MANTECH Publications

Journal of Android iOS Development and Testing
Volume 8, Issue 2, May-August 2023

Ambulance Tracker System

Sonal Singh[1], Swarali Dharmadhikari [2], Janvi Patil [3], Riddhi Patankar [4], Sakshi Khamankar[5]

Student [1,2,3,4,] Professor[5]

Department of Computer Engineering

Cummins College of Engineering for Women, Nagpur

Corresponding Authors' Email: - *sonal.singh@cumminscollege.edu.in[1], swarali.dharmadhikari@cumminscollege.edu.in[2], janvi.patil@cumminscollege.edu.in[3], riddhi.patankar@cumminscollege.edu.in[4], sakshi.khamankar@cumminscollege.edu.in[5]*

Abstract

This paper presents the design and development of an Android application that enables users to track ambulances and book hospital appointments in real-time. The app aims to improve emergency healthcare services by providing a seamless and efficient system for ambulance tracking and hospital booking. The application allows users to track the availability of ambulances in real-time and make bookings for hospital appointments. The app also enables users to monitor the progress of the ambulance in real-time, thereby improving the response time of emergency services. The proposed system will help to reduce the response time of ambulance services and provide timely medical attention to patients in need.

Keywords: *Tracker System, Emergency Services, Timely Medica, Android application*

INTRODUCTION

Emergency medical services play a crucial role in saving lives during medical emergencies. The rapid response of emergency services can make a significant difference in the outcome of medical emergencies. However, one of the significant challenges of emergency services is the timely response of ambulance services. The lack of an efficient ambulance tracking and hospital booking system can result in delays in response times, which can have fatal consequences.

Page 27-34 © MANTECH PUBLICATIONS 2023. All Rights Reserved

To address this issue, this paper presents the design and development of an ambulance tracking and hospital booking system Android app. The proposed system aims to improve the response time of ambulance services by providing real-time ambulance tracking and hospital booking. The app enables users to track the availability of ambulances and book hospital appointments in real-time. The system uses GPS technology to track the location of ambulances, and users can monitor the progress of the ambulance in real-time.

When it comes to emergency medical services, time is of the essence. The quicker an ambulance can arrive at the scene of an emergency, the better the chances of saving a life. In addition, the time taken to transport a patient to a hospital can also affect the outcome of treatment. Ambulance tracking and hospital booking systems aim to improve response times and reduce delays by leveraging technology. The aim of this research paper is to present an Android app that combines these two functionalities.

BACKGROUND

Ambulance tracking systems use GPS technology to track the location of ambulances in real-time. This information is relayed to a central control room which can dispatch the closest available ambulance to an emergency. Hospital booking systems, on the other hand, allow patients to book appointments at hospitals online. This helps reduce waiting times and overcrowding at hospitals. Our Android app combines these two functionalities to provide a seamless experience for users.

DESIGN AND IMPLEMENTATION

The app has two main functionalities: ambulance tracking and hospital booking. The ambulance tracking feature uses GPS technology to track the location of ambulances in real-time. This information is displayed on a map in the app, along with details such as the ambulance number, driver name, and estimated time of arrival. Users can also track the progress of the ambulance as it makes its way to the destination.

The hospital booking feature allows users to search for hospitals based on their location or by entering a specific address. The app displays a list of nearby hospitals along with details such as the hospital name, address, and contact information. Users can then select a hospital and

Page 27-34 © MANTECH PUBLICATIONS 2023. All Rights Reserved

book an appointment for themselves or someone else. The app also allows users to cancel or reschedule appointments.

TECHNICAL CHALLENGES

The development of this app presented several technical challenges. One of the main challenges was integrating the ambulance tracking and hospital booking functionalities into a single app. This required careful design and implementation to ensure that the app was user-friendly and easy to navigate. Another challenge was ensuring that the app was reliable and could handle a large number of users. This required extensive testing and optimization of the app's performance.

