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SMART SOLUTIONS FOR RAILWAYS

ABSTRACT:

Almost all the countries across the globe strive to meet the demand for safe, fast and reliable rail services. Lack of operational efficiency and reliability, safety and security issues, besides aging railway systems and practices are haunting various countries to bring about a change in their existing railway systems. The global rail industry struggles to meet the increasing demand for freight and passenger transportation due to lack of optimized use of rail network and inefficient use of rail assets. Apart from this major problem, people are suffering while booking tickets. So the web application is designed to reduce the workload of the user and also the use of paper. Here in this project, we are going to design a web application which is useful for booking tickets.

INTRODUCTION:

We wanted to be apart of our surrounding with some change and advancement so that it can bring the better life of the middle class and lower class people to travel in high secutity and advanced locomotions .the train is one and only most widely used transportion,and not only for this they are used for goods transportion also .Indian railways are not able to facilate the customer properly due to crowded amount of people. Statistics show that the leading cause of death by injury in railways traffic accidents(two train collision each other). There are number of causes for which an accident can occur, some of them are; lack of training for driving or less experinessed, use of mobile phone while driving, unskilled drivers, driving while intoxicated, bad railway tack condition, overloading in tain and negligence traffic management. In this survey paper, we briefly review selected railway accidents detection techniques and propose a solution. Rear end crashes occur mainly due to obstracle and crack in tracks.According to recent statistics, a major percentage of train accident happen due to not proper survillance of railway track.

In feb a train was travelling in the forest range of bihar state were five elephant were hit by the train which was moving ata high speed.Collisions of train happened in last year june were the indian railway minister felt guilty. a moderate rate of 2% fatalities compared to all other types of crashes, it represents the highest rate of injuries that is 22% and also the highest percentage of loss of life, being 28%. There have been enormous efforts to develop an algorithm in the field of automation of smart railways Systems (ASRS).An intelligentin railways transportation system (IRTS) is an advanced application, which aims to provide services and protect the life of people inside and also outside the railway.

The existing system in semi automated railwaysaccidents are occuring at frequently, consideration this inmind we want to bring some change and make it effective so that it becomes a complsory and law for practice. Once the implimention of smart train with lot of new techonology many ideas have been proposed for essential advancement in developing system meant for better travelling livihood. A system based on vision and video processing has been proposed that could employ a camera to take video images and extract features for finding the obstacleand behaviour of obstacle around and draw conclusion to avoid acidents. Live camera that analize the images from the video to recognise obstacleand sends an alert if it detect a automated engine breaking using EPM module. The systemwe proposed will prevent collision of any form of acccident in the railways system.

PROPOSED DESIGN:

Power supply: It is required for movement of stepper motor. The power supply given is 12V and 5A from power supply adapter.

Stepper Motor: Stepper motors are DC motors that travel at critical speeds. They have multiple coils arranged in groups called "phases. By enabling each phase in a row, the vehicle rotates one step at a time. Stepper motor, rotate the entire pulley system where the ultrasonic sensor is connected [14].

Raspberry Pi: Raspberry pi is a small computer and is the heart of this project. It will do all signal processing. Raspberry Pi is a small computer and is the heart of this project. It will do all signal processing. All the elements are interconnected and perform the necessary function as we provide command with raspberry pi pin [15].

Ultrasonic Sensor: The function of ultrasonic sensor here is to detect the fault and calculate the distance by sending ultrasonic waves to receiver where the fault is occurred.

CONCLUSION:

Accidents occurring in Railway transportation system cost a large number of lives. So this system helps us to prevent accidents and giving information about faults or cracks in advance to railway authorities. So that they can fix them and accidents cases becomes less. This project is cost effective. By using more techniques they can be modified and developed according to their applications.

FUTURE SCOPE:

In future CCTV systems with IP based camera can be used for monitoring the visual videos captured from the track. It will also increase security for both passengers and railways. GPS can also be used to detect exact location of track fault area, IP cameras can also be used to show fault with the help of video. Locations on Google maps with the help of sensors can be used to detect in which area track is broken.

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