**PID LINE FOLLOWER**

**SECTION : A LAB BATCH: A2**

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**Abstract:**

PID control of line follower is a method consisting of Proportional, Integral & Derivative functions to improve the movement of the robot. The robot uses several sensors to identify the line thus assisting the bot to stay on track. The robot is driven by DC Motors to control the movement of the wheels. A line follower consists of an infrared light sensor and an infrared LED. It works by illuminating a surface with infrared light; the sensor then picks up the reflected infrared radiation and, based on its intensity, determines the reflectivity of the surface in question.

**Block Diagram:**

**Q**

**T**

**R**

**-**

**8**

**R**

**C**

Arduino Pro

Nano

Sensor data

Bus

HC 05

Bluetooth

DRV

8835

TXD

RXD

RXD

TXD

Motor A data

Motor B data

VDC

5

GND

GND

5

VDC

5

VDC

GND

GND

VDC

5

**Component list**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No.** | **Component** | **Ratings** | **Quantity** |
| 1 | Spark fun Arduino pro mini | 328–5V/16MHz | 1 |
| 2 | DRV8835 dual motor driver carrier |  | 1 |
| 3 | step up /step down voltage regulator | S7V7F5 – 5v | 1 |
| 4 | QTR-8RC reflectance sensor array |  | 1 |
| 5 | Micro metal gear motor HPCB | 6v | 2 |
| 6 | Ball caster with 3/8" metal ball |  | 1 |
| 7 | HC–05 Bluetooth module |  | 1 |
| 8 | Mounting bracket for N20motors |  | 2 |
| 9 | Button 6\*6\*6 |  | 2 |
| 10 | Male female connector | 24 pin | 4 set |
| 11 | Lipo | 7.4v | 2 |
| 12 | Zero PCB |  | 3 |
| 13 | Solder lead |  | 1 roll |
| 14 | Flux |  | 1 |