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MISPLACED & RECOVERED: A DIGITAL WAY TO FIND YOUR BELONