

CITYLERT- A Web-Based Platform for Post-Disaster

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Abstract—“CityLert” is a web-based platform designed to enhance post-disaster management by providing critical information and support during post-disaster scenarios. It allows users to access data about affected areas, resource availability, safety measures, recovery guidelines.

I. Introduction

Disasters often leave communities in chaos, with limited access to critical information and resources. Effective post-disaster management is essential to ensure the safety and recovery of affected populations. Traditional methods often suffer from delays in information dissemination and inefficient coordination. The CityLert system addresses these challenges by providing detailed information about disasters in specific locations, enabling informed decisions and necessary arrangements. CityLert aims to serve as a centralized system where users can access critical data such as affected areas, resource availability, safety measures, and recovery guidelines, along with real-time updates,

disaster history, and community collaboration features.

Keywords: post-disaster management, information dissemination, disaster recovery,

II. Literature Survey

Disasters often lead to significant challenges in information dissemination, coordination, and recovery efforts. Information and communication technology (ICT) has played a vital role in improving disaster management through early warning systems, real-time situational awareness, and community-driven responses. The CityLert platform aims to enhance post-disaster management by providing a web-based system that offers real-time incident reporting, analytics, and community support. This literature review explores the role of ICT, Internet of Things (IoT), crowdsourcing, and early warning systems in disaster management, establishing the theoretical foundation for CityLert. The integration of

information technologies in disaster management enhances risk reduction, preparedness, response, and recovery. A study by Sakurai and Murayama (2019) highlights the importance of ICT in disaster management, emphasizing that social media, sensor networks, and data analytics can improve situational awareness and coordination efforts [2]. However, challenges remain, such as data standardization and ensuring interoperability among systems used by different stakeholders. This underscores the need for platforms like CityLert, which centralize and streamline post-disaster information sharing. IoT has emerged as a critical tool in disaster management by enabling remote monitoring, early warnings, and real-time data collection. Ray et al. (2017) discuss how IoT can facilitate disaster response through smart sensors, cloud-based analytics, and automated alerts [4]. IoT-driven systems, such as wireless sensor networks and real-time analytics, can significantly improve response time and resource allocation [4]. CityLert could incorporate IoT-based monitoring tools to enhance its reporting and predictive capabilities. Early warning systems have proven effective in mitigating disaster risks by providing timely alerts and facilitating rapid response. Sweta (2014) examines the role of mobile crowdsourcing in disaster management, highlighting how community-driven reporting can bridge communication gaps and improve situational awareness [3]. The study emphasizes that platforms such as Ushahidi, which aggregate real-time user-generated reports, can enhance response efficiency. CityLert adopts a similar approach by allowing users to report incidents, access historical data, and receive real-time alerts. Post-disaster recovery relies heavily on community engagement and collaboration. Effective recovery frameworks integrate historical disaster data, volunteer participation, and localized resource allocation. CityLert's features, such as community support, volunteer coordination, and disaster analytics, align with best practices identified in previous studies on community-driven disaster management. Research also suggests that digital platforms should incorporate predictive analytics to anticipate future disasters and inform mitigation strategies. AI technologies have proven highly effective in disaster prediction, risk assessment, and decision-making processes. According to Abid

et al. (2021), AI applications such as geospatial analysis, machine learning, and remote sensing enable enhanced disaster forecasting and resource management [10†source] [1]. By integrating AI-based predictive analytics, CityLert can provide authorities and community members with advanced insights into disaster-prone regions, improving preparedness and mitigation efforts. CityLert integrates advanced technologies such as IoT, AI, and mobile crowdsourcing to create an efficient disaster management platform. The platform's emphasis on real-time reporting, predictive analytics, and community collaboration addresses existing challenges in disaster management. By leveraging proven frameworks and innovative technology, CityLert has the potential to significantly improve post-disaster coordination, response, and recovery efforts. The platform's integration of GIS mapping, real-time data visualization, and AI-driven insights ensures that CityLert not only addresses current disaster challenges but also evolves as a scalable solution for future disaster management needs.

III. Methodology

The CityLert system offers several features designed to enhance post-disaster management:

A. Report an Incident

The "Report an Incident" feature allows users to report emergencies or incidents in real-time, providing detailed information about the incident, including:

Type of Incident: Selection from a dropdown menu (e.g., fire, flood, earthquake).

Location: Entry via a map interface or address.

Description: A text box for detailed incident description.

Severity Level: Selection of severity (e.g., low, medium, high).

Contact Information: Phone number or email for follow-up.

Submit Report: Submission of the report to relevant authorities.

B. Disaster History & Analytics

The platform maintains a record of past incidents, allowing users to access disaster history and analyse trends. Historical data is presented in graphs and charts.

