

Ambulance Alerting System



A Project Report

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BONAFIDE CERTIFICATE

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LIST OF ABBREVIATION

S. No.	Abbreviation	Full Form
1	HTML	Hyper Text Markup Language
2	CSS	Cascading Style Sheet
3	JS	JavaScript
4	SQL	Structured Query Language
5	DBMS	Data Base Management System
6	GPS	Global Positioning System
7	UI	User Interface
8	UX	User Experience

ABSTRACT

It is a common sight at busy traffic junctions where ambulances struggle to find a way to carry patients for treatment during the golden hour. It even happens in this world with the technology that able to send satellites to space. By reducing the traffic time on the roads for the ambulance we may able to save the patients. If we can able to save that time, doctor utilise those time to give first aid and diagnose the problem. The problem is that the traffic police do not aware of the ambulance that stuck in the traffic. Our concept is to send a message about that the ambulance coming way to the traffic police. So that, they can clear the traffic on that way, so the ambulance doesn't need to wait for in the traffic. It is helpful for the highly populated and highly traffic cities like Chennai, Coimbatore, Bangalore, etc. According to a report published by Times of India about 146,133 people were killed in road accidents in India in the year 2016. Unfortunately, about 30% of deaths are caused due to delayed ambulance. Another Indian Government data shows, more than 50% of heart attack cases reach hospital late, which can constitute unavailability of ambulances too but majority of it is due to patients stuck in traffic.

CHAPTER 1

1. Introduction of Ambulance Alerting System

1.1. Introduction

Ambulance is used to take the patient to the hospital at maximum fast that it could take the patient to the hospital. But in the high populated city or high traffic city, some ambulance struck at the traffic that is unnoticed by the traffic police to make a way for it. Taking the patients early to the hospital will increase the probability of the life of the patient. We need some technology or system that send the information to the traffic police regarding the ambulance is coming in this route so they can make the way for it and ambulance can able to reach the hospital early. To solve this, we introduce an Ambulance Alerting System which will able to send the ambulance information to the traffic police.

1.2. Problem Statement

It is a common sight at busy traffic junctions where ambulances struggle to find a way to carry patients for treatment during the golden hours. Employing a system that can send an ambulance coming information to the traffic police, so he can able to give path. Which help ambulance to reach hospital early.



Fig. 1.2.1 Ambulance Alerting System

1.3. Aim of the project

Aim of this project is take the patient to the hospital in ambulance as early by not get struck in the traffic by sending the ambulance coming information to the traffic police, so he/she can make the way for it. This may save the patient's life.

1.4. Motivation

Taking the patient to the hospital as early as possible can able to save the life of the patient. Ambulance plays an important role in taking the patients to the hospital. But the traffic in the high traffic city struck the ambulance in the traffic. A report published in Times of India about 146,133 people were killed in road accidents in India in the year 2016. Unfortunately, about 30% of deaths are caused due to delayed ambulance. Another Indian government data shows more than 50% of heart attack patients reach hospital late, which can constitute unavailability of ambulances too but majority of it is due to patients' stocks in traffic. It motivated us to do the Ambulance alerting system.

CHAPTER 2

2. Planning and Analysing

2.1. Project User Interaction Analysis:

Application interacting person	What they do?	What the Application need to do?
Ambulance Driver	<ul style="list-style-type: none">● Ambulance Driver can able to enter the type of hospital (Heart, Brain, General Hospital. Etc), current and destination location● Able to see the direction to the destination	<ul style="list-style-type: none">● Application shows the best hospital to go fast and it need show based on the availability of the bed and the doctor in the hospital● It shows the number of signals in between and send the message to the traffic police to clear the traffic in those signals● It needs to send the information to the required hospital in the destination location.
Traffic Police	<ul style="list-style-type: none">● Need to clear the traffic in the ambulance travelling road to make ambulance reach the hospital early● If the traffic is high traffic police need to send the road is busy message to the ambulance drive so the ambulance drive choose the alternative road	<ul style="list-style-type: none">● Send the details about the ambulance travelling road details to make them free by the traffic police● Send the high traffic details so that the ambulance can take the alternative path
Hospital	<ul style="list-style-type: none">● They need to get the patient details and make the first aid ready and the bed ready for the patient● They need to send message if the hospital is full so the ambulance driver can take the patient to the next available hospital	<ul style="list-style-type: none">● Send the details about the patient to the hospital● Send the bed availability details to the ambulance driver

Table 2.1: Project Analysis

2.2. Flow Diagram

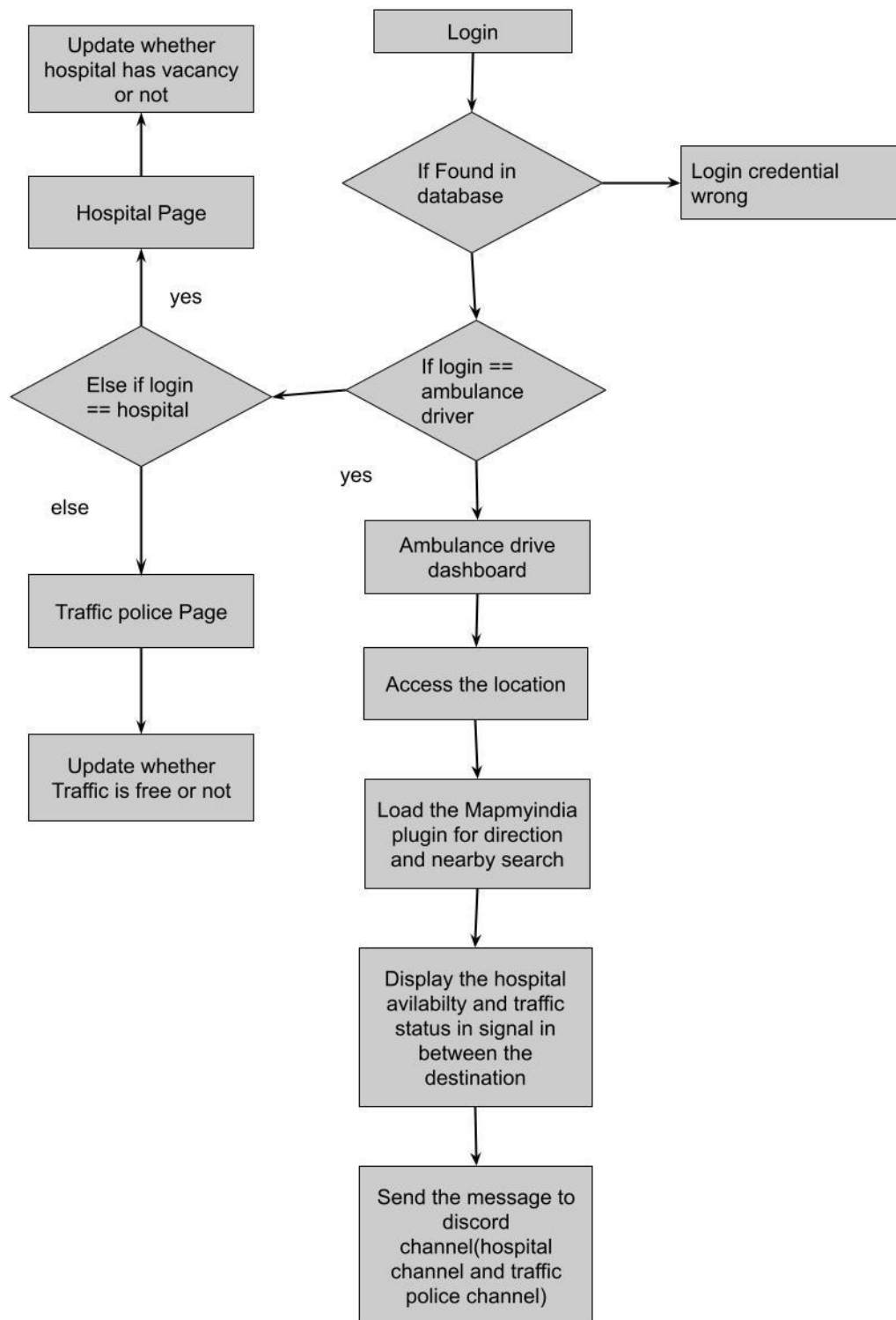


Fig. 2.2.1: Flow diagram

When user login to our website it checks whether the user is registered or not, if not it shows invalid login credentials. If the user record is found in the database, then it checks whether the user is ambulance driver. If no then it checks whether the user is hospital. If yes it loads the hospital page and the hospital can able to update whether the hospital has vacancy or not. If user is not the hospital, then it loads traffic police page and the traffic police can able to update whether traffic is free or not. If the user is ambulance driver, then the ambulance driver page will be loaded. Then it will access the location, then loads the MapMyIndia plugin for direction and nearby search plugin, displays the hospital availability and traffic status in signals in between the destination.

