

# ResQr: Scan. Save. Support – QR Based Emergency Assistance System

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*Abstract* — ResQr is a simple and useful system designed to help people during emergencies by using QR code technology. In many situations like accidents or sudden health problems, a person may not be able to share their identity or medical details. This can delay proper help and treatment. The ResQr system solves this problem by storing important information such as name, blood group, medical conditions, and emergency contact numbers in a secure database. Each user gets a unique QR code that can be printed or saved on their phone. In an emergency, anyone can scan this QR code using a smartphone to quickly view the person's details and contact their family or doctors. The system also allows quick actions like calling emergency contacts. This solution is easy to use, low-cost, and helps in saving time during critical situations. It can improve emergency response and increase the chances of saving lives.

**Keywords:** QR Code, Emergency Assistance, Mobile Application, Healthcare System, Cloud Database, Personal Safety, Quick Response System, Digital Identity, Emergency Contact, Smart Safety System

## I. INTRODUCTION

In today's fast-moving world, accidents and medical emergencies can happen anytime and anywhere. In such situations, providing quick and correct help is very important. However, many times the affected person is unable to communicate their identity, medical history, or emergency contact details. This delay can lead to serious risks and may reduce the chances of proper treatment.

Traditional methods such as identity cards or medical reports are not always reliable, as they may not be available during emergencies. Therefore, there is a need for a smart and simple system that can provide important information instantly.

ResQr is a QR code-based emergency assistance system designed to solve this problem. It allows users to store their personal and medical details in a digital format. A unique QR code is generated for each user, which can be printed or saved on a mobile device. During an emergency, anyone can scan this QR code using a smartphone to quickly access the stored information.

This system helps in reducing response time and enables faster communication with family members or medical professionals. It is easy to use, cost-effective, and can be widely adopted. The main goal of ResQr is to improve emergency response and help save lives through quick access to essential information.

## II. SYSTEM OVERVIEW

The ResQr system is designed to provide quick access to important personal and medical information during emergency situations using QR code technology. The system

mainly consists of three parts: user registration, QR code generation, and emergency data access.

In the first step, users register their details through a mobile or web application. The information includes name, blood group, medical conditions, allergies, and emergency contact numbers. This data is securely stored in a cloud database.

After successful registration, the system generates a unique QR code for each user. This QR code acts as a digital identity and can be printed on an ID card, sticker, keychain, helmet or saved on the user's mobile phone.

In case of an emergency, any person can scan the QR code using a smartphone. Once scanned, the system retrieves the stored information from the database and displays it instantly on the screen. The interface also provides quick actions such as calling emergency contacts.

Overall, the ResQr system is simple, fast, and effective. It ensures that important information is easily available when needed, helping to reduce response time and improve emergency support.

## III. METHODOLOGY

The ResQr system follows a step-by-step process to provide quick and reliable assistance during emergency situations. The working of the system is explained as follows:

### A. User Registration:

The user first registers in the system using a mobile or web application. The user enters important details such as name, blood group, medical conditions, allergies, and emergency contact numbers.

### B. Data Storage:

The entered information is securely stored in a cloud-based database. This ensures that the data can be accessed anytime and from anywhere when required.

### C. QR Code Generation:

After successful registration, the system generates a unique QR code for each user. This QR code is linked to the user's stored information. The user can download or print the QR code for daily use.

### D. QR Code Scanning:

In case of an emergency, any person can scan the QR code using a smartphone camera or QR scanner application.

### E. Data Retrieval:

Once the QR code is scanned, the system fetches the user's information from the database and displays it instantly on the screen.

F. Emergency Actions:

The system provides quick options such as calling emergency contacts or viewing important medical details, helping in faster response and support.

This methodology ensures that the system works efficiently and provides immediate access to critical information, reducing delays during emergencies.

