Cloud-Based Emergency Response System

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Abstract—In our rapidly advancing technological landscape, the Cloud-Based Emergency Response System with QR Code Integration emerges as a groundbreaking initiative at the inter- section of technology and emergency management. This project addresses the critical need for swift and efficient access to vital individual information during emergencies, especially in the context of road incidents. Traditional emergency response systems often encounter challenges in the rapid retrieval and dissemination of essential data, prompting the need for a trans- formative solution. At its essence, the project aims to redefine the paradigm of information accessibility during emergencies, offering a comprehensive platform that leverages cloud computing, secure authentication methods, and QR code technology. The primary goal is to enhance the efficiency of emergency response procedures by providing a seamless and secure mechanism for users to input and store their critical information. This, in turn, enables emergency responders and authorized individuals to access this information rapidly and effectively.

Keywords — ***Emergency response, Cloud computing, Secure authentication methods, QR code integration***

I. INTRODUCTION

In today's fast-paced world, the safety and well-being of individuals during emergencies are of paramount importance. Accidents on the road, in particular, demand swift and efficient response mechanisms to mitigate potential harm and provide necessary assistance. The "Cloud-Based Emergency Response System with QR Code Integration" aims to address this critical need by leveraging modern technologies to streamline the retrieval of vital information in emergency situations. The proposed system envisions a user-centric approach, allowing individuals to securely store their crucial medical, contact, and identification information. To facilitate seamless access to this information during emergencies, each user is provided with a unique Quick Response (QR) code. This QR code, securely encrypted with essential user data, is affixed to the user's vehicle. Key technologies employed in this system include serverless computing, serverless databases, QR encryption and decryption, and Google OAuth for secure user authentication. These technologies synergistically facilitate a streamlined, secure, and efficient emergency response system, safeguarding lives and ensuring timely and appropriate aid during critical moments.

II. PROPOSED WORK

We aim to create a web based application which can be accessible to everyone who uses the internet. The user will have to login using their google account in order to fill in their medical information. The information will be securely stored in the database for easy access and a QR code will be generated for the user to download and stick to their vehicle so whenever a tragedy occurs, the victims medical information will be easily available via scanning the QR code. The user will also be able to edit/update their medical information. The medical information we'll be asking for users to enter will consist of their blood type, any allergies they've, if they are diabetic or not, any type of infection they've and other minor information like high blood pressure problems or any additional information users want to link with their QR code. We also respect the privacy of users as medical history is a very crucial information for anyone. When the QR is scanned by someone we'll ask them to login with google for being able to access the medical information linked with the QR code. And once they login to access the information, we'll send an email to the information owner's email account. The mail will have the person's name who accessed their QR information. This way the owner will be aware of the people who saw their QR linked medical information.

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III. ARCHITECTURAL DIAGRAM

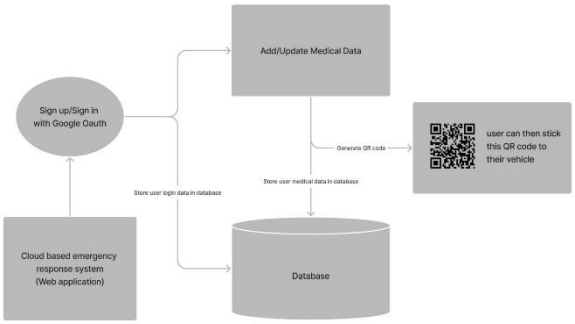

Fig 1. ARCHITECTURAL DIAGRAM (a)

When an unauthorized user accesses the web application, they will be prompted to sign in using their Google account credentials. Upon signing in, they will be automatically redirected to the medical data filling form.

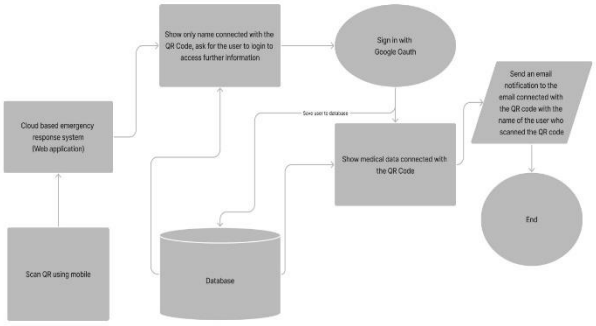

Fig. 2. ARCHITECTURAL DIAGRAM (b)

Upon scanning the QR code, individuals will be directed to the web application, where they can access the medical data linked to the QR code. Prior to this access, users will be prompted to log in. Once logged in, they will be able to view the QR data, and simultaneously, an email notification will be sent to the user whose QR data has been accessed.

IV. RESULT

The proposed system provides a web-based platform for users to securely store and access their medical information. Users would log in using their Google account to input their data, which would include details such as blood type, allergies, diabetic status, infections, and other health information. This information would be stored in a database and accessible via a QR code that users can affix to their vehicles for emergency situations. Privacy is maintained by requiring users to log in with Google credentials to access the information linked to the QR code, and email notifications are sent to the owner whenever their medical data is accessed. This system provides a convenient and secure way for individuals to share critical medical information while respecting their privacy.