2.3. Block Diagram

The Home page of the of Ambulance alerting system is login page. Based on the login details, the server automatically redirects the user to the ambulance driver page, traffic police page, hospital page respectively. The ngrok makes the localhost website to internet. Python (flask server) is used to serve the html, CSS, js and also act as the backend. In ambulance driver page they can able to see the nearby hospitals and the direction for that hospital, this is done using the MapMyIndia Direction API and Nearby API. Ambulance driver can able to select the destination and current location to send the information to traffic police and hospital discord channels using a discord webhook. Ambulance driver can able to see the list of hospital in the destination and the bed availability of that hospital in the webpage. Hospital can change the hospital bed availability status to yes or no from there page. Similarly, Traffic police can change the road status to free or busy based on the traffic from the webpage. MySQL is used to store the data in form of the table. Using the Admin page we can register the ambulance driver, traffic police, hospital. So, they able to login on the website and perform the necessary action.

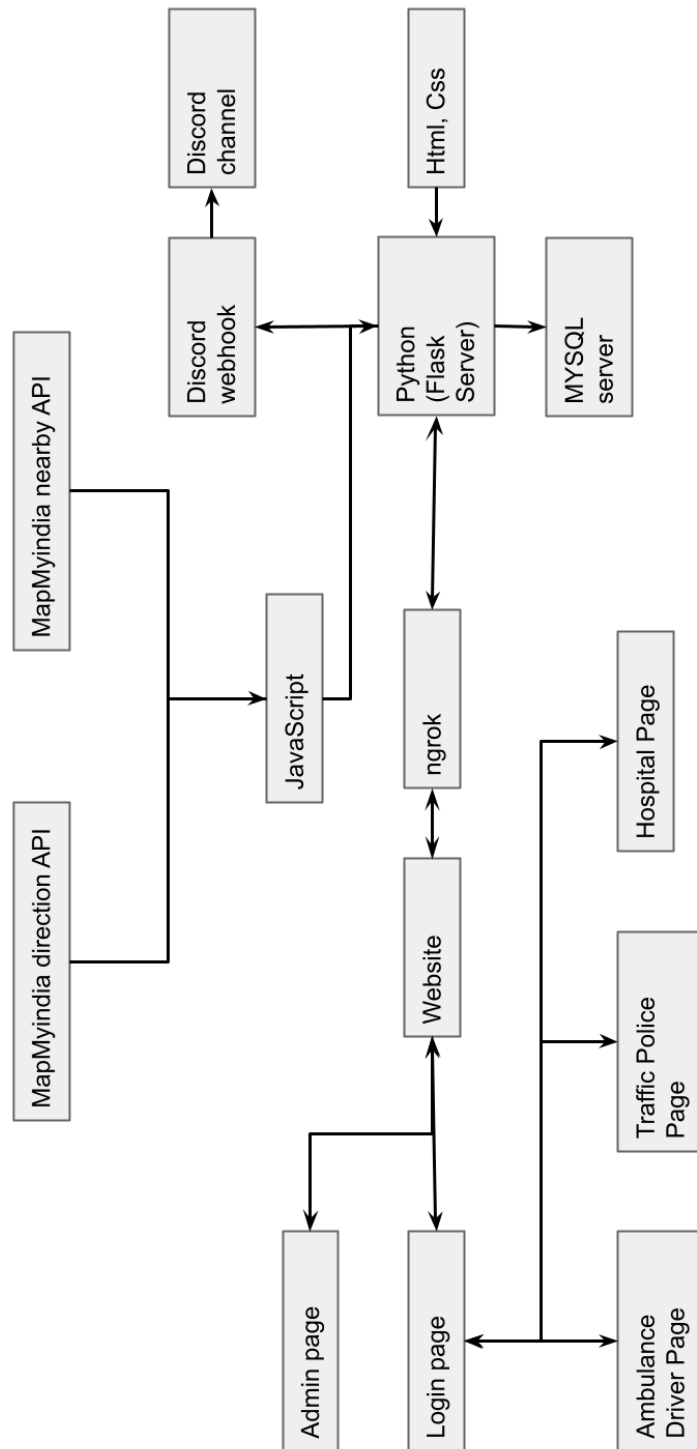


Fig. 2.3.1: Block Diagram

CHAPTER 3

3. Tools used

S.NO	Tools		Usage in this project
3.1	Front-End		Visual content that appears in the screen
	3.1.1	HTML	Used to display the content in the webpage
	3.1.2	CSS	Used to style the webpage
	3.1.3	JavaScript	Used to make website functionable
3.2	Back-End		Process the instruction
	3.2.1	Python	The back-end code is written in Python
	3.2.2	Flask	Flask is the framework of python that serve front-end
	3.2.3	MySQL	Used to store data
3.3	ngrok		Used to serve the localhost to internet
3.4	MapMyIndia		Map tool
	3.4.1	MapMyIndia Direction Plugin	Used to give direction to the ambulance driver
	3.4.2	MapMyIndia Nearby Search Plugin	Used to give nearby hospital to ambulance driver
3.5	Discord		Discord message app
	3.5.1	Discord Server	Used to send and receive message in the discord app
	3.5.2	Discord Webhook	Used to send message from python to the discord server

Table 3.1: Tools used in this project

3.1. Front-End

Front-end web development, also known as client-side development is the practice of producing HTML, CSS and JavaScript for a website or Web Application so that a user can see and interact with them directly. The challenge associated with front end development is that the tools and techniques used to create the front end of a website change constantly and so the developer needs to constantly be aware of how the field is developing.

The objective of designing a site is to ensure that when the users open up the site, they see the information in a format that is easy to read and relevant. This is further complicated by the fact that users now use a large variety of devices with varying screen sizes and resolutions thus forcing the designer to take into consideration these aspects when designing the site. They need to ensure that their site comes up correctly in different browsers (cross-browser), different operating systems (cross-platform) and different devices (cross-device), which requires careful planning on the side of the developer.

3.1.1. HTML (Hyper Text Markup Language)

The Hypertext Markup Language or HTML is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript.

Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes, and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as `` and `<input />` directly introduce content into the page. Other tags such as `<p>` surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags but use them to interpret the content of the page.

HTML can embed programs written in a scripting language such as JavaScript, which affects the behaviour and content of web pages. The inclusion of CSS defines the look and

layout of content. The World Wide Web Consortium (W3C), former maintainer of the HTML and current maintainer of the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997. A form of HTML, known as HTML5, is used to display video and audio, primarily using the <canvas> element, in collaboration with JavaScript.

3.1.2. CSS (Cascade Style Sheet)

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML (including XML dialects such as SVG, MathML or XHTML). CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

CSS is designed to enable the separation of content and presentation, including layout, colours, and fonts. This separation can improve content accessibility; provide more flexibility and control in the specification of presentation characteristics; enable multiple web pages to share formatting by specifying the relevant CSS in a separate .CSS file, which reduces complexity and repetition in the structural content; and enable the .CSS file to be cached to improve the page load speed between the pages that share the file and its formatting.

Separation of formatting and content also makes it feasible to present the same markup page in different styles for different rendering methods, such as on-screen, in print, by voice (via speech-based browser or screen reader), and on Braille-based tactile devices. CSS also has rules for alternate formatting if the content is accessed on a mobile device.

The name cascading comes from the specified priority scheme to determine which style rule applies if more than one rule matches a particular element. This cascading priority scheme is predictable.

The CSS specifications are maintained by the World Wide Web Consortium (W3C). Internet media type (MIME type) text/CSS is registered for use with CSS by RFC 2318 (March 1998). The W3C operates a free CSS validation service for CSS documents.

In addition to HTML, other markup languages support the use of CSS including XHTML, plain XML, SVG, and XUL.

3.1.3. JavaScript

JavaScript, often abbreviated as JS, is a programming language that is one of the core technologies of the World Wide Web, alongside HTML and CSS. As of 2022, 98% of websites use JavaScript on the client side for webpage behaviour, often incorporating third-party libraries. All major web browsers have a dedicated JavaScript engine to execute the code on users' devices.