IV. BLOCK DIAGRAM AND EXPLANATION

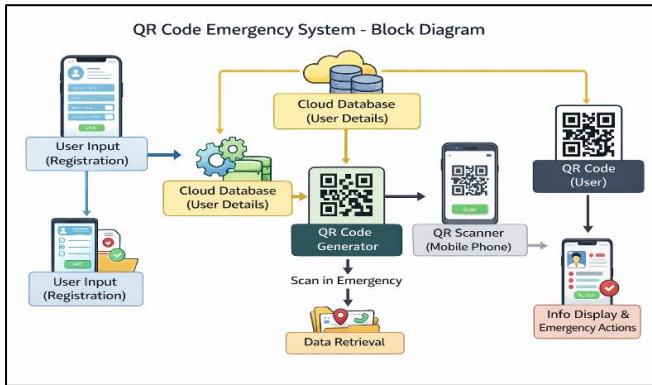


Fig. 1: Block Diagram

The block diagram of the ResQr system shows the overall working process of the emergency assistance system using QR code technology. It explains how user data is stored, processed, and accessed during emergency situations.

The process begins with the user registration module, where the user enters important details such as name, blood group, medical history, and emergency contact numbers through a mobile or web application.

This information is then stored in a cloud database, which ensures that the data is secure and can be accessed anytime through the internet.

After storing the data, the system generates a unique QR code for each user. This QR code acts as a digital identity and is linked to the user’s stored information. The user can print this QR code or save it on their mobile device.

In case of an emergency, the QR code is scanned using a smartphone QR scanner. Once scanned, the system sends a request to the cloud database to fetch the stored information.

The data retrieval module processes this request and sends the required information back to the user interface.

Finally, the system displays the user’s details such as personal information, medical conditions, and emergency contacts. It also provides quick actions like calling emergency contacts or sharing location.

Thus, the block diagram clearly represents how the ResQr system enables fast and efficient access to critical information, helping in quicker response during emergencies.

V. RESULTS AND DISCUSSION

A. Result:

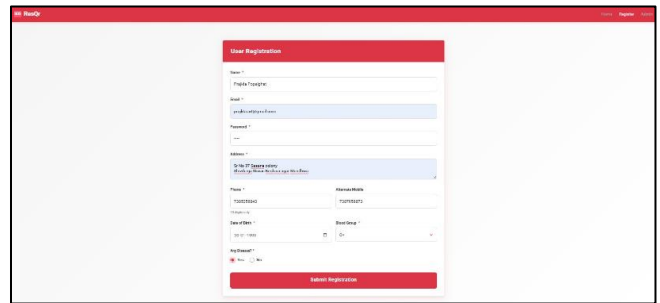


Fig. 2: User Registration Form

This figure shows the user registration interface where personal and medical details are entered. It demonstrates how the system collects essential information from the user.

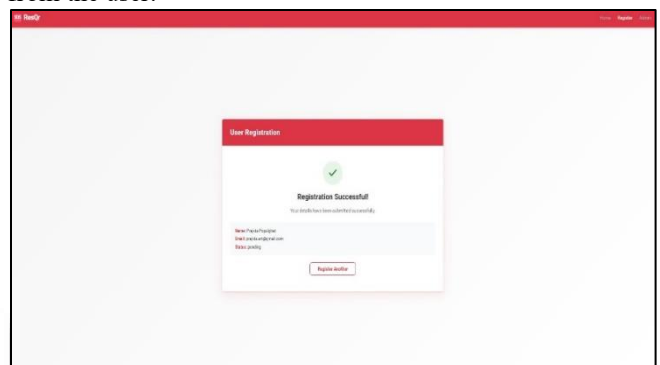


Fig. 3: Registration Successful

This figure shows that the user details have been successfully submitted. It confirms that the data is stored in the system and the registration process is completed.

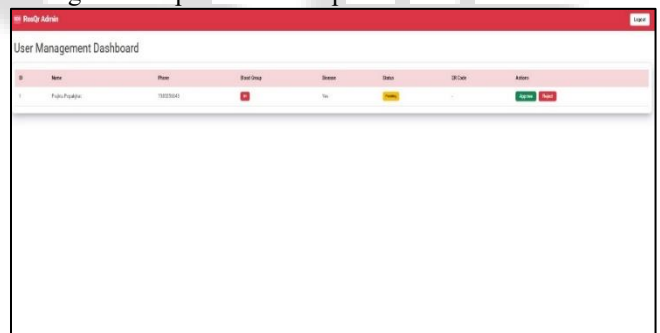


Fig. 4: Admin Dashboard (Pending Status)

This figure displays the admin dashboard where newly registered users appear with a “pending” status. It shows that the system sends user data for verification.

