**RAILWAY GATE AUTOMATION**

The aim of this project is to design an automation system for railway gates, using Arduino. To build the system, our required components are,

* Arduino UNO
* 16x2 LCD
* IR sensors
* Buzzer
* Servo motor
* LEDs

**Introduction:**

A railway gate or level crossing is an intersection where a railway line crosses a road or path, or in rare situations an airport runway, at the same level, as opposed to the railway line crossing over or under using an overpass or tunnel. Looking at the importance of safety of railway crossings this project is focused on a safer and labour free function of railway gate. There are more than 34,000 railway crossings in India today, out of which more than 12,000 are not attained by operator. More than 60% of accidents take place at such inhumane railway gate crossings. The above problem can be solved with railway gate automation. In case of railway crossing gates, this system would be the best option as railway gate automation. This system is more convenient, eco-friendly, reliable and efficient as it is cost efficient.

**Working:**

A railway gate is now under control of a person. The efficiency of operation the railway gate will surely depend upon the efficiency of the person. That is a simply a drawback of the system. So, here we are introducing the Railway Gate Automation system with high efficiency and security. In this system, couple of IR sensors will continuously check the condition of the railway track. A yellow light indication will be provided for the traffic every time. The system is capable of check the presence of the train and take proper action when a threat or risk situation is coming. If a train is coming towards the level cross in normal situation, the green light on the track will be turned on that represents the normal situation of the track and the cross will be closed for traffic. If an object found on the track before train comes, that means a threat is found on the track. Then, a short buzzer alarm will continuously happen to alert the gate operator to clear the track before train comes. Also, the green light on the track will be turned off and the red light will be turned on to alert the train that it is not safe to cross the track. When there is a threat found and the train is coming at that time, that means there is not only a threat is present, but also a risk is found! Then the level cross will close for the traffic and the train will be stopped along with a long buzzer alarm which alert the gate office that a train is stopped at his level cross. All the information related to the operation of the railway gate will be displayed on an LCD screen for the person who supervise the railway gate.