JavaScript is a high-level, often just-in-time compiled language that conforms to the ECMAScript standard. It has dynamic typing, prototype-based object-orientation, and first-class functions. It is multi-paradigm, supporting event-driven, functional, and imperative programming styles. It has application programming interfaces (APIs) for working with text, dates, regular expressions, standard data structures, and the Document Object Model (DOM).

The ECMAScript standard does not include any input/output (I/O), such as networking, storage, or graphics facilities. In practice, the web browser or other runtime system provides JavaScript APIs for I/O.

JavaScript engines were originally used only in web browsers, but are now core components of some servers and a variety of applications. The most popular runtime system for this usage is Node.js.

Although Java and JavaScript are similar in name, syntax, and respective standard libraries, the two languages are distinct and differ greatly in design.

The use of JavaScript has expanded beyond its web browser roots. JavaScript engines are now embedded in a variety of other software systems, both for server-side website deployments and non-browser applications. Initial attempts at promoting server-side JavaScript usage were Netscape Enterprise Server and Microsoft's Internet Information Services, but they were small niches. Server-side usage eventually started to grow in the late 2000s, with the creation of Node.js and other approaches. Electron, Cordova, React Native, and other application frameworks have been used to create many applications with behaviour implemented in JavaScript. Other non-browser applications include Adobe Acrobat support for scripting PDF documents and GNOME Shell extensions written in JavaScript. JavaScript has recently begun to appear in some embedded systems, usually by leveraging Node.js.

3.2. Back-end

3.2.1. Python

Python is a high-level, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation. Python is dynamically-typed and garbage-collected. It supports multiple programming paradigms, including structured (particularly procedural), object-oriented and functional programming. It is often described as a "batteries included" language due to its comprehensive standard library. Guido van Rossum began working on Python in the late 1980s as a successor to the ABC programming language and first released it in 1991 as Python 0.9.0. Python 2.0 was released in 2000 and introduced new features such as list comprehensions, cycle-detecting garbage collection, reference counting, and Unicode support. Python 3.0, released in 2008, was a major revision that is not completely backward-compatible with earlier versions. Python 2 was discontinued with version 2.7.18 in 2020. Python consistently ranks as one of the most popular programming languages.

Python can serve as a scripting language for web applications, e.g., via mows for the Apache webserver. With Web Server Gateway Interface, a standard API has evolved to facilitate these applications. Web frameworks like Django, Pylons, Pyramid, Turnovers, web2py, Tornado, Flask, Bottle, and Zopf support developers in the design and maintenance of complex applications. Pyjs and IronPython can be used to develop the client-side of Ajax-based applications. SQLAlchemy can be used as a data mapper to a relational database. Twisted is a framework to program communications between computers, and is used (for example) by Dropbox. Libraries such as NumPy, SciPy, and Matplotlib allow the effective use of Python in scientific computing, with specialized libraries such as Biopython and Astropy providing domain-specific functionality. SageMath is a computer algebra system with a notebook interface programmable in Python: its library covers many aspects of mathematics, including algebra, combinatorics, numerical mathematics, number theory, and calculus. OpenCV has Python bindings with a rich set of features for computer vision and image processing. Python is commonly used in artificial intelligence projects and machine learning projects with the help of libraries like TensorFlow, Keras, Pytorch, and Scikit-learn. As a scripting language with a modular architecture, simple syntax, and rich text processing tools, Python is often used for natural language processing. Python can also be used to create games, with libraries such as Pygame, which can make 2D games. Python has been successfully embedded in many software

products as a scripting language, including in finite element method software such as Abaqus, 3D parametric modelers like FreeCAD, 3D animation packages such as 3ds Max, Blender, Cinema 4D, Lightwave, Houdini, Maya, modo, MotionBuilder, Softimage, the visual effects compositor Nuke, 2D imaging programs like GIMP, Inkscape, Scribus and Paint Shop Pro, and musical notation programs like scorewriter and capella. GNU Debugger uses Python as a pretty printer to show complex structures such as C++ containers. Esri promotes Python as the best choice for writing scripts in ArcGIS. It has also been used in several video games, and has been adopted as first of the three available programming languages in Google App Engine, the other two being Java and Go. Many operating systems include Python as a standard component. It ships with most Linux distributions, AmigaOS 4 (using Python 2.7), FreeBSD (as a package), NetBSD, and OpenBSD (as a package) and can be used from the command line (terminal). Many Linux distributions use installers written in Python: Ubuntu uses the Ubiquity installer, while Red Hat Linux and Fedora Linux use the Anaconda installer. Gentoo Linux uses Python in its package management system, Portage. Python is used extensively in the information security industry, including in exploit development. Most of the Sugar software for the One Laptop per Child XO, developed at Sugar Labs since 2008, is written in Python. The Raspberry Pi single-board computer project has adopted Python as its main user-programming language. LibreOffice includes Python and intends to replace Java with Python. Its Python Scripting Provider is a core feature since Version 4.0 from 7 February 2013.

3.2.2. Flask

Flask is a micro web framework written in Python. It is classified as a microframework because it does not require particular tools or libraries. It has no database abstraction layer, form validation, or any other components where pre-existing third-party libraries provide common functions. However, Flask supports extensions that can add application features as if they were implemented in Flask itself. Extensions exist for object-relational mappers, form validation, upload handling, various open authentication technologies and several common framework related tools. Applications that use the Flask framework include Pinterest and LinkedIn.

Components

The microframework Flask is part of the Pallets Projects (formerly Pocoo), and based on several others of them, all under a BSD license.

Werkzeug Werkzeug (German for "tool") is a utility library for the Python programming language for Web Server Gateway Interface (WSGI) applications. Werkzeug can instantiate objects for request, response, and utility functions. It can be used as the basis for a custom software framework and supports Python 2.7 and 3.5 and later.

Jinja Main: Jinja (template engine) Jinja, also by Ronacher, is a template engine for the Python programming language. Similar to the Django web framework, it handles templates in a sandbox.

MarkupSafe MarkupSafe is a string handling library for the Python programming language. The eponymous MarkupSafe type extends the Python string type and marks its contents as "safe"; combining MarkupSafe with regular strings automatically escapes the unmarked strings, while avoiding double escaping of already marked strings.

ItsDangerous: ItsDangerous is a safe data serialization library for the Python programming language. It is used to store the session of a Flask application in a cookie without allowing users to tamper with the session contents.

Features of flask

- Development server and debugger
- Integrated support for unit testing
- RESTful request dispatching
- Uses Jinja templating
- Support for secure cookies (client side sessions)
- 100% WSGI 1.0 compliant
- Unicode-based
- Complete documentation
- Google App Engine compatibility
- Extensions available to extend functionality

3.2.3. MySQL

MySQL is an open-source relational database management system (RDBMS). Its name is a combination of "My", the name of co-founder Michael Widenius's daughter My, and "SQL", the abbreviation for Structured Query Language. A relational database organizes data into one or more data tables in which data may be related to each other; these relations help

structure the data. SQL is a language programmers use to create, modify and extract data from the relational database, as well as control user access to the database. In addition to relational databases and SQL, an RDBMS like MySQL works with an operating system to implement a relational database in a computer's storage system, manages users, allows for network access and facilitates testing database integrity and creation of backups. MySQL is free and open-source software under the terms of the GNU General Public License, and is also available under a variety of proprietary licenses. MySQL was owned and sponsored by the Swedish company MySQL AB, which was bought by Sun Microsystems (now Oracle Corporation). In 2010, when Oracle acquired Sun, Widenius forked the open-source MySQL project to create MariaDB. MySQL has stand-alone clients that allow users to interact directly with a MySQL database using SQL, but more often, MySQL is used with other programs to implement applications that need relational database capability. MySQL is a component of the LAMP web application software stack (and others), which is an acronym for Linux, Apache, MySQL, Perl/PHP/Python. MySQL is used by many database-driven web applications, including Drupal, Joomla, phpBB, and WordPress. MySQL is also used by many popular websites, including Facebook, Flickr, MediaWiki, Twitter, and YouTube.

Feature:

MySQL is offered under two different editions: the open source MySQL Community Server and the proprietary Enterprise Server. MySQL Enterprise Server is differentiated by a series of proprietary extensions which install as server plugins, but otherwise shares the version numbering system and is built from the same code base.