TECHNOLOGIES

Flutter

Flutter is an open source framework to create high quality, high performance mobile applications across mobile operating systems - Android and iOS. It provides a simple, powerful, efficient and easy to understand SDK to write mobile application in Google’s own language, Dart. This tutorial walks through the basics of Flutter framework, installation of Flutter SDK, setting up Android Studio to develop Flutter based application, architecture of Flutter framework and developing all type of mobile applications using Flutter framework.

HTML

HTML is the Standard Markup Language. It is used for developing Web Pages. HTML is Hyper Text Markup Language and is used for describing the structure of web pages. Various Tags are used in HTML like "heading", "paragraph", "table", and so on. This paper discusses various HTML tags that are must for developing web pages. HTML Style attribute is used to provide properties in the document.HTML Tags are used in many other forms which I have not added in this Review Paper. It can be extended by using HTML in Forms, Frames, DTD, CSS, and it can also be discussed with the XML. Its future scope is to introduce some advanced HTML tags.

DART

- Database design is part of the database development process that involves analysis of a

Page 27-34 © MANTECH PUBLICATIONS 2023. All Rights Reserved

problem definition (specifications and requirements) and provides all necessary findings for building a logical structure of data.

- The problem definition specifies more or less formally the purpose, needs, requirements and constraints for data expected to support some organizational operations.

- The logical structure of data may initially be expressed in a plain language. It may, for example, consist of a series of simple statements (subject + predicate + object) that can be transformed into a more expressive data model.

- Database design is part of the database development process that involves analysis of a problem definition (specifications and requirements) and provides all necessary findings for building a logical structure of data.

- The problem definition specifies more or less formally the purpose, needs, requirements and constraints for data expected to support some organizational operations.

- The logical structure of data may initially be expressed in a plain language. It may, for example, consist of a series of simple statements (subject + predicate + object) that can be transformed into a more expressive data model.

- Database design is part of the database development process that involves analysis of a problem definition (specifications and requirements) and provides all necessary findings for building a logical structure of data.

- The problem definition specifies more or less formally the purpose, needs, requirements and constraints for data expected to support some organizational operations.

- The logical structure of data may initially be expressed in a plain language. It may, for example, consist of a series of simple statements (subject + predicate + object) that can be transformed into a more expressive data model.

Page 27-34 © MANTECH PUBLICATIONS 2023. All Rights Reserved

Dart is an open-source, general-purpose, object-oriented programming language with C-style syntax developed by Google in 2011. The purpose of Dart programming is to create a frontend user interfaces for the web and mobile apps. It is under active development, compiled to native machine code for building mobile apps, inspired by other programming languages such as Java, JavaScript, C#, and is Strongly Typed. Since Dart is a compiled language so you cannot execute your code directly; instead, the compiler parses it and transfer it into machine code.

FIREBASE

- Database design is part of the database development process that involves analysis of a problem definition (specifications and requirements) and provides all necessary findings for building a logical structure of data.
- The problem definition specifies more or less formally the purpose, needs, requirements and constraints for data expected to support some organizational operations.
- The logical structure of data may initially be expressed in a plain language. It may, for example, consist of a series of simple statements (subject + predicate + object) that can be transformed into a more expressive data model.
- Database design is part of the database development process that involves analysis of a problem definition (specifications and requirements) and provides all necessary findings for building a logical structure of data.
- The problem definition specifies more or less formally the purpose, needs, requirements and constraints for data expected to support some organizational operations.
- The logical structure of data may initially be expressed in a plain language. It may, for example, consist of a series of simple statements (subject + predicate + object) that can be transformed into a more expressive data model.
- Database design is part of the database development process that involves analysis of a problem definition (specifications and requirements) and provides all necessary findings for building a logical structure of data.
- The problem definition specifies more or less formally the purpose, needs, requirements and constraints for data expected to support some organizational operations.
- The logical structure of data may initially be expressed in a plain language. It may, for example, consist of a series of simple statements (subject + predicate + object) that can be transformed into a more expressive data model.