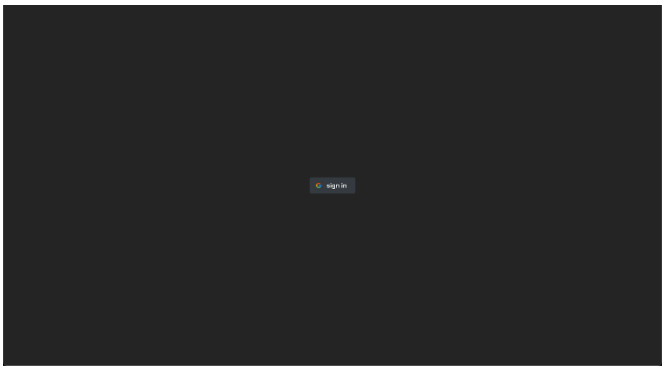

Fig 3 Sign in page

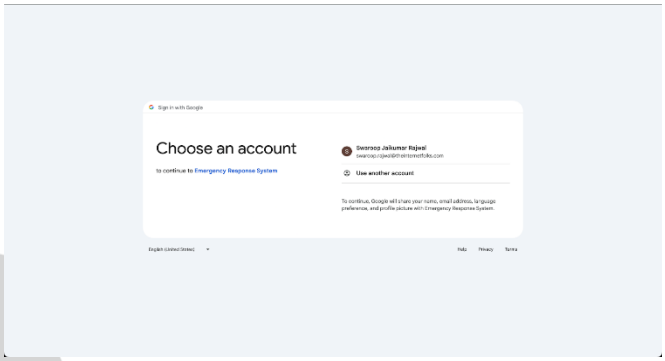

Fig 4 Google consent screen

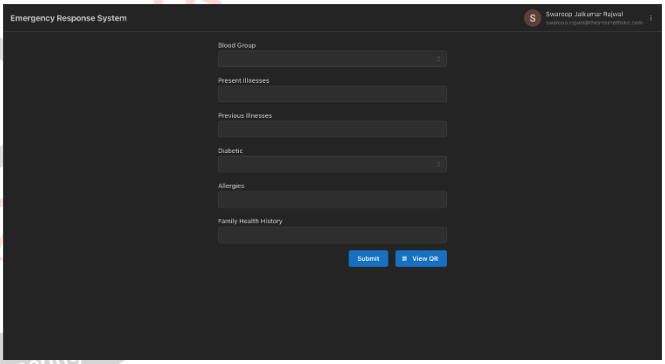

Fig 5 Post login screen to fill in the medical information

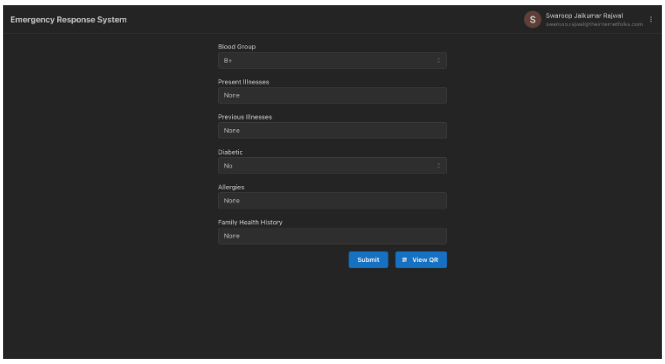

Fig 6 Fill the medical data

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Fig 7 QR code is generated whenever any user clicks the "View QR" button

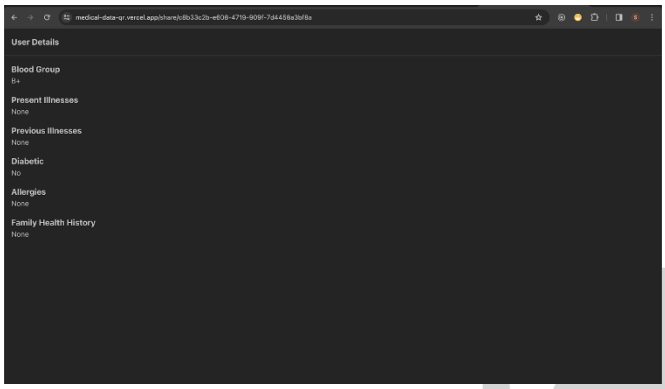

Fig 8 Final Output

V. CONCLUSION

Cloud-Based Emergency Response System with QR Code Integration offers a user-centric solution for swift and secure access to vital medical information during emergencies. Users log in with their Google account to input and manage their data, generating a QR code for quick access. The system ensures privacy, employs advanced technologies, and notifies users via email when their QR code is scanned, enhancing accountability and overall emergency response effectiveness.

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