Major features as available in MySQL 5.6:

- A broad subset of ANSI SQL 99, as well as extensions
- Cross-platform support
- Stored procedures, using a procedural language that closely adheres to SQL/PSM
- Triggers
- Cursors
- Updatable views
- Online Data Definition Language (DDL) when using the InnoDB Storage Engine.
- Information schema
- Performance Schema that collects and aggregates statistics about server execution and query performance for monitoring purposes.

- A set of SQL Mode options to control runtime behaviour, including a strict mode to better adhere to SQL standards.
- X/Open XA distributed transaction processing (DTP) support; two phase commit as part of this, using the default InnoDB storage engine
- Transactions with savepoints when using the default InnoDB Storage Engine. The NDB Cluster Storage Engine also supports transactions.
- ACID compliance when using InnoDB and NDB Cluster Storage Engines
- SSL support
- Query caching
- Sub-SELECTs (i.e. nested SELECTs)
- Built-in replication support
 - Asynchronous replication: master-slave from one master to many slaves\or many masters to one slave
 - Semi synchronous replication: Master to slave replication where the master waits on replication\
 - Synchronous replication: Multi-master replication is provided in MySQL Cluster.\
 - Virtual Synchronous: Self managed groups of MySQL servers with multi master support can be done using: Galera Cluster or the built in Group Replication plugin
- Full-text indexing and searching
- Embedded database library
- Unicode support
- Partitioned tables with pruning of partitions in optimizer
- Shared-nothing clustering through MySQL Cluster
- Multiple storage engines, allowing one to choose the one that is most effective for each table in the application.
- Native storage engines InnoDB, MyISAM, Merge, Memory (heap), Federated, Archive, CSV, Blackhole, NDB Cluster.
- Commit grouping, gathering multiple transactions from multiple connections together to increase the number of commits per second.

The developers release minor updates of the MySQL Server approximately every two months. The sources can be obtained from MySQL's website or from MySQL's GitHub repository, both under the GPL license.

Limitations

When using some storage engines other than the default of InnoDB, MySQL does not comply with the full SQL standard for some of the implemented functionality, including foreign key references. Check constraints are parsed but ignored by all storage engines before MySQL version 8.0.15.

No triggers can be defined on views.

MySQL database's inbuilt functions like `UNIX_TIMESTAMP()` will return 0 after 03:14:07 UTC on 19 January 2038. Recently, there had been an attempt to solve the problem which had been assigned to the internal queue.

Deployment

MySQL can be built and installed manually from source code, but it is more commonly installed from a binary package unless special customizations are required. On most Linux distributions, the package management system can download and install MySQL with minimal effort, though further configuration is often required to adjust security and optimization settings.

LAMP software bundle, displayed here together with Squid.

It is still most commonly used in small to medium scale single-server deployments, either as a component in a LAMP-based web application or as a standalone database server. Much of MySQL's appeal originates in its relative simplicity and ease of use, which is enabled by an ecosystem of open source tools such as phpMyAdmin. In the medium range, MySQL can be scaled by deploying it on more powerful hardware, such as a multi-processor server with gigabytes of memory.

There are, however, limits to how far performance can scale on a single server ('scaling up'), so on larger scales, multi-server MySQL ('scaling out') deployments are required to provide improved performance and reliability. A typical high-end configuration can include a powerful master database which handles data write operations and is replicated to multiple slaves that handle all read operations.^[96] The master server continually pushes binlog events to connected slaves so in the event of failure a slave can be promoted to become the new master, minimizing downtime. Further improvements in performance can be achieved by caching the

results from database queries in memory using memcached, or breaking down a database into smaller chunks called shards which can be spread across a number of distributed server clusters.

3.3. ngrok

ngrok is a cross-platform application that enables developers to expose a local development server to the Internet with minimal effort. The software makes your locally-hosted web server appear to be hosted on a subdomain of ngrok.com, meaning that no public IP or domain name on the local machine is needed. Similar functionality can be achieved with Reverse SSH Tunneling, but this requires more setup as well as hosting of your own remote server. ngrok is able to bypass NAT Mapping and firewall restrictions by creating a long-lived TCP tunnel from a randomly generated subdomain on ngrok.com (e.g. 3gf892ks.ngrok.com) to the local machine. After specifying the port that your web server listens on, the ngrok client program initiates a secure connection to the ngrok server and then anyone can make requests to your local server with the unique ngrok tunnel address. The ngrok developer's guide contains more detailed information on how it works. Various tunnel servers are available around the world and locations include: US (Ohio), Europe (Frankfurt), Asia (Singapore), and Australia (Sydney). Alternatively, the ngrok server software can be self-hosted on a VPS or dedicated server. By default, ngrok creates both HTTP and HTTPS endpoints, making it useful for testing integrations with third-party services or APIs that require valid SSL/TLS domains. Other use cases include: quickly showcasing local demos to clients, testing mobile application backends, and running personal cloud services from your home PC. One praised feature of ngrok is the ability to track and replay HTTP requests via ngrok's web console . The replay functionality is highly useful when testing API calls or webhooks as one can easily inspect all header content and request/response data in one place via the console UI. A premium version of ngrok, ngrok link, is available for developers to use in production and offers features such as API automation and credential management, making it suitable for remote IoT management in a professional setting.

3.4. MapMyIndia

MapmyIndia offers Navigation, Tracking, IoT, Analytics and web mapping service for desktop and mobile devices. The company also offers advanced GPS tracking devices, car in-dash infotainment & plug & play on-board diagnostics car tracker. The navigation service features street view, public transit information and turn-by-turn navigation with spoken

instructions for vehicles. It later launched offline navigation app, Navimaps that uses offline vector data to offer 3D terrains and city models and 3D building for in-car infotainment systems

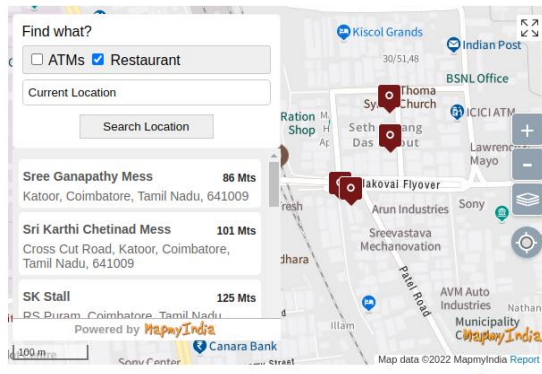


Fig. 3.4.1: MapMyIndia Nearby plugin

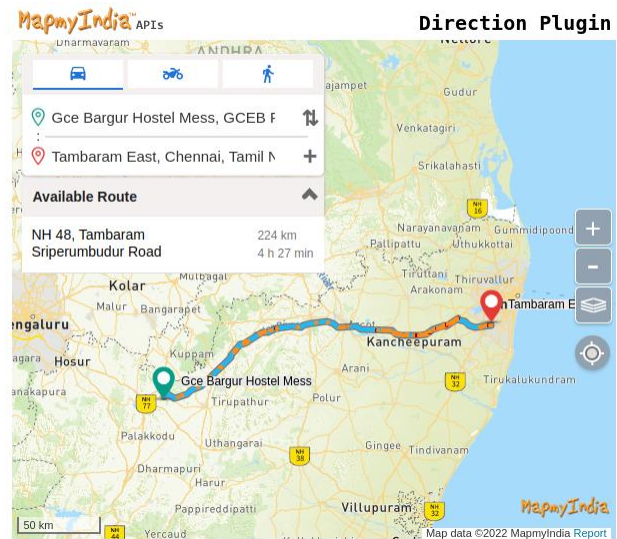


Fig. 3.4.2: MapMyIndia Direction Plugin

3.4.1. MapMyIndia Direction Plugin

This plugin, offered by MapmyIndia Places & Directions SDK for Web, uses integrated places searches for directions for several modes of transportation, including driving, biking and walking.

The plugin offers the following basic functionalities:

- Takes support of MapmyIndia Place search for searching locations of origin, destinations and via points.
- It allows to use origin and destinations in MapmyIndia's digital address (semicolon separated) eLoc or WGS 84 geographical coordinates both.
- The ability to set the vehicle profile like driving, and biking.
- Easily set the resource for traffic and ETA information.

3.4.2. MapMyIndia NearBy Search Plugin

A simple plugin / widget to search for nearby places powered by the best online maps from MapmyIndia. The Nearby Search plugin for MapmyIndia Web Map JS library is provided as a means to enable radially searching for Nearby Places on MapmyIndia Maps.

The plugin can be used in combination with our Interactive Map JS library but it also possesses the adaptability to be used as an independent plugin within any web app implementation. Thus it enables developers to include MapmyIndia Places SDK in their own customized solutions easily.

