**Line Follower Robot**

**Project By :**

Ahmed Hossam , Seif Eldin Sweilam

Ahmed Gouda , Sherief Shaaban

Sohila Mostafa , Shrouk Abdelmenem

Shahd Wael , Fatma Seleman

**Idea:**

A line follower robot is an electronic system that can detect and follow a line drawn on the floor.

It follows a black line on a white surface or a white line on a black surface.

The robot uses IR sensors to sense the line, these sensors read the line and send that reading to Arduino and then control the robot’s movement.

The microcontroller built on the Arduino analyzes those readings and does particular operations.

**Tools:**

* Car chassis
* Arduino Uno
* Two DC-geared motors with wheels
* front wheel
* The H-bridge motor control IC.(L298N motor driver).
* A potentiometer to calibrate the reference voltage.
* Three IR sensors
* Connectors and screws and jumper wires.
* Switch button
* 7-12 V dc battery

**The process:**

-fix all the components to the car chassis using the connectors and the screws, and fix the two wheels and the front wheel.

-Dc motor is easy for controlling. one dc motor has two signals for its operation. reversing the polarity of the power supply across it can change the direction required. Speed can be determined by determining the voltage across the motor.

-the Arduino UNO is used to perform and implement algorithms to control the speed of the motors and it has:

(14 digital input/output pins- 6 analog input pins – voltage input from 7-12v)

-we used three sensors to make the movements smooth and reliable for sharp turns.

-Lcd display: In our project, it's used to display the directions and the team's name.

In the end, I wanted to say that this project challenged the team to cooperate, communicate, and expand their understanding of electronics, control systems, and programming.