Abstract

Human error has been the main reason for the train accidents that have occurred in Sri Lanka. Mainly most of the accidents are happen in the railway crossings and most of the controlling problems also happen in the railway cross because all of the railway crossing are operated using manpower.in this project mainly forces about to reduce no of accident that can be happen in the Sri Lanka railway crossings. In their mainly used wireless communication system, Arduinos and sensors to build this project. This train crossing system giving so much of benefits to government as well as general public. Because of this equipment, there are no want man to operate the gate and it is reducing the government expanses. Some train crossings are don’t have the man to operate and because of that there can be so much of accident can happen. So, this equipment can place every crossing because this can be implemented very low coat. Otherwise, this system is safe the general public. Because of that system, train transportation become very simple and safe transportation method and it will be given so much of benefit to people.

A train driver is required to keep a constant watch for any red signals that may pop up on the post, as this is the traditional procedure. On the basis of these signals, the train driver will next decide whether to come to a complete stop or to continue down the route that he has been given. However, it is quite difficult for the drivers to keep a watchful eye out for any visual symbol. An amazing system known as wireless red signal alerting for trains has been developed by engineers in order to simplify the lives of train drivers as well as the workers who are responsible for maintaining and repairing trains. At this point in time, the train would be getting steadily slower; yet they still permit a powerful control device

Methodology

This project is about wireless red signal alerting for rail track crossings by using NRF24L01 WIFI Module and mainly this project is done for reduced no of accident that happen in the railway cross. Because in the railway crossings’ gates are operated by human and it has a very risk when there is no man to operate this system. Using this system, there can be reduced no of accidents that can be happen in the railway crossing. Some railway crossings don’t have the gate and children as well as animals are going through this crossing. So, this kind of accurate security system is very useful for save their life.

According to this project, railway crossing gate is closed as the output when the train is come near to the cross. Here, wire-less connection method is used to communicate with red light alert system from user. Mainly there are two side in this project and those are sending side and receiving side. To make a transmitter and receiver, two NRF24L01 WIFI module is used with two Arduinos. Transmitter side and receiver sides are codding to their task and transmitter should transmit the signals to receiver and receiver should get the signal that transmit from transmitter. This transmitter side is places in the far away 800m from the cross gate. Here we place the two IR sensors to identify whether object is passing the IR sensor and two sensors are used because measure whether object length is more than 10m. we measure this length because identified this object is train. Because there can be other objects go through this object. After find the tarin is passing thought the sensor, transmit the signal to receiver side and receiver should get the signal. After that signal come to the receiver side, motor is used to operate the gate and close the gate. After give some time to train to pass the crossing and after that system automatically open the gate.

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Human error has been the main reason for the train accidents that have occurred in Sri Lanka. Mainly, most of the accidents happen at the railroad crossings, and most of the control problems also happen at the railroad crossings because all of the railroad crossings are operated using manpower. In this project mainly forces about to reduce no of accident that can be happen in the Sri Lanka railway crossings. In their mainly used wireless communication system, Arduinos and sensors to build this project. This train crossing system giving so much of benefits to government as well as general public. Because of this equipment, there are no want man to operate the gate and it is reducing the government expanses. Some train crossings are don’t have the man to operate and because of that there can be so much of accident can happen. So, this equipment can place every crossing because this can be implemented very low coat. Otherwise, this system is safe for the general public. Because of that system, train transportation become very simple and safe transportation method and it will be given so much of benefit to people.

Methodology

This project is about wireless red signal alerting for rail track crossings by using the NRF24L01 WIFI Module, and mainly this project is done to reduce the number of accidents that happen at railway crossings. Because in the railway crossings’ gates are operated by human and it has a very risk when there is no man to operate this system. Using this system, there can be reduced no of accidents that can be happen in the railway crossing. Some railroad crossings don’t have a gate, and children as well as animals are going through this crossing. So, this kind of accurate security system is very useful for saving their lives.

 According to this project, railway crossing gate is closed as the output when the train is come near to the cross. Here, wire-less connection method is used to communicate with red light alert system from user. Mainly there are two side in this project and those are sending side and receiving side. To make a transmitter and receiver, two NRF24L01 WIFI modules are used with two Arduinos. The transmitter and receiver sides are codding to their tasks, and the transmitter should transmit the signals to the receiver, and the receiver should get the signal that was transmitted by the transmitter. This transmitter side is places in the far away 800m from the cross gate. Here we place the two IR sensors to identify whether an object is passing the IR sensor, and two sensors are used to measure whether the object length is more than 10 m. We measure this length because this object is identified as a train. Because there can be other objects go through this object. After finding the train passing the sensor, transmit the signal to the receiver side, and the receiver should get the signal. After that signal comes to the receiver side, a motor is used to operate the gate and close the gate. After give some time to train to pass the crossing and after that system automatically open the gate.