The SDK offers the following basic functionalities:

- Ability to search for nearby places directly with or without MapmyIndia Maps visual interface.
- A `MapmyIndia.nearby()` method to initiate nearby search across all categories of places available on MapmyIndia.
- Ability to get information from MapmyIndia Place Search plugin through a callback
- Include the Nearby Search Plugin with or without an interactive Map component

3.5. Discord

Discord is a VoIP and instant messaging social platform. Users have the ability to communicate with voice calls, video calls, text messaging, media and files in private chats or as part of communities called "servers". A server is a collection of persistent chat rooms and voice channels which can be accessed via invite links. Discord runs on Windows, macOS, Android, iOS, iPadOS, Linux, and in web browsers. As of 2021, the service has over 350 million registered users and over 150 million monthly active users.

3.5.1. Discord Server

Discord communities are organized into discrete collections of channels called servers. Although they are referred to as servers on the front end, they are called "guilds" in the developer documentation. Users can create servers for free, manage their public visibility, and create voice channels, text channels, and categories to sort the channels into. Any given server can have up to 800,000 members, as discovered when the official Discord server for the video game Genshin Impact reached maximum capacity, although Discord raised the capacity to over one million members for their Snowsgiving 2021 event, an official Discord-controlled server made for the 2021 winter holiday season. Starting October 2017, Discord allows game developers and publishers to verify their servers. Verified servers, like verified accounts on social media sites, have badges to mark them as official communities. A verified server is moderated by its developers' or publishers' own moderation team. Verification was later

extended in February 2018 to include esports teams and musical artists. By the end of 2017, about 450 servers were verified. Members can help servers obtain perks in three levels via the "Server Boost" feature, which unlocks higher quality voice channels, more emoji slots, and other perks. Users can buy boosts for servers for \$4.99 a month. "Discord Nitro" subscribers get two boosts included in the price of Nitro, and 30% off for additional boosts. In 2020, Discord unveiled a new feature, known as "Community servers". It includes such features like a custom welcome screen, server insights, and the ability to advertise on Discord's Server Discovery page.

We can create in discord that may be either used for voice chat and streaming or for instant messaging and file sharing. The visibility and access to channels can be customized to limit access for certain users; for example, marking a channel "NSFW" (Not Safe For Work) requires that first-time viewers confirm they are over 18 years old and willing to see such content. Text channels support some rich text using Markdown-like syntax, e.g. **text** to emphasize text, and `||text||` notation for inline spoilers. Code blocks with language-specific highlighting can also be used. There is also a nonstandard, Discord-specific `__text__` syntax that underlines the text. Discord launched Stage Channels in May 2021, a feature similar to Clubhouse which allows for live, moderated channels, for audio talks, discussions, and other uses, which can further be potentially gated to only invited or ticketed users. Initially, users could search for open Stage Channels relevant to their interests through a Stage Discovery tool, which was discontinued in October 2021. In August 2021, Discord launched Threads, which are temporary text channels that can be set to automatically disappear. This is meant to help foster more communication within servers. In September 2022, Discord launched Forum Channels, which gives the ability provide a space for organized discussions within a channel. Users can create multiple "posts" which work like Threads, organised in a forum-like manner.

3.5.2. Discord Webhook

Webhooks are a utility used to send messages to text channels without needing a Discord application. Webhooks are useful for allowing something to send messages without requiring a Discord application. You can also directly edit or delete messages you sent through the webhook. There are two structures to make use of this functionality: `Webhook` and `WebhookClient`. `WebhookClient` is an extended version of a `Webhook`, which allows you to send messages through it without needing a bot client.

Webhooks are a utility used to send messages to text channels without needing a Discord application. Webhooks are useful for allowing something to send messages without requiring a Discord application. You can also directly edit or delete messages you sent through the webhook. There are two structures to make use of this functionality: `Webhook` and `WebhookClient`. `WebhookClient` is an extended version of a `Webhook`, which allows you to send messages through it without needing a bot client.

Bots receive webhook messages in a text channel as usual. You can detect if a webhook sent the message by checking if the `Message.webhookId` is not null.

CHAPTER 4

4. Project - Database Schema

4.1. MySQL Ambulance alerting database Schema

User table:

User table has user_id, name, email_id, proffession, password column. It is used to authenticate the users and after authentication redirect to the specified page based on there profession.

Table Description:

Field	Type	Null	Key	Default	Extra
user_id	int	NO	PRI	NULL	auto_increme nt
name	varchar(20)	NO		NULL	
email_id	varchar(50)	NO	UNI	NULL	
proffession	varchar(3)	NO		NULL	
password	varchar(20)	NO		NULL	

Table 4.1: User Table Description

Example table:

user_id	name	email_id	proffession	password
1	sam	sam@gamil.com	trp	sam1234
2	adhi	adhi@gmail.com	amd	adhi1234
3	same	same@same.in	hpt	same1234
4	hello	hello@1234.com	hpt	hello1234
5	value	value@gmail.co m	hpt	value1234
6	Samuela	samuela@gmail.c om	hpt	samuela1234
7	Saem	saem@gmail.com	hpt	saem1234

Table 4.2: User Table Example

Traffic signal:

This table stores signal_id, from location, to location, signal location, traffic police name, road status, discord_name columns.

Table Description:

Field	Type	Null	Key	Default	Extra
signal_id	int	NO	PRI	NULL	auto_increment
f_rom	varchar(255)	NO		NULL	
t_o	varchar(255)	NO		NULL	
location	varchar(255)	NO		NULL	
name	varchar(60)	NO		NULL	
s_s_status	bit(1)	NO		NULL	
discord_name	varchar(100)	NO		NULL	

Table 4.3: Traffic signal table description

Table Example:

signal_id	f_rom	t_o	location	name	s_s_status	discord_name
1	tambaram	thiruvannur	tambaram	sam	0	vinotham#123
2	thiruvannur	t nagar	tambaram	sam	0	vinotham#123

Table 4.4: Traffic signal table example

Hospital table:

These table has hospital name, hospital location, availability of accepting the patient

Table description:

Field	Type	Null	Key	Default	Extra
h_id	int	NO	PRI	NULL	auto_increment

h_discord_name	varchar(100)	NO	Chapter 5:	NULL	
hospital_name	varchar(100)	NO		NULL	
accept_patient	int	NO		NULL	
location	varchar(200)	NO		NULL	

Table 4.5: Hospital table description

Table Example:

h_id	h_discord_name	hospital_name	accept_patient	location
1	dfaf	EWRds	0	ewrfafew
2	samuela#1234	yyy hospital	1	tambaram
3	saem#1234	yxyx Hospital	0	thiruvannur

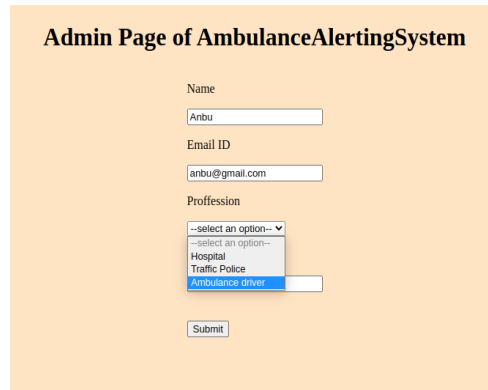
Table 4.6: Traffic signal table example

CHAPTER 5

5. User Guide

5.1. Register User

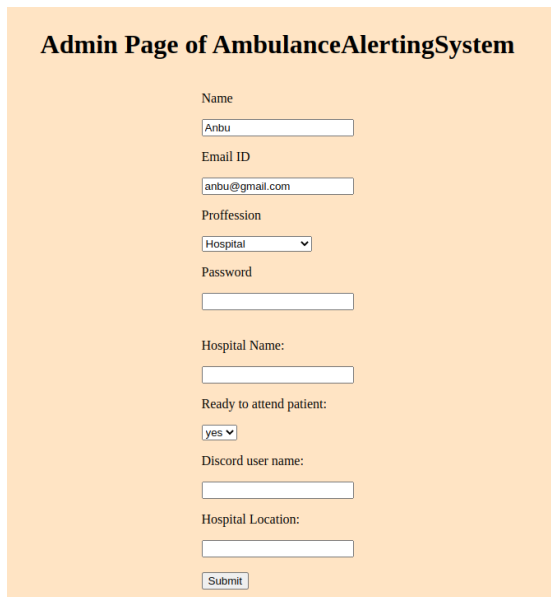
1. Only the admin can able to register the new user.
2. He/She needs to visit <domain>/admin page in the browser.



