OVERVIEW - HELP REDUCE ROAD INJURIES AND DEATHS

Introduction

The result of the developed system shows that road safety officers, users, policy makers and all other stakeholders can be able to register, login, submit reports and run queries on information that has been previously entered into the system such as the accidents that occurred on a particular route or the accident in which an identified victim was involved. Policy makers can run these queries in order to take appropriate steps in minimizing road traffic accident occurrences.

In conclusion, this system will help create a paperless alternative to the present method of Road Traffic Accident information and thus make information dissemination quicker and also improve first aid response to accident occurrences.

Methodology

In order to develop the prototype, an accident monitoring database would be developed using MySQL. In the process of developing the road traffic accident database, different tables, files, records and fields will be created. As a result, different road traffic accident factors such as the route, the date of the accident, description of the vehicle(s) involved, the cause of the accident, environment, collision type, nature of injury, hospitals referred, and health status will be stored in the database.
WampServer will be used to write MySQL queries for populating the database. The prototype will be implemented using Adobe Dreamweaver; Apache will be used as the web server to provide the basic functionality of the monitoring system. PHP will be used as a scripting language to program the server-side manipulation of the knowledge in the database.

General Objective

The aim of this study is to come up with a solution that helps avoid, alert, inform, monitor, and report road injuries and deaths.

Problem Statement

Emergency Medical Services (EMS) has been identified as a high-risk industry with injuries and deaths among both service providers and the public. The current lack of a comprehensive EMS injury data system capable of collecting, cataloging and reporting standardized EMS crash and non-crash related injury data severely limit the industry's ability to develop, test, and implement mitigation strategies. The task of identifying injury causative factors becomes far too speculative without timely, accurate, complete, integrated, and accessible data that includes location, cause, contribution factors, and related activities associated with injuries involving EMS personnel.

System Architecture and Solution

In the system, a client-server architecture will be used. The client-server architecture makes use of the Web browser as the client. This architecture makes it possible to use any internet-enabled device with a Web browser to access the system; this is in order to ensure that the system is easily available and yet cheap to implement. In this architecture, most of the processing duties are assigned to the server; the client's duty is to display the processed data and information on the screen, which in this case is the Web browser.

This system supports a database, business logic, and user interface as the major areas of design. The User Machine is the device used to access the pages and forms used for the web application, e.g. phones and personal computers, etc. The Web Server is the program that allows the application to run and behave as though it is hosted on the internet, e.g. WAMP server, XAMPP, Apache, etc. The Back-End is the webserver and the database management system (DBMS) that holds and manages the data pool used by the application. The PHP Script controls the exchange of data between the front-end and the application back-end.

The road safety officer on the road, upon having an accident alert, immediately relays road traffic accident-related information to the officer in the office so that immediate action could be taken. Also, the Road users play a very important role as they also submit accident reports by submitting reports on the website.

The Homepage

This part of the user interface holds all the navigations of the application. This index page contains links to help existing users of the Road Traffic Accident Monitoring System to log in and new users to register. There is also news relating to road safety and accident prevention on the homepage. On the homepage, the user is able to submit an accident report, new users are able to register and returning users are able to log in.

The Registration Page

On the Report page, the intended use of the system is required to provide his/her username, password, Full name, phone number, and email address. Upon entering these details, the data will be sent into the database. All fields are required for successful registration and if one field is left empty, a prompt will come up.

The Login Page

When the user of the system encounters the login page, he will be required to enter his username and his password to be able to log into the system. For a login attempt to be successful, the username and password combination input by the user must correspond to values that are available in the database.

The Admin Dashboard Page

On the Admin Dashboard Page, the user has the ability to submit a report, query the database, view profile, go to the homepage, or logout.

“Report Accident” Page

The report page allows the user to interact with the site administrator by reporting the current state of victims and property involved in an accident as he travels along a particular route. This report is therefore sent to the incidence table of the

database, where it is checked and validated by the administrator and then updated into the various fields of the database for appropriate report generation.
The road's users are allowed to also report the accident occurrences on a particular road at any point in time. The road user can also make reports even if he does not have an account. The user clicks on the "Chat with Officer" link on the homepage and starts a chat with an officer through a chatbot; he will be required to enter his name, his phone number, and the description of the accident. This information is sent to the database where it will be validated by the administrator and finally updated. This page should also include a list of all nearby hospitals available nearby and how far they are from the accident via google maps.

The Database Query Page

The user of the system has the ability to query the system based on three variables: The route, severity (High, medium, or low) and Names (which would be entered in the text field).

The Individual Report Page

This page gives information about individual accident reports based on location (Nearest town, distance from the nearest town, type of road, road surface condition, weather condition, light condition), vehicle information (vehicle type, number plate, vehicle condition, and vehicle color), Accident Details (Date of Occurrence, Vehicle count, Total Victim count, uninjured victim count, injured victim count, and dead victim count). Also, details about identification documents that were found at the accident scene are also entered on this page and finally, details that pertain to first aid (nearest town, nearest hospitals, and types of injuries) will also be entered on this page.

Contact Page

On the contact page, any user with complaints or information can use this page to send messages to the system administrator or to road safety officers. The sender is required to enter his name, phone number, email address, the subject of the message, and the message body.

First-Aid Page

On the first-aid page, users don’t have to login to access it. They are presented with most common first aid measures to perform