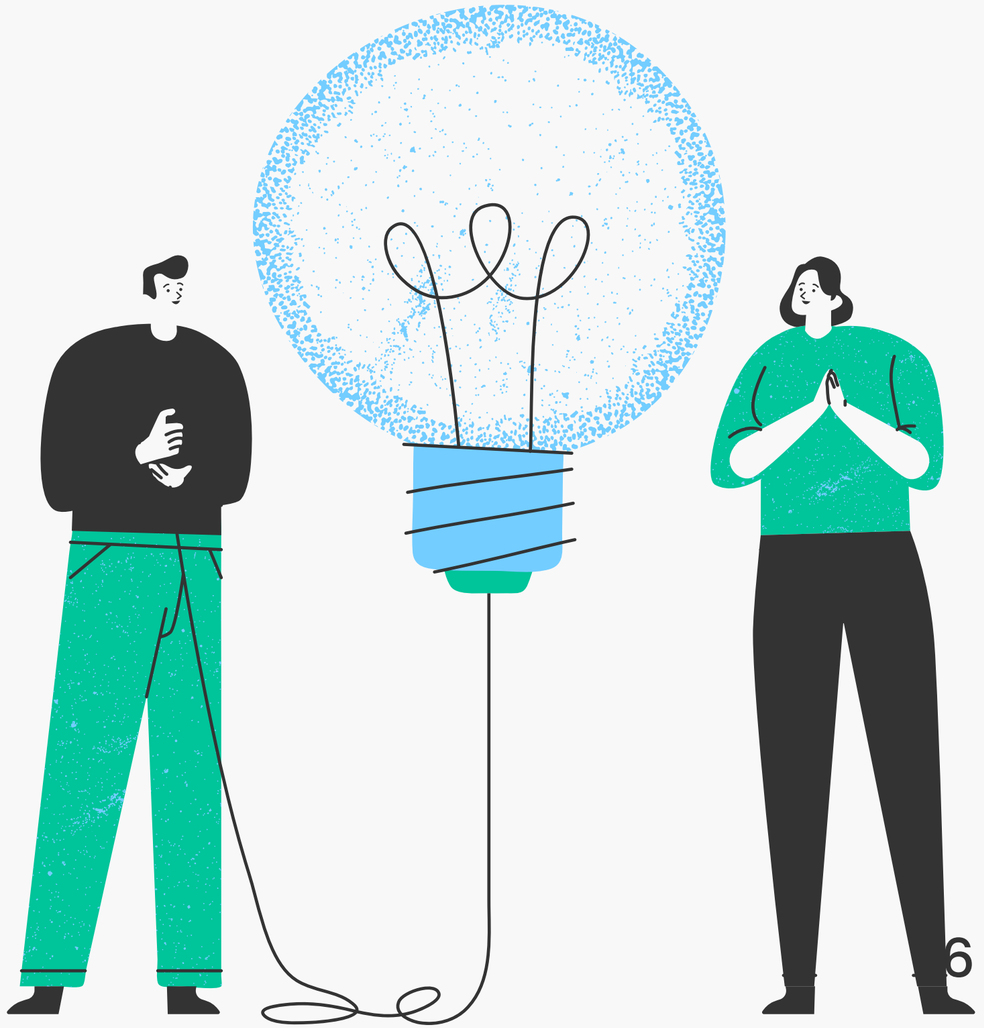
- For eg: If the robot has to turn right then the motor on right side will stop and left motor will keep on running and thus allowing the robot to turn.



# IV. Procedure (Continued)

Algorithm -

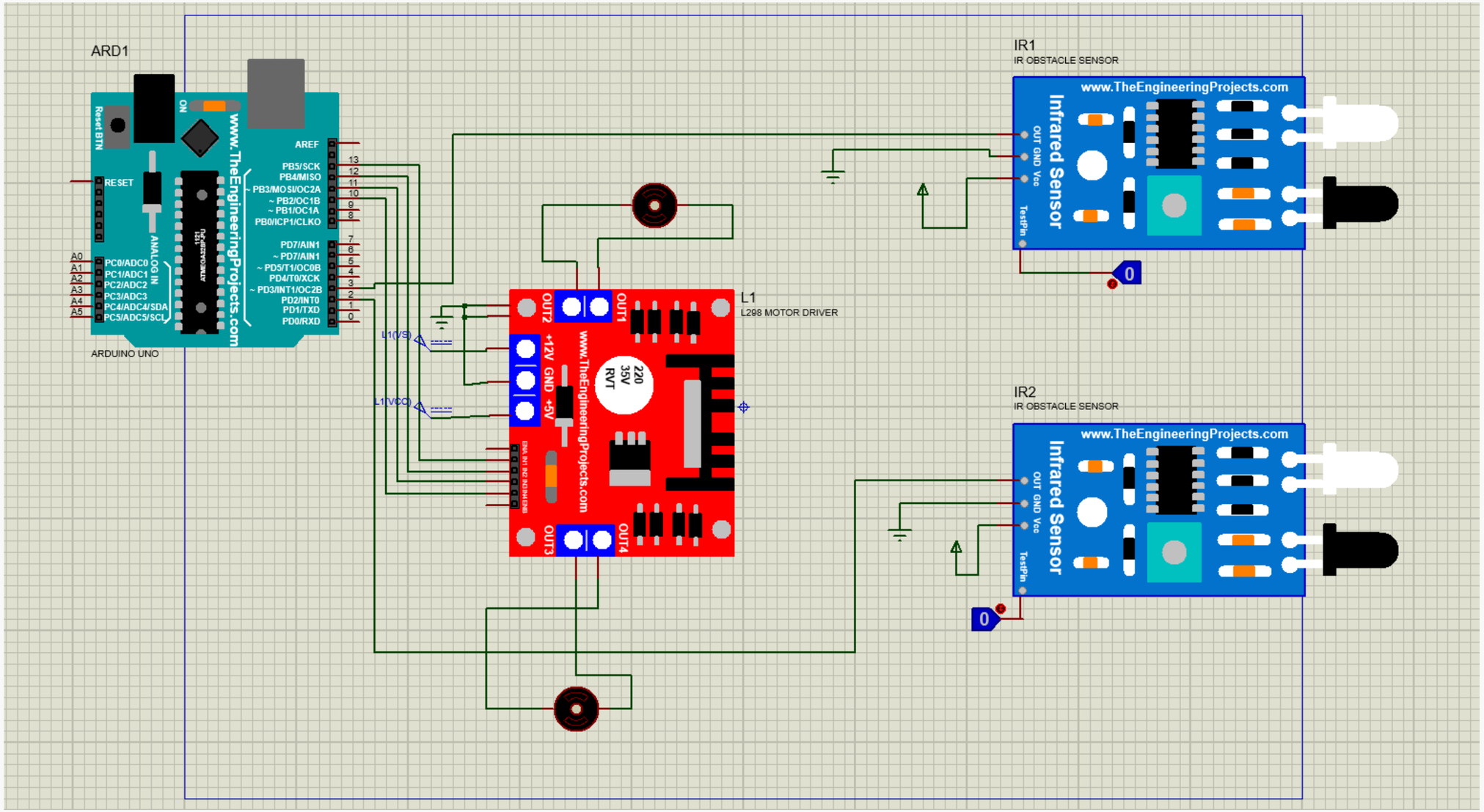
- Robot's direction is determined by what the robot "sees".
- If line is centered in front of robot, go forward.
- If line is left of center, turn left.
- If line is right of center, turn right.
- If no line is detected, circle until line is found.



