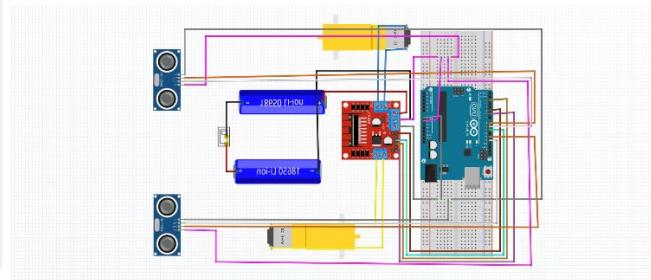
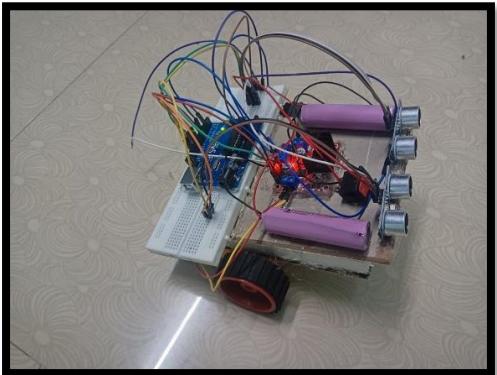


# HUMAN FOLLOWING ROBOT



- **COMPONENTS REQUIRED :**

1. ULTRASONIC SENSOR - 2
2. L298N MOTOR DRIVER
3. BO MOTOR AND WHEEL – 2
4. LI-ION CELL – 2
5. DC SWITCH
6. BREAD BOARD
7. JUMPER WIRES

- **LOGIC USED :**

IF THE TARGET DISTANCE IS LEASS THAN 15 CM FROM ANY OF THE SENSOR THAN THE MOTOR STARTS AND IT STOPS IF THE DISTANCE IS LESS THAN 4 CM OR GREATER THAN 15 CM FROM BOTH SENSOR.  
IF THE DISTANCE FROM LEFT SENSOR IS GREATER THAN THE RIGHT SENSOR'S READING THAN THE SPEED OF LEFT WHEEL WILL INCREASE TO MOVE IN THE RIGHT DIRECTION AND VICE-VERSA.  
FOR INCREASING AND DECREASING THE SPEED OF WHEEL WE USED **PD CONTROL METHOD.**

- **PD CODE SNIPPET :**

```
if(distance_R>distance_L)error = 1;
else error =-1;
P = error;
I += error;
D = error - lastError;
PIDvalue = (kp * P) + (ki * I) + (kd * D);
lastError = error;
leftSpeed = baseSpeed - PIDvalue;
rightSpeed = baseSpeed + PIDvalue;

leftSpeed = constrain(leftSpeed , 40, 255);
rightSpeed = constrain(rightSpeed , 40, 255);

analogWrite(ENA_L, leftSpeed);
analogWrite(ENA_R, rightSpeed);
delay(200);
```