The image shows a web form titled "Admin Page of AmbulanceAlertingSystem". It contains the following fields: "Name" with the value "Anbu", "Email ID" with the value "anbu@gmail.com", and "Profession" with a dropdown menu showing options: "Hospital", "Traffic Police", and "Ambulance driver". The "Ambulance driver" option is currently selected. A "Submit" button is located at the bottom of the form.

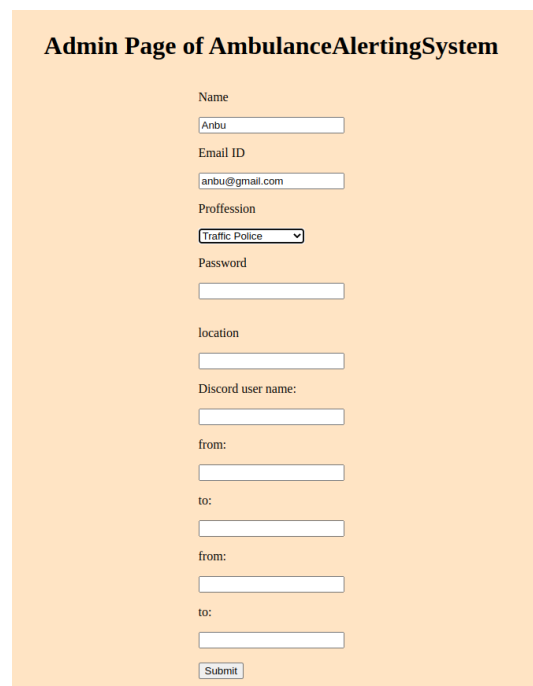
Fig. 5.1.1: User Registration page for Admin

3. The webpage shown above will be loaded.
4. Based on the profession selected it ask for the additional details



The image shows a web form titled "Admin Page of AmbulanceAlertingSystem". It contains the following fields: "Name" with the value "Anbu", "Email ID" with the value "anbu@gmail.com", "Profession" with a dropdown menu showing "Hospital" selected, "Password", "Hospital Name:", "Ready to attend patient:" with a dropdown menu showing "yes" selected, "Discord user name:", and "Hospital Location:". A "Submit" button is located at the bottom of the form.

Fig. 5.1.2: Register Page for Hospital



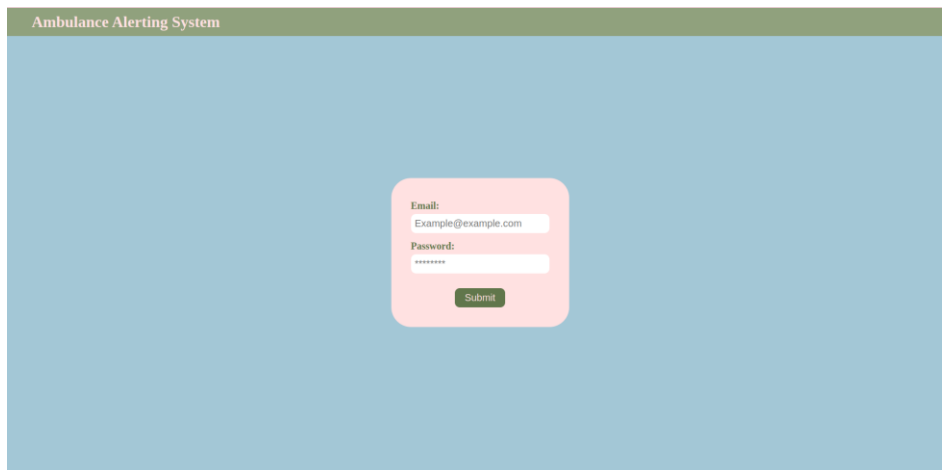
The image shows a web form titled "Admin Page of AmbulanceAlertingSystem". It contains the following fields: "Name" with the value "Anbu", "Email ID" with the value "anbu@gmail.com", "Profession" with a dropdown menu showing "Traffic Police" selected, "Password", "location", "Discord user name:", "from:", "to:", "from:", "to:", and "Submit" button.

Fig. 5.1.3: Register Page for Traffic Police

6. Admin need to fill these details and able to register the new user.

5.2. User Login

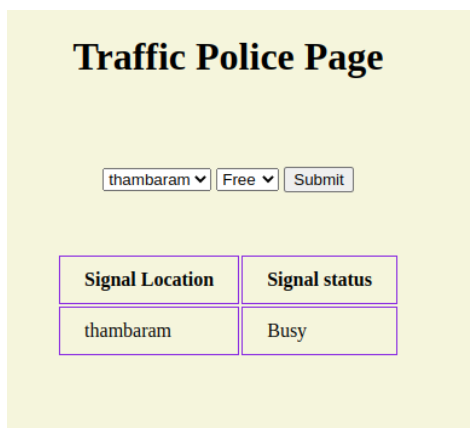
1. User need to visit `www. <domain>.com`. The below webpage will be loaded.



The login page features a light blue background with a dark green header bar at the top containing the text "Ambulance Alerting System". In the center, there is a light pink rounded rectangle containing a login form. The form has two input fields: "Email:" with the placeholder text "Example@example.com" and "Password:" with the placeholder text "password". Below these fields is a green "Submit" button.

Fig. 5.2.1: Login Page

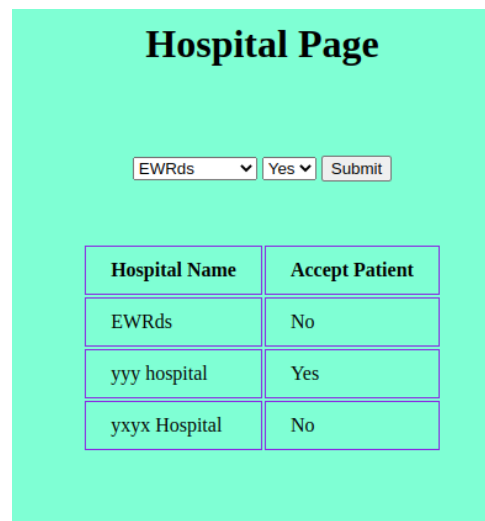
2. User need to enter their registered email id and password. It automatically takes the user to the respective home page.



The Traffic Police Page has a light yellow background. At the top, it has the title "Traffic Police Page". Below the title, there are two dropdown menus: "thambaram" and "Free", followed by a "Submit" button. At the bottom, there is a table with two columns: "Signal Location" and "Signal status".

Signal Location	Signal status
thambaram	Busy

Fig. 5.2.2: Traffic Police Page



The Hospital Page has a light green background. At the top, it has the title "Hospital Page". Below the title, there are two dropdown menus: "EWRds" and "Yes", followed by a "Submit" button. At the bottom, there is a table with two columns: "Hospital Name" and "Accept Patient".

