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Effective Road Accident Monitoring and Alert System

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Abstract: *Indian roads are undoubtedly the most dangerous in the world. In 2015, around 1, 46,133 people were killed on Indian roads, states Ministry of Road Transport and Highways data. This translates in to 11 deaths per 100,000 people or one life snuffed out every 3.6 minutes. To reduce these alarming figures, the ministry of road and transport has earmarked Rs. 11,000 core to fix the '**black spots**' or accident prone areas on the national highways yet the accidents are increasing on daily basics. Its only due to the unavailability of information about the road of our area or that we travelling. to overcome this scenarios we are going to developing a web portal, with the help of this portal every public can find out the accident prone region when they are travelling. In this portal we have administrator they may be handled by the road safety depart of our nation. Under that we have police station, they have the authority to add the road and routes of each district and they can add the accident zone with geo location. Try are the one who monitor the system when some accidents are happens. They can add accident information to the system regarding how the accidents are happens how many where killed, they status of each accidents, type of accidents. When it's happen etc these are details can be added by the police station. When traffic safety department login to the system they can view all the information about the accident details of each zones. When a public is travelling through any accident zone our system will gather the geo location and monitor with our accident zone when they enter any accident zone radius that is 1 km the system immediately send the notification that to the user that they are entering into a accident zone and they also view the percussion measurements that needed to follow in that route. Through this portal we can truly reduce the accidents and we can save lot of life's.*

Keywords: HTML,CSS, Javascript, Effective road accident monitoring and alert

I. INTRODUCTION

At present time in country like India where there is high population and due to urbanization there is a high demand of cars by the people which has eventually led to increase road traffic and accidents, thuskeeps the lives of people at high risk. Street car crashes has driven for in excess of 1.25 million deaths worldwide each and every year and in excess of two hundred thousand deaths in India alone in 2013, as detailed by the World Health Organization . Although the hasty increase in the number of vehicles in India, poor infrastructure and defects in road engineering are worrying, poor driver training remains the biggest challenge. This is due to the lack of the alerting system and emergency providence in the country. All things considered it is important to have a framework which diminishes the odds of mishap event and giving medicinal offices to the casualties as ahead of schedule as conceivable with a specific end goal to spare existences of the general population experienced road accidents. There are systems that runs for solving above problems by decreasing the chances of road accident occurrence which involves various methods used for vehicle to vehicle communication so that vehicles can share the information among them and hence can lead to avoidance of accidents between them up to some extent. A latest technology known as Internet of Vehicles (IOV) is becoming popular with respect to safety of vehicles running on the road. Many systems involves Vehicular Ad hoc Network(VANET) which is a subpart of IOV for accident avoidance by providing vehicle to vehicle (V2V) communication which shares the data about the street and traffic conditions and hence leverages a high chance of accident avoidance. Also there are some systems which make usage of different laser sensors like Radio Detection And

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Ranging(RADAR), Light Detection And Ranging(LIDAR) to detect the collision of the vehicle prior to the collision which helps to minimize the accidents. But these sensors work well when the intervehicular space is more than 1 m which is a kind of disadvantage of these system. Systems are also designed for detecting the accidents that occurs on the road and alerting about it to various respective team. These two systems together can work as pre and post accident detection and alert system. The pre detection system will work for detecting the accident prior to its happening, it will include mechanisms which will collect information about the vehicle environment on the road and use that information to alert the driver to avoid the mishappening that can occur and the post accident detection and alert system will work for determining accidents and alerting teams to provide victims proper help facilities.

There are mainly five modules:

- Admin
- Police
- User
- Road Safety Department
- Pwd

In this paper, we have 5 login such as for Admin, Police, User, Road Safety Department and Pwd. The admin module allows to approve or reject user, notification add , complaint view etc. The Police is the other module of the project. The Police can road accident view , Accident area Search etc. The User is another module of the project. User can add accident report and add road complaints, message through the department and view emergency alert are the process of user module. Road Safety Department is another module in which department can reply back the user mrssage, graph plot accident report .Pwd is a another module in the project. User can add emergency details and view road complaints of pwd module. The web application 'Effective Road Accident Monitoring and alert system' support the technical feasibility to great extends. That is this web application can be operated with the minimum technical support. It uses Angular as front end, MYSQL as database. And also it provides accuracy, reliability, ease of access and data security.

