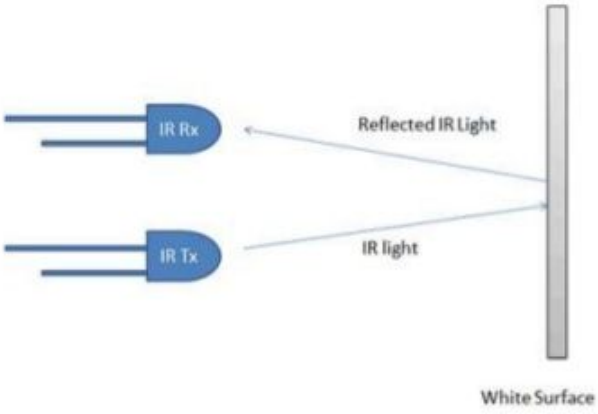
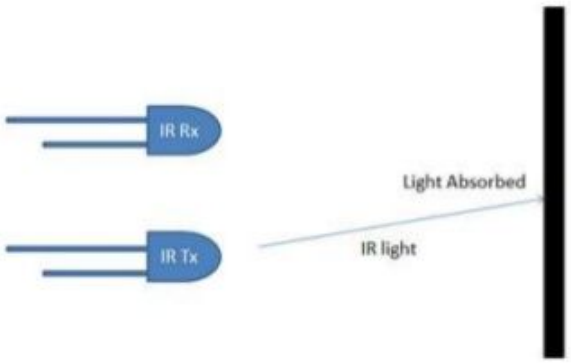
Line Following Bot

As interpreted by the name itself, it is an automated bot which follows a visual line embedded on the floor or ceiling. For this project, we have considered a black line embedded on the floor in order to get an absolute observant of infra-red radiations. So that we can use the absolute observant property of black colour. Certain advanced line follower bots use invisible magnetic fields as their path.

Concept

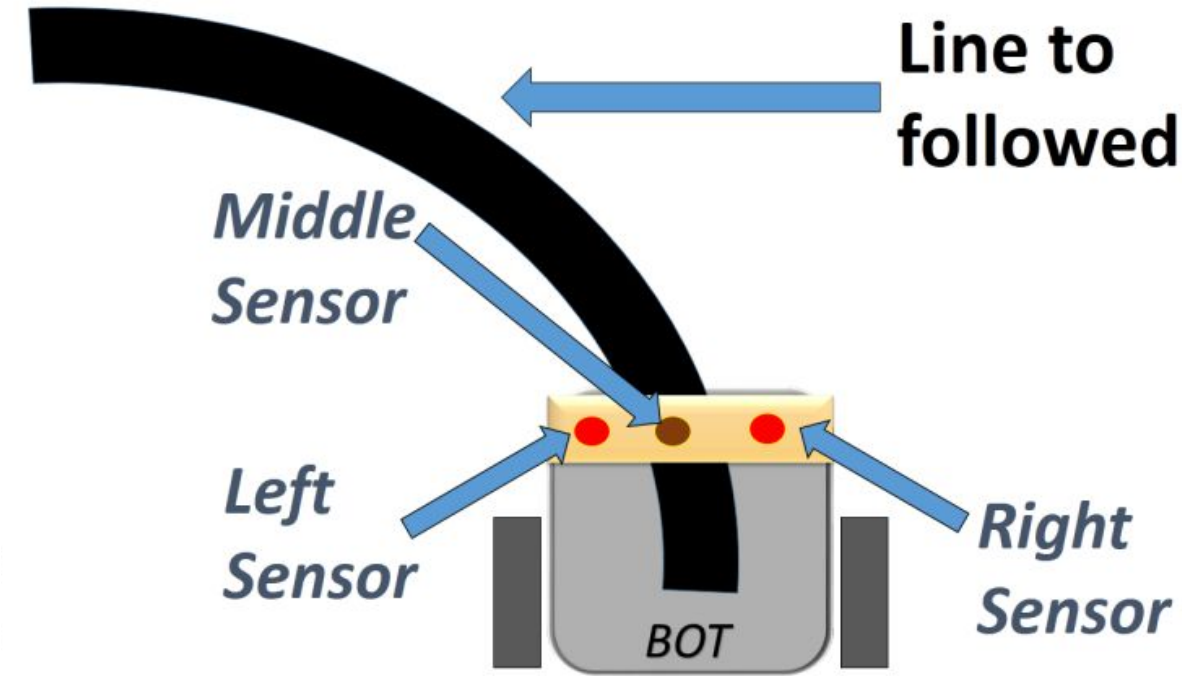
Concept of working as a line follower is related to light. We use here the behaviour of light at the black and white surface. When light falls on a white surface it is almost completely reflected and in case of black surface, light is completely absorbed. This behaviour of light is used in **building a line follower robot**.



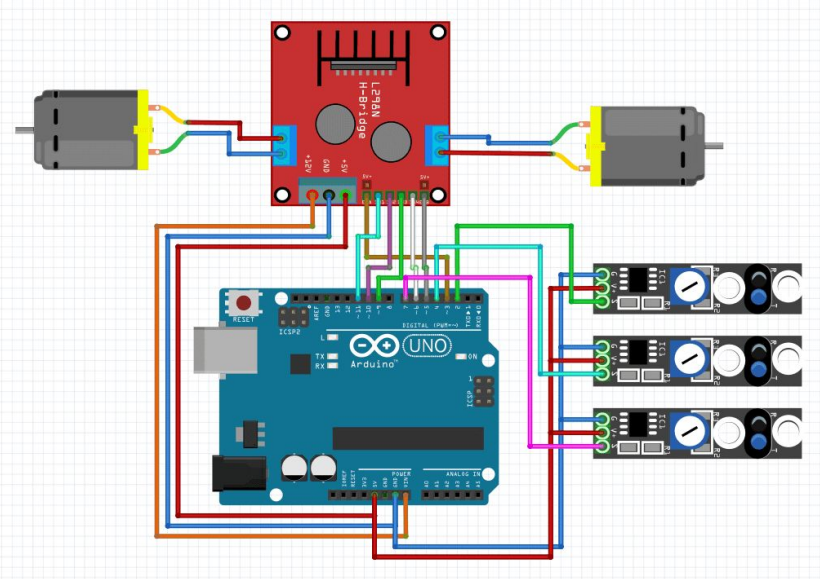


Working

The line following robot is one of the self-operating robots. That detects and follows a line drawn on the area. The line is indicated by a black line on a block surface or block line on a black surface. In this IR sensor sends the infra-red radiations to the upcoming path and it is observed that those radiations are absorbed in case black line or completely reflected in case of white line which varies intensity with rest of the block. This application depends upon the sensors. Here we are using an IR sensor for path detection. These sensors mounted at the front end of the robot. So whenever the sensor detects black path it follows the line. And when the block is detected it checks for the turn or stops. The bot is back driven. And the circuit consists of 3 IR sensors.



Circuit Diagram:



Cases:

	Left Sensor Value	Middle Sensor Value	Right Sensor Value		Left Motor Movement	Right Motor Movement	Result
Case 1	0	1	0		Working	Working	Move Forward
Case 2	1	0	0		Stop	Working	Left Turn
Case 3	0	0	1		Working	Stop	Right Turn
Case 4	0	0	0		Stop	Stop	Stop