Hospital Name	Accept Patient
EWRds	No
yyy hospital	Yes
yxyx Hospital	No

Fig. 5.2.3: Hospital Page

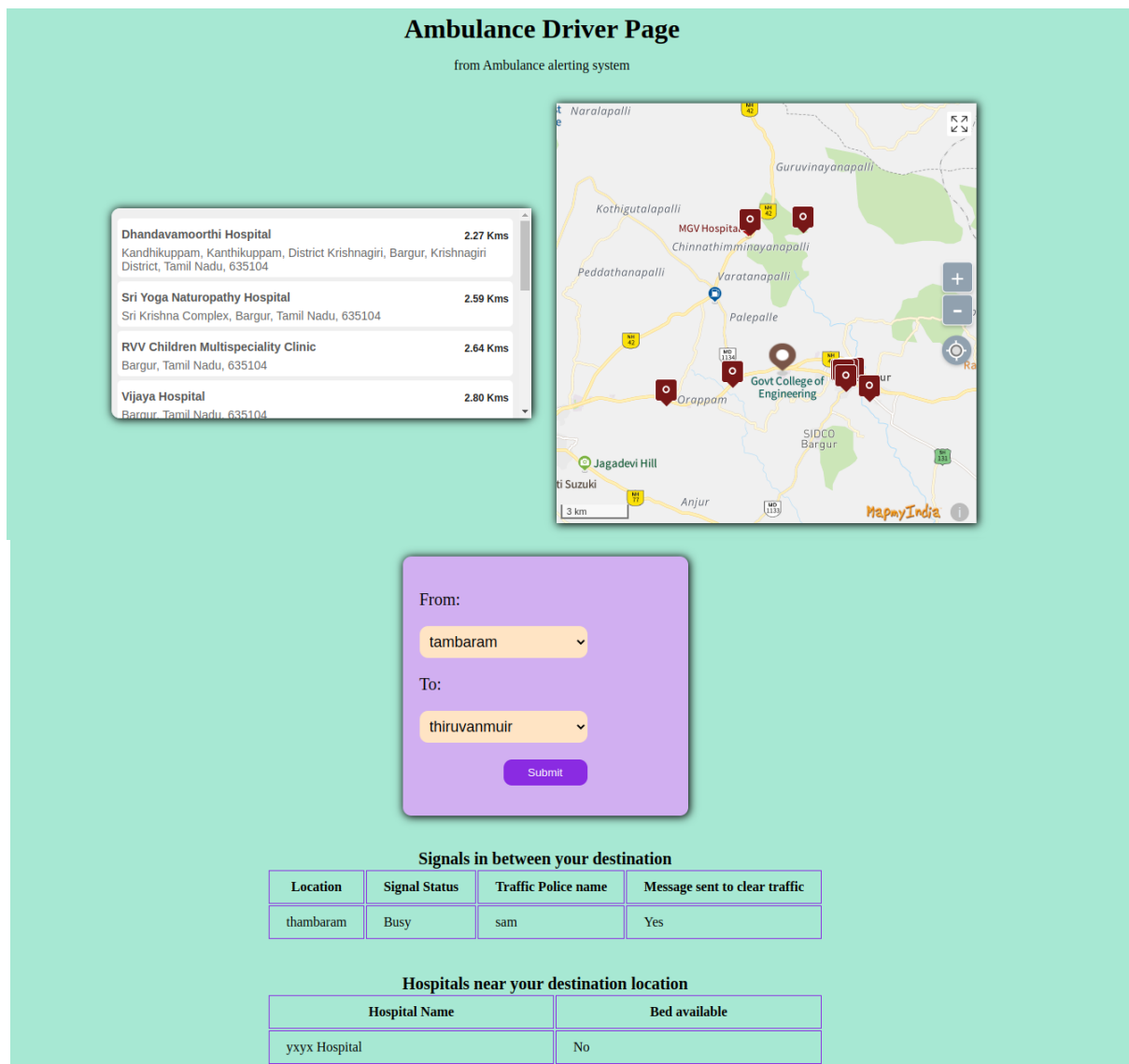


Fig. 5.2.4: Ambulance Driver Page

5.3. Ambulance driver page guide

1. When the user login in this page, it is programmed to automatically get the ambulance driver location and to list the nearby hospital. To do so it asks for the location permission. Click allow.

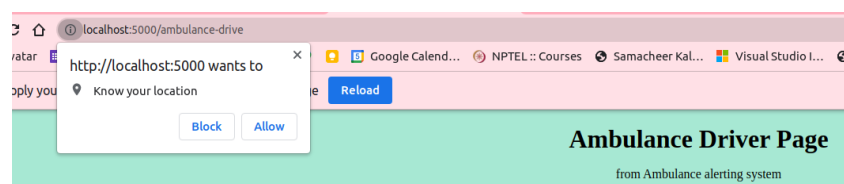


Fig. 5.3.1: Asking for location access

- Based on the location it shows the list of nearby hospitals as shown below. If you tap the location, it will show the direction

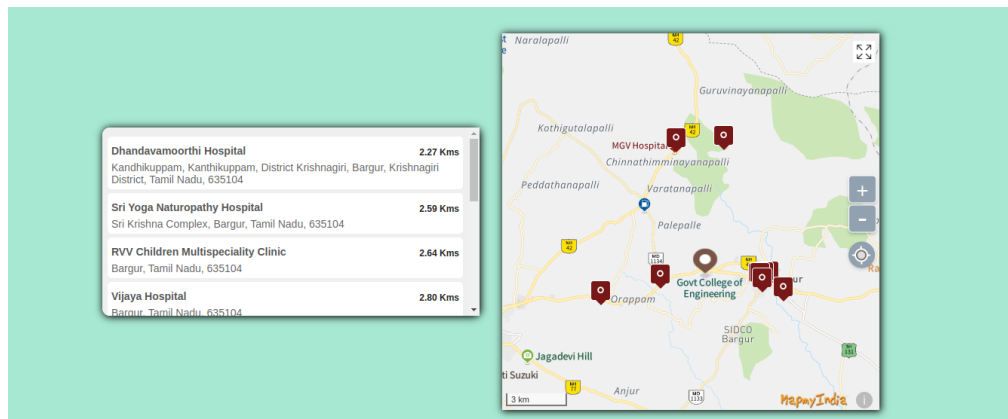


Fig. 5.3.2: Nearby Hospitals in the ambulance driver area

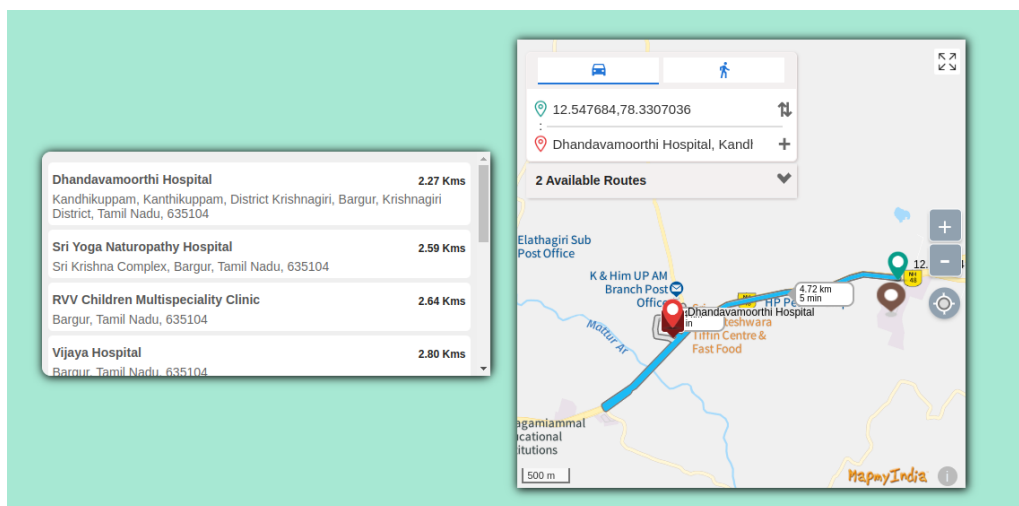


Fig. 5.3.3: Direction to Hospital

- To send the message to the traffic police regarding the coming of the ambulance, select the from and to location in the form shown below

The screenshot shows a form with two dropdown menus labeled 'From:' and 'To:'. The 'From:' dropdown is set to 'tambaram' and the 'To:' dropdown is set to 'thiruvannur'. A 'Submit' button is located at the bottom of the form.

Fig. 5.3.4: From-to form for ambulance driver

- Once you submit, it automatically sends the message to both hospital and traffic police as shown below in the discord channel.

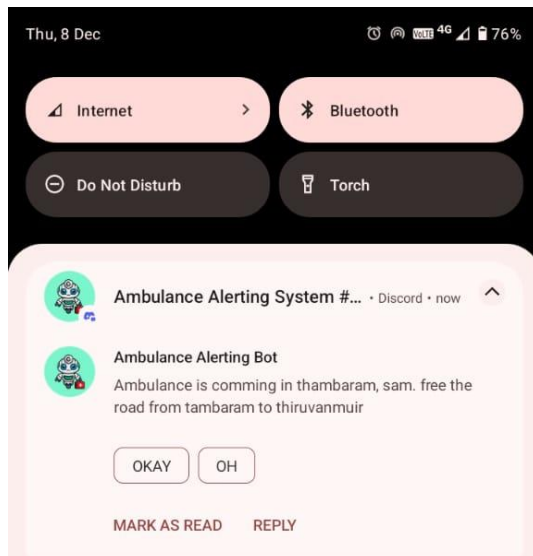


Fig. 5.3.6: Message to Traffic police

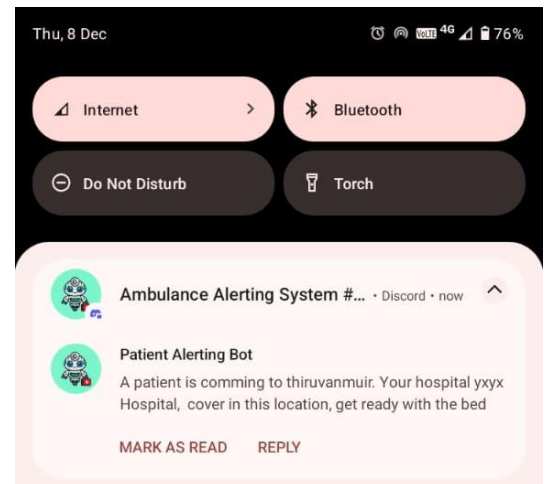


Fig. 5.3.5: Message to hospital

5. The webpage also whether the signal is busy or free, hospital is free or busy, traffic police name, etc... as shown below.