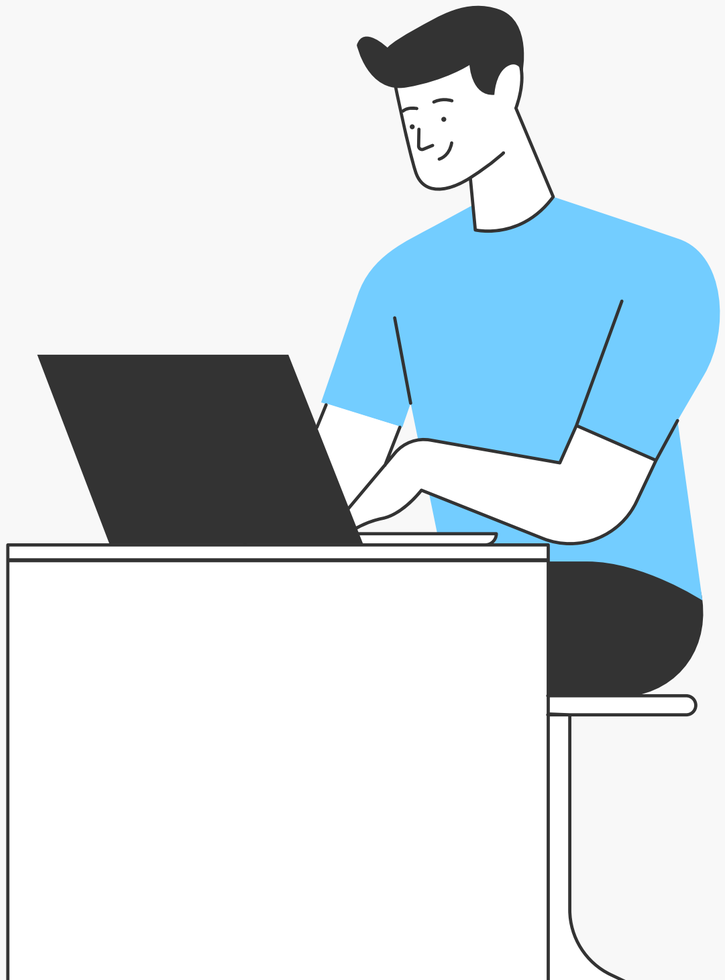
# IV. Implementation

```
void setup() {
    pinMode(2,INPUT);
    pinMode(3,INPUT);
    pinMode(10,OUTPUT);
    pinMode(11,OUTPUT);
    pinMode(12,OUTPUT);
    pinMode(13,OUTPUT);
}

void loop() {
    int v = digitalRead(2);
    int s = digitalRead(3);

    if(v==1 and s==1){
      digitalWrite(13,1);
      digitalWrite(12,0);
      digitalWrite(11,1);
      digitalWrite(10,0);
    }
    if(v==1 and s==0){
      digitalWrite(13,0);
      digitalWrite(12,1);
      digitalWrite(11,1);
      digitalWrite(10,0);
    }
    if(v==0 and s==1){
      digitalWrite(13,1);
      digitalWrite(12,0);
      digitalWrite(11,0);
      digitalWrite(10,1);
    }
    if(v==0 and s==0){
      digitalWrite(13,0);
      digitalWrite(12,1);
      digitalWrite(11,0);
      digitalWrite(10,1);
    }
}
```

# IV. Implementation



# V. Applications



- Industrial application : The line followers can be used to carry/deliver packages in warehouses,airports,restaurants etc
- Automobile Industries : The line follower can also be used in cars, taxis and buses to create an autonomous transport system
- Household application : It can be used for cleaning and transport of household items throughout the house
- Guidance : It can also be used as guidance for people at malls, amusement parks and also be of help to physically challenged people helping them go about their daily lives as normal people would.

THANK YOU