C. Safety Tips

The "Safety Tips" section provides advice and guidelines on how to stay safe during various types of emergencies, including natural disasters, man-made disasters, and general safety.

D. Predict It

The "Predict It" feature allows users to predict potential disasters using input data or observations (e.g., weather patterns, seismic activity) and share predictions with the community to raise awareness.

E. Community Support

The "Community Support" section connects users with resources and support available in their local community, including a resource locator, support groups, and volunteer opportunities.

F. FAQ

The "FAQ" section provides answers to common questions about the platform, reporting incidents, or disaster preparedness.

G. Volunteering

The "Volunteering" section encourages users to get involved in disaster response and recovery efforts through volunteer registration, training programs, and community impact stories.

H. Feedback

The "Feedback" section allows users to provide feedback on the platform to improve its functionality and user experience, including user experience, feature requests, and bug reports.

I. Emergency Alerts

The "Emergency Alerts" section keeps users updated with the latest emergency alerts and warnings, including real-time alerts, customizable alerts, and a log of past alerts.

J. Functionality of CityLert

The CityLert system operates as a centralized platform where users can access detailed information about disasters in specific locations. Authorities upload disaster-specific data, which users can then access to make informed decisions about their recovery efforts. The platform's real-time update feature ensures that users have the most up-to-date information, while the disaster history feature provides valuable insights into past disasters. The community collaboration feature allows users to share resources and support.

K. Key Components of the Methodology

- **Requirement Analysis:** Understanding the needs of users and stakeholders.
- **System Design:** Planning the architecture and user interface.
- **Development:** Building the platform using selected technologies.
- **Testing:** Ensuring the platform is reliable, secure, and user-friendly.
- **Evaluation:** Assessing the platform's effectiveness and gathering feedback for improvements.

L. Potential Impact of CityLert

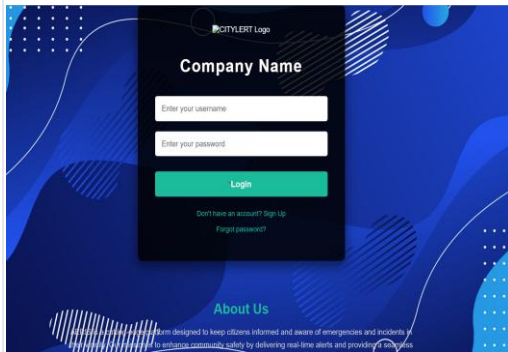
- The CityLert system has the potential to significantly improve post-disaster management by

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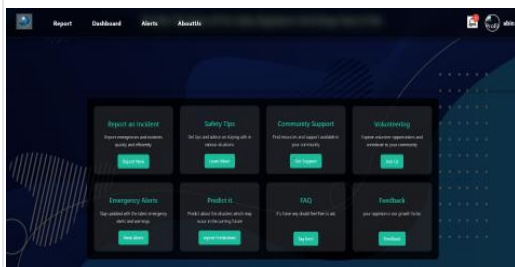
providing detailed information and real-time updates. By offering disaster-specific data, resource availability, and safety measures, the platform ensures that users can make informed decisions and take necessary arrangements. The real-time update feature ensures that users have the most up-to-date information, reducing the risk of harm during recovery efforts

IV. Implementation And Result

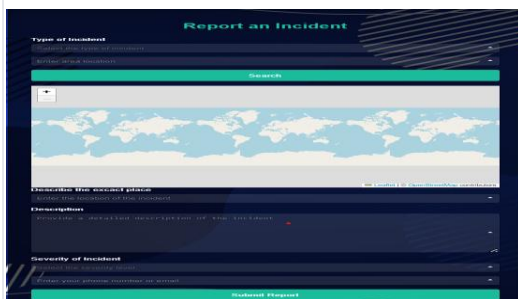
- **Frontend:** HTML and CSS
- **Backend:** Vanilla JavaScript
- **Database:** MongoDB (for storing incident reports, user data, and disaster history)



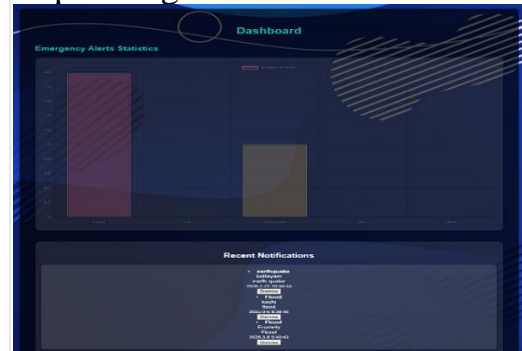
Login Page



Main Menu



Report Page



History Page

V. Conclusion

The CityLert system is a comprehensive web-based platform designed to enhance post-disaster management by providing detailed information about disasters in specific locations. With features such as disaster-specific information, resource availability, safety measures, real-time updates, and community collaboration.

VI. References

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