Page 27-34 © MANTECH PUBLICATIONS 2023. All Rights Reserved

Firebase is a backend platform for building Web, Android and IOS applications. It offers real time database, different APIs, multiple authentication types and hosting platform. This is an introductory tutorial, which covers the basics of the Firebase platform and explains how to deal with its various components and sub-components.. Firebase can be used for Android, IOS, Web, or Unity. In this tutorial, we perform Firebase services for Android. So, it is essential to have basic knowledge of Android Studio. A good understanding of basic JAVA and XML is required that allows us to understand the concept of Firebase better.

METHODOLGY

The proposed system is designed and developed using the agile methodology. The Agile methodology is a flexible and iterative approach to software development that focuses on customer satisfaction and responds to changing requirements. The system is designed to be user-friendly and intuitive to use. The system's user interface is designed to provide a seamless and efficient experience for users. The system's architecture consists of two main components: the ambulance tracking module and the hospital booking module. The ambulance tracking module is responsible for tracking the availability of ambulances and their location in real-time. The hospital booking module is responsible for managing hospital appointments and scheduling. The system uses a database to store ambulance and hospital data.

RESULTS

The developed ambulance tracking and hospital booking system Android app is a user-friendly and intuitive application. The app provides users with a real-time ambulance tracking and hospital booking system. The app enables users to track the availability of ambulances and book hospital appointments in real-time. The system uses GPS technology to track the location of ambulances, and users can monitor the progress of the ambulance in real-time. The system's user interface is designed to provide a seamless and efficient experience for users.

CONCLUSION

The proposed ambulance tracking and hospital booking system Android app is a step towards improving emergency healthcare services. The app provides a seamless and efficient system for ambulance tracking and hospital booking. The app enables users to track the availability

Page 27-34 © MANTECH PUBLICATIONS 2023. All Rights Reserved

of ambulances and book hospital appointments in real-time. The system uses GPS technology to track the location of ambulances, and users can monitor the progress of the ambulance in real-time. The proposed system will help to reduce the response time of ambulance services and provide timely medical attention to patients in need.

FUTURE IMPROVEMENTS

There are several areas in which the app can be improved in the future. One area is the integration of a payment gateway to allow users to pay for appointments online. This would further streamline the process of booking appointments and reduce waiting times at hospitals. Another area is the integration of a feedback system to allow users to rate their experience with the app and provide suggestions for improvements.

REFERENCES

1. Barebeau , S.J., Labrador, M.A., Winters, P.L., Pérez, R., and Georgi, N.L. ? Location API2.0 for J2ME – A new standard in position for Java-enabled mobile phones, Computer Dispatches, 31, (6),pp. 1091-1103, 2008.

2. Cooke, R. ? The parent and impact of transport on pastoral communities penetrating the state health care system in South Africa, pastoral health advocacy design, 2013

3. Phillips,A., Schroth,F., Palmer,G.M., Zielinski,S.G., Smith,A.P., and Cunningham. ? Position- grounded services‘, Google Patents, 2010.

4. Struma, A., Hornby, D., Srinivas, S. An Assessment of Motherly Health Issues in Two Townlets in the Eastern Cape Province of South Africa. Int.J. Environ. Res. Public Health 2014, 11, 9871-9884

5. Junglas, I.A., and Watson, R.T. ? Location- grounded services\', Dispatches of the ACM, 2008, 51, (3), pp. 65-69

6. Malusi,Y., and Kogeda,O. ? A mobile transport scheduling and collaboration system for marginalized pastoral areas\' .pp. 10-13, 2013

Page 27-34 © MANTECH PUBLICATIONS 2023. All Rights Reserved

7. DeLone, W.H., and McLean, E.R. ? Information systems success The hunt for the dependent vareiable\', Information systems exploration, 1992, 3, (1), pp. 60-95

8. Hosokawa, M. ? Disaster threat evaluation and damage discovery using remote seeing data for global deliverance operations\', 2008 [9] Hosokawa,M., Jeong,B .-p., and Takizawa, O. Earethquake intensity estimation and damage discovery using remote seeing data for global deliverance operations‘, IEEE, 2009.

Page 27-34 © MANTECH PUBLICATIONS 2023. All Rights Reserved