Problem Statement

Improper operation of red signal alerting in train path crossing tracks have left the crossings very dangerous. Many improper operating rail crossings have to be manually operated or directed by a person appointed for it. But despite of it, many accidents happened and happening within many places in srilanka. The wired mechanism used is sometimes ineffective due to low maintenance, blockages and human inaccuracy.

Objectives

* Convert the red signal operating method manual to auto
* Convert the red signal operating mechanism from wired to wireless
* Creating auto gate close and open system
* Red signal alerting and gate closing must be at least 1 min before the train arrival
* The system should trigger only for a train or another rail vehicle.
* System must capable of operating simultaneously and without errors when two trains are arriving at two sides.

Scopes

* Train Tracking through IR Sesnsors
* Gate operation through motors
* IR Sesnsors transmitting messages to NRF24L01 Module
* Module interacts with the algorithm
* Operation of motors and lights through instructions