QR Code Based Accident Notification System

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Abstract: **QR for Accident is an innovative communication platform that facilitates efficient and secure interaction between vehicle owners and the broader community. By leveraging QR decal tags as unique identity markers, the platform ensures seamless communication channels among concerned parties. Its multifaceted approach includes various functionalities like individual vehicle tagging, residents' parking tags, and comprehensive management of parking facilities, all geared towards optimizing parking operations and bolstering community safety measures. The platform serves as a responsive solution during critical situations, effectively tackling a spectrum of issues, from wrongful parking and road obstructions to abandoned vehicles, hit-and-run incidents, and potential security threats. By enabling swift and reliable communication pathways, QR for Accident empowers users to quick report and respond to these scenarios, nurturing a culture of collective vigilance and community responsibility. The platform's proactive communication approach, swift responsiveness**

Keywords: **QR code, Parking tags, Accident, Hit and run incidents, Security Threats, Spectrum of issues, Reliable communication pathways.**

I. INTRODUCTION

A QR Code-Based Accident Notification System leverages modern technologies to address critical challenges in emergency response and accident management. These systems are designed to provide quick, reliable, and accurate information about accidents to relevant stakeholders, such as emergency responders, hospitals, or family members, minimizing delays and potentially saving lives In this context, the QR Code-Based Accident Notification System emerges as an innovative solution that leverages the simplicity and versatility of QR code technology. QR codes are widely recognized for their ability to store and transmit data efficiently, making them ideal for applications requiring quick and reliable information sharing. By integrating QR codes into accident management systems, it is possible to create a robust framework that automates emergency notifications and facilitates rapid, informed responses.

1.1 PROBLEM STATEMENT

"A QR code-based accident notification system enables quick access to a victim's critical information and automates emergency alerts, ensuring faster response times and improved accident management" Road accidents are a significant global concern, resulting in countless fatalities, injuries, and damages every year. Timely assistance to accident victims often determines the difference between life and death, yet delays in communication and identification of victims hinder rapid emergency response. A QR code-based accident notification system seeks to address this issue by providing a quick, reliable, and accessible means of alerting emergency responders and notifying key contacts. By integrating QR codes with critical personal and medical information, this system can enable first responders and bystanders to scan the code at the accident scene, instantly accessing essential details and triggering automated notifications to emergency services and family members. This approach aims to reduce response times, enhance victim care, and improve overall accident management.

1.2 OBJECTIVES

- By facilitating the seamless sharing of accurate and comprehensive information, including medical history, emergency contacts, and GPS location, the system enables responders to make informed decisions and provide timely and appropriate care.
- It is designed to be cost-effective, scalable, and accessible, making it suitable for various settings, including urban and rural areas, and diverse applications such as road safety, industrial safety, and personal emergency preparedness.

II. PROPOSED SYSTEM

- The QR code for Accident we are generating a unique quick response code which contains information about drivers and information regards vehicle. We are coming up with this innovative solution an emergency response assistance product, where the bystanders can just scan the accident victim vehicle's QR and can report the accident to the family person of the victim through call.
- The call will be connected over a with OTP verification, thus keeping the privacy of both the informer and the victims' family person. At the moment of this accident report call, system takes the location input, and their backend call center team informs the nearby hospitals and police station, keeping the information private.
- QR for Accident enables vehicle owners to register with system data base and add their personal information including blood group, vehicle insurance, medical insurance, and family emergency details.
- All this information is secured and encrypted and be visible only to the family emergency contact through SMS OTP verification in case of an accident intimation call or to the registered vehicle owner as a part of their Pro QR for Accident profile.
- This system helps vehicle owners to get a notification in case of unattended vehicle scenarios including wrong parking, unauthorized parking, and vehicle-related issues (fuel leak, windows open, keys left), wherein the bystander/ traffic police can inform vehicle owners about any of the above scenarios through Call/SMS by scanning QR sticker on vehicle with a basic scanner from their mobile phones.

III. METHODOLOGY

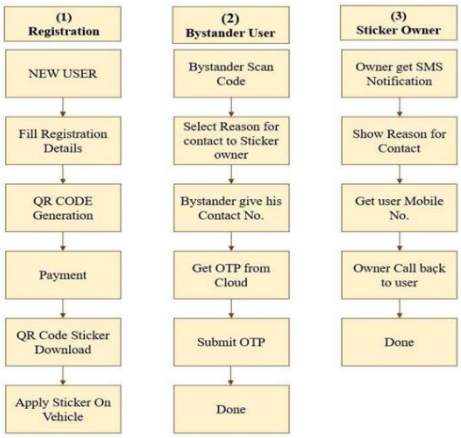
1. QR Code Generation:
 - Users register on a mobile app or web portal. Enter relevant details (personal, vehicle, and medical).
 - Generate a unique QR code, which can be printed and displayed on the vehicle or carried by individuals.

2. QR Code Usage:
 - In case of an accident, bystanders or the victim can scan the QR code using a smartphone.
 - Scanning the QR code retrieves and displays critical information.

3. Automated Notification:
 - Upon scanning, the system sends automated alerts to emergency contacts, nearby hospitals, and law enforcement.
- SMS or push notifications include GPS location, accident severity, and medical details.

4. Emergency Response:
 - Emergency services use the data to respond effectively.
- Family and insurance providers are also notified.

IV. SYSTEM ARCHITETURE



IV. ADVANTAGES

- Efficient Communication: The system facilitates swift and direct communication between concerned parties, enabling prompt resolution of various vehicle-related issues.
- Enhanced Safety Measures: By promptly notifying vehicle owners and relevant contacts in emergencies, the platform contributes to ensuring timely assistance and preventive measures, enhancing overall safety.
- Streamlined Parking Management: With features like individual vehicle tagging and managed parking facilities, the platform optimizes parking operations, reducing Instances of improper parking and road obstructions.
- Community Engagement: By fostering a culture of shared responsibility and proactive communication, the system encourages active community participation in maintaining a secure environment.

V. CONCLUSION

In conclusion, the implementation of the Accident QR Pro communication platform stands as a ground - breaking solution to the persistent challenges within the vehicular ecosystem. By bridging the gap in

communication and fostering a culture of shared responsibility, the platform not only streamlines the management of safety concerns but also cultivates a more secure and harmonious community environment. Its user-centric approach and proactive alert system establish Accident QR Pro as a pivotal tool in promoting efficient communication, enhancing community engagement, and prioritizing the safety and well-being of all stakeholders involved. With its multifaceted functionalities and emphasis on swift responsiveness, Accident QR Pro serves as a transformative force in redefining the dynamics of modern vehicle management and community interaction.

VI. REFERENCES

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