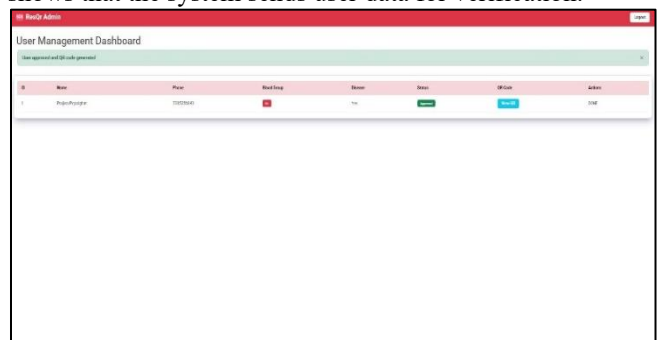


Fig. 5: Admin Approval (Approved Status)

This figure shows that the admin has approved the user. After approval, the system processes the data and prepares for QR code generation.



Fig. 6: QR Code Generated

This figure shows the unique QR code generated for the user. It represents the core functionality of the system, linking the QR code with user information.

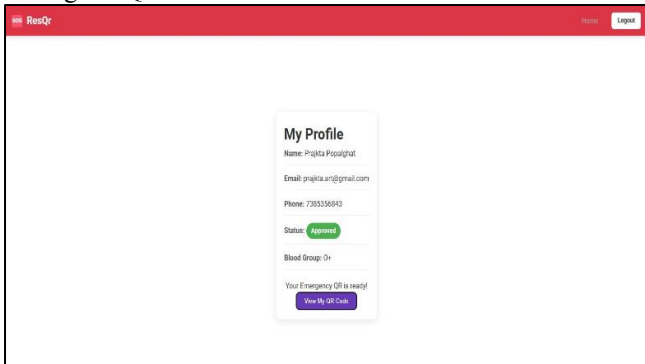


Fig. 7: Final User Profile

This figure displays the user profile after approval. It confirms that the QR code is ready and the system is fully functional for emergency use.

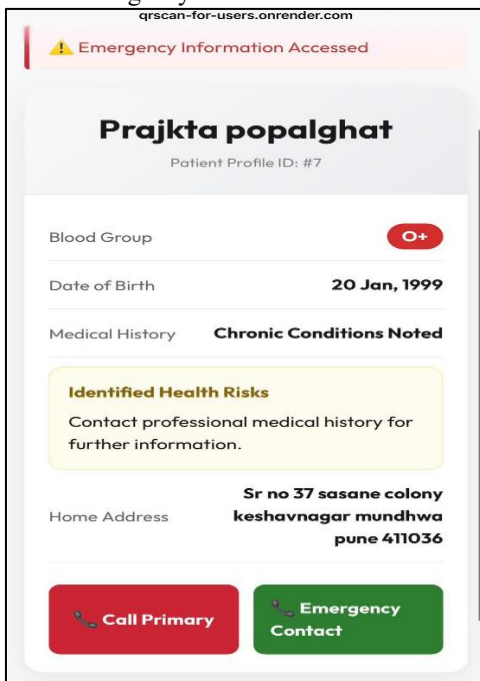


Fig. 8: Emergency Information Display After QR Scan

This figure shows the user details displayed after scanning the QR code. It includes personal and medical information along with emergency contact options for quick help.

## VI. ADVANTAGES

- Quick access to emergency information
- Saves time during emergencies
- Easy to use
- Low cost system
- Improves response speed
- Portable and convenient
- Works on any smartphone

## VII. LIMITATIONS

- Requires internet connection
- Data privacy and security concerns
- Depends on QR code availability
- Needs user registration in advance
- Not useful if QR code is damaged or lost

## VIII. FUTURE SCOPE

Integration with hospitals and ambulance services  
Addition of GPS tracking and live location sharing  
Use of AI for automatic emergency detection  
Offline access to basic information  
Integration with wearable devices (smart bands)  
Government emergency system connectivity

## IX. CONCLUSION

ResQr is an effective and practical system designed to improve emergency response using QR code technology. It allows quick access to important personal and medical information during critical situations, where time plays a vital role. By simply scanning a QR code, necessary details and emergency contacts can be accessed instantly.

The system is easy to use, low-cost, and can be widely adopted by the public. It helps reduce delays in providing help and supports faster decision-making during emergencies. Overall, ResQr has the potential to save lives by ensuring timely access to essential information and improving the efficiency of emergency services.

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