II. METHODOLOGY

System analysis is the starting point for system design. System Analysis is a detailed study of various operations performed by a system and its relationships within and outside the system. The basic aim of system analysis is to obtain a clear understanding of the needs of all users, what exactly is decided from the software and what the constraints on the solutions. The analysis of the role of proposed system and the identification of the requirements that it should meet the strength and weakness is determined for the better design of the system. Once the analysis is complete, the analyst should have a firm understanding of what is to requirements can be implemented before system is to be about the current mode of the operation are basic source of information for the analysis. The role of hardware, software, database, people, procedures and system elements must be identified and operational requirements must be elected, analyzed, specified, modeled, validated and managed. These activities are the foundation of system analysis

III. EXISTING AND PROPOSED SYSTEMS

A) Existing Systems

- There is no centralized website for controlling the road accident problems.
- Man power is needed after the problem solving.
- *Public don't know about the accident prone areas.
- Police control not implemented.
- Year based traffic/road accident information not get.

B) Limitations of Existing Systems

- Existing system does not satisfy all the requirements of the users.
- Information cannot be collected, processed and communication more quickly and efficiently.
- Current a working system doesn't ensure that right information reaches the right person at the right time.

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C) Proposed System: Effective Road Accident Monitoring and alert system

- It is a centralized website for controlling the road accident problems
- Public don't know about the accident prone areas
- 3.Police control is implemented 4.Year based traffic/road accident information are available

D) Advantages of Effective Road Accident Monitoring and alert system

- Increased efficiency and reliability
- Easy to access
- Accessibility, usability, understandability
- The options used can be easily accessed, used and realized
- Provide accurate information for taking necessary decisions

IV. BACKGROUND

Angular is a JavaScript-based open-source front-end web framework mainly maintained by Google and by a community of individuals and corporations to address many of the challenges encountered in developing single-page applications.HTML is a very easy and simple language. HTML can be easily understood and modified. It is very easy to make an effective presentation with HTML. It is a markup language, so it provides a flexible way to design web pages along with the text. CodeIgniter is an open-source software rapid development web framework, for use in building dynamic web sites with PHP. MySQL is an open source, SQL Relational Database Management System (RDBMS) that is free for many uses.

V. FUTURE ENHANCEMENT

The future enhancement of our project is to reduce the limitations to some extent. The enhancement may be required if there will be any change in the requirements, user environment or priorities. Enhancement means adding, modifying or developing the code to support the changes in specification. Every module in the system is being developed carefully such that the future enhancement does not affect the basic performance of the system. In the future, we can add an effective road accident app in an extension.

VI. RESULTS AND DISCUSSIONS

The implementation of an effective road accident monitoring and alert system has yielded promising results in enhancing road safety. The system's real-time detection and immediate alerts to drivers and authorities have led to a substantial reduction in accident rates by prompting timely preventive actions. Moreover, the system's seamless integration with emergency services has significantly improved response times, potentially saving lives. Valuable data insights garnered from the system's analysis of accident patterns and risk factors have enabled targeted interventions, while the promotion of safer driving behavior through continuous alerts has contributed to an overall improvement in road user habits. However, discussions surrounding such a system encompass crucial aspects including accuracy, privacy, integration challenges, costs, public education, legal considerations, and the anticipation of future technological advancements, which collectively shape the system's long-term efficacy and societal impact

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VII. SCREENSHOTS

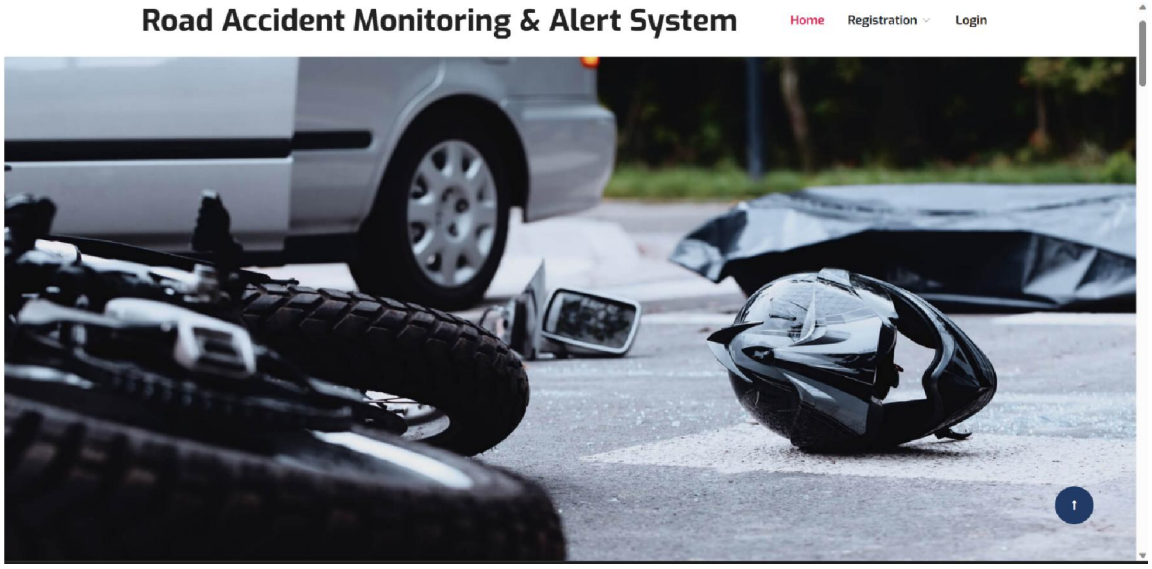

Figure 1: Home Page

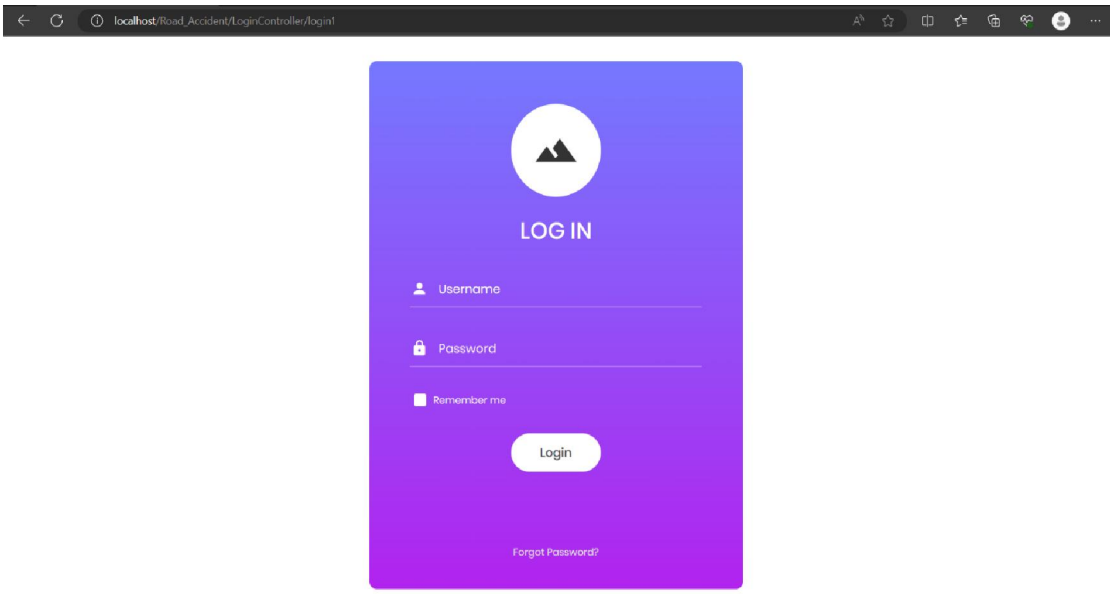

Figure 2: Login Page

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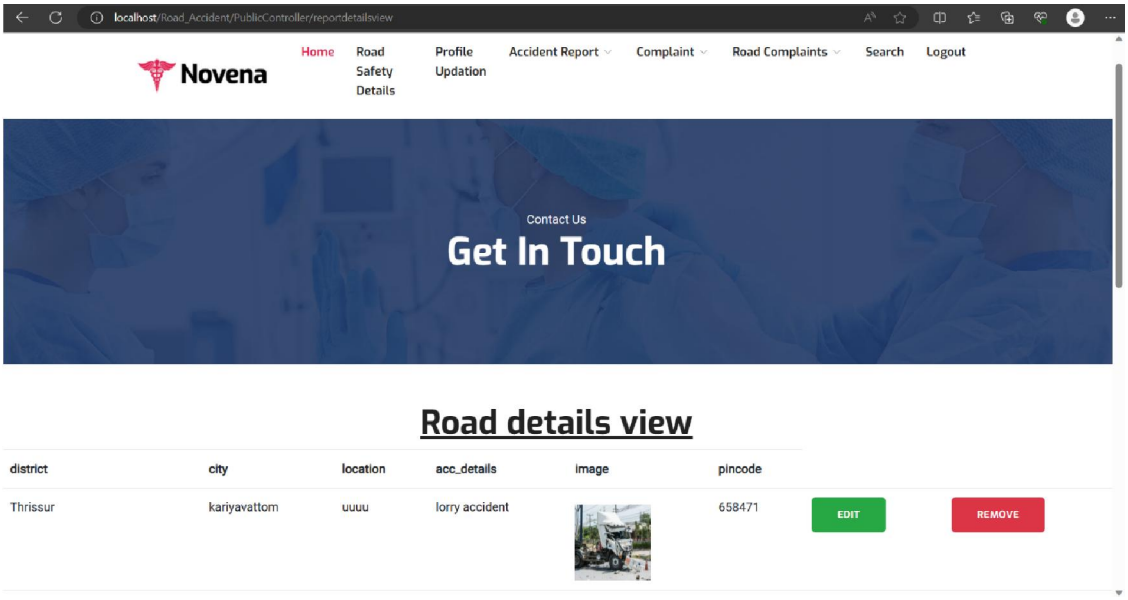

Figure 3: public Accident uploads Page

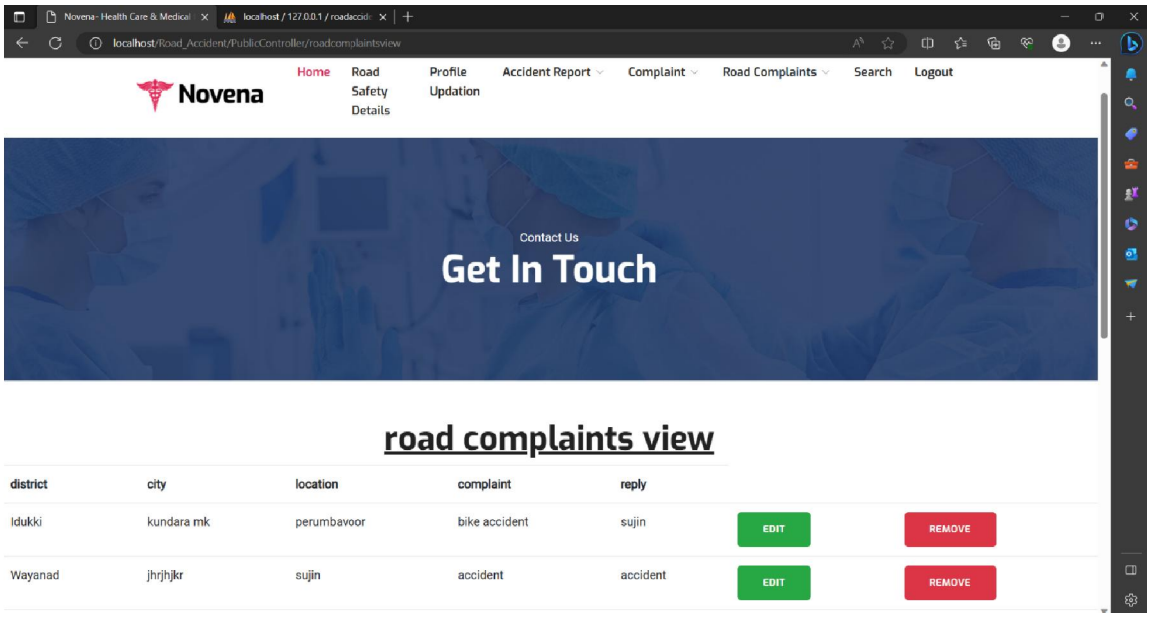

Figure 4: public reply view page

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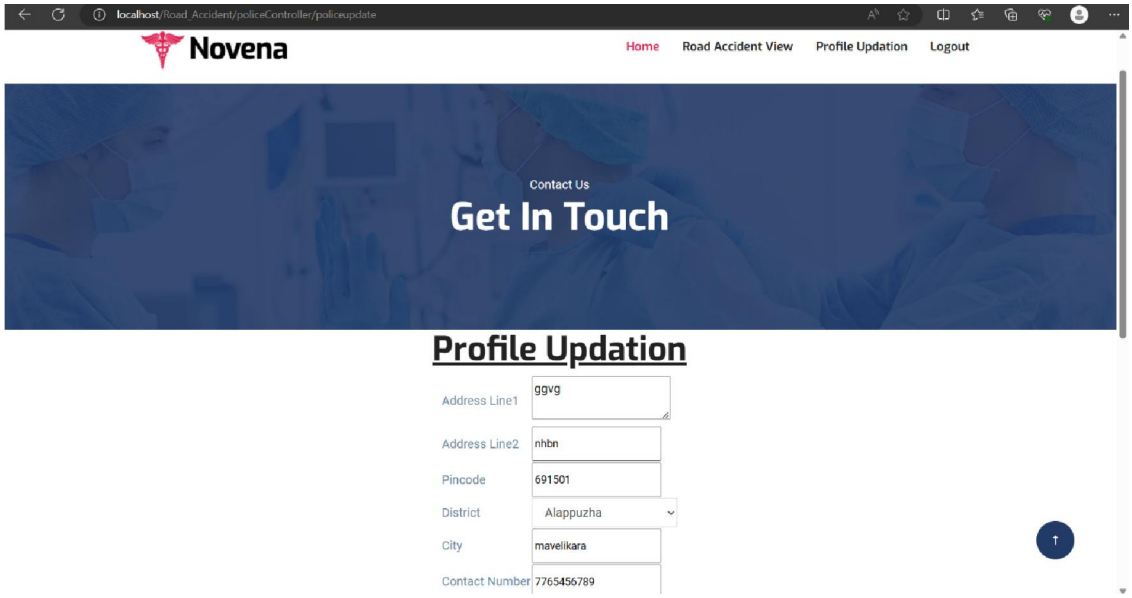

Figure 5: Police profile updation

VIII. CONCLUSION

The new system has overcome most of the limitations of the existing system and works according to the design specification given. The developed systems dispense the problem and needs have by providing reliable and comprehensive information. All the requirements project by the user met by the system. The newly developed system consumes less processing time and all details are updated and processed immediately. Since the screen provides online help messages and is very user friendly, any user will get familiarized with its usage. Modules are designed to be highly flexible so that any failure requirements can be easily added to the modules without facing many problems. In this project road accident be can be countable reduced.

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