From:

tambaram

To:

thiruvannur

Submit

Signals in between your destination

Location	Signal Status	Traffic Police name	Message sent to clear traffic
tambaram	Busy	sam	Yes

Hospitals near your destination location

Hospital Name	Bed available
yxyx Hospital	No

Fig. 5.3.7: Show Road and hospital availability status

5.4. Traffic Police page guide

1. The role for the traffic police is simple. They can able to update whether their location signal is free or busy by submitting the below form.

Traffic Police Page

thambaram ▼ Free ▼ Submit

Signal Location	Signal status
thambaram	Busy

Ambulance Alerting System #... • Discord • now

⬆

Ambulance Alerting Bot
 Ambulance is comming in thambaram, sam. free the road from tambaram to thiruvanmuir

OKAY OH

MARK AS READ REPLY

Fig. 5.4.1: Traffic police page guide

2. If he/she receive any message from ambulance alerting system bot he/she need to clear the road mentioned in the message.

5.5. Hospital page user guide

1. They need to mention whether the hospital is available for patient to admit or not by using the below page.

Hospital Page

xyyx Hospital ▼ Yes ▼ Submit

Changed successfully

Hospital Name	Accept Patient
xyyx Hospital	Yes

Ambulance Alerting System #... • Discord • now

⬆

Patient Alerting Bot
 A patient is comming to thiruvanmuir. Your hospital yxyx Hospital, cover in this location, get ready with the bed

MARK AS READ REPLY

Fig. 5.5.1: Hospital page guide

2. They also get message regarding the patient.

CHAPTER 6

6. Result

1. The New record is successfully inserted to the database from the admin page as shown in the below.

Admin Page of AmbulanceAlertingSystem

Name

Email ID

Profession

Password

location

Discord user name:

from:

to:

from:

to:

localhost:5000/admin

Record added Successfully

```
mysql> select * from user;
```

user_id	name	email_id	profession	password
1	K:4r	oij4q3jr@aewifj.32984	hpt	hjasdfjklldskjf
2	sam	sam@gamil.com	trp	sam1234
3	adhi	adhi@gmail.com	amd	adhi1234
4	same	same@same.in	hpt	same1234
6	hello	hello1234	hpt	hello1234
7	value	value@gmail.com	hpt	value1234
8	vanakam	vanakam@12.21	hpt	hai
9	Samuela	samuela@gmail.com	hpt	samuela1234
10	Saem	saem@gmail.com	hpt	saem1234
11	Kumar	kumar@gmail.com	trp	kumar1234

10 rows in set (0.00 sec)

```
mysql> select * from trafficsignal;
```

sgnal_id	f_rom	t_o	location	name	s_s_status	discord_name
1	tambaram	thiruvannur	thambaram	sam	0x00	vinotham#123
2	thiruvannur	t nagar	thambaram	sam	0x00	vinotham#123
3	kandhanchavady	tidle park	guindy	Kumar	0x01	kumar#2314
4	t nagar	vellachery	guindy	Kumar	0x01	kumar#2314

4 rows in set (0.00 sec)

Fig. 5.5.1: Admin Page result

2. Message is sent to the discord and the required details are shown in the website for the ambulance driver page. Nearby hospital and direction of the hospital is shown in the website

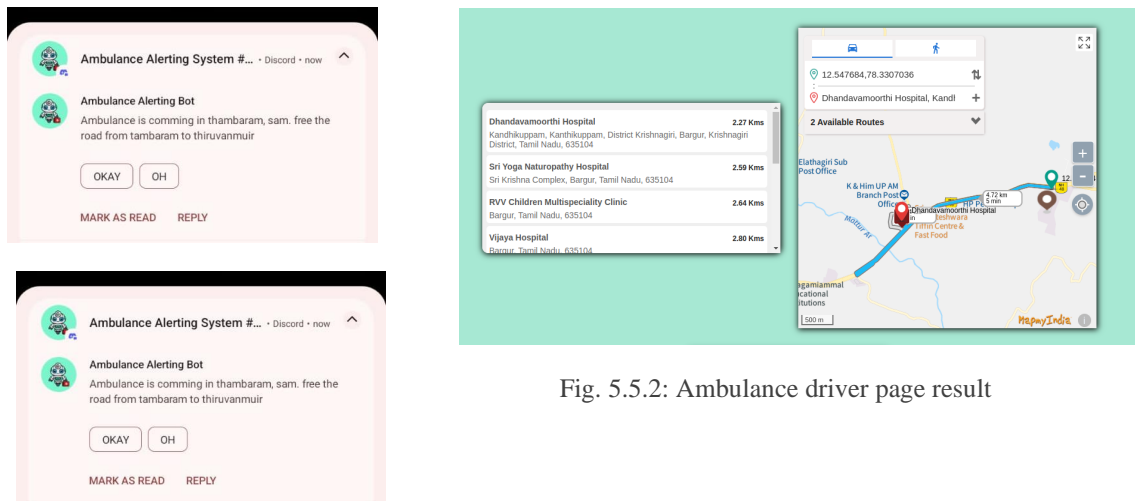


Fig. 5.5.2: Ambulance driver page result

Fig. 5.5.3: Message is sent to the traffic police and hospital

3. Hospital accepting patient column is changed as expected.



Fig. 5.5.4: Hospital Page

4. Traffic signal is status is change as expected.

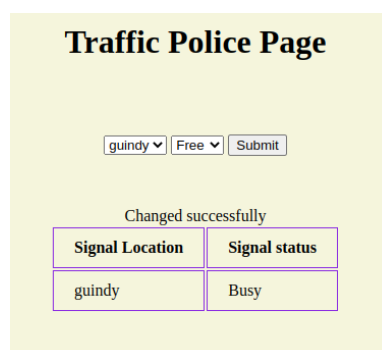


Fig. 5.5.5: Traffic police page result

CHAPTER 7

7. Limitation and Future Scope

7.1. Limitation

- The security of the website is less
- UI and UX of the website are not much attractive
- There is an amount of time need to be spent by the ambulance driver in the website, that need to be reduced.
- There is no app
- Limited location in database
- Only 20 attempts on the MapMyIndia website are reached at a day
- The website is not that much compact to phones
- More bugs

7.2. Future Scope

- The security of the website can be increased
- The website should be made compact for phones
- UI and UX of the website can be improved
- There is an amount of time need to be spent by the ambulance driver in the website, that need to be reduced by simple processes or automation
- App can be created
- Bugs should be created
- Can be improved to automatically control the traffic lights by the server based on the information taken from the ambulance driver

CHAPTER 8

8. Conclusion

The Ambulance alerting system is used to intimate the traffic police regarding the coming of the ambulance. So, he/she can able to clear the traffic on the road to give path to the ambulance. This makes ambulance can able to reach as early as possible. The system also able to send the information to the hospital to get ready to accept the patient. The hospital can able to update whether the hospital is fill or having vacancy, using this information ambulance driver can able to go to the right hospital. Traffic police can also able to update the information, whether the road is free or busy, using this information the ambulance driver can decide the best path to take the patient to the hospital.

Reference:

- [1] <https://medium.com/@bkshashi9/ambulance-stuck-in-traffic-scary-right-7b539ce518b9>
- [2] <https://frontendmasters.com/guides/front-end-handbook/2018/what-is-a-FD.html>
- [3] <https://github.com/MapmyIndia/mapmyindia-places-n-directions-web-sdk/tree/main/Directions-plugin>
- [4] <https://github.com/MapmyIndia/mapmyindia-places-n-directions-web-sdk/tree/main/nearbySearch-plugin>
- [5] <https://www.tutorialspoint.com/flask/index.htm>
- [6] https://www.w3schools.com/python/python_mysql_getstarted.asp
- [7] https://www.w3schools.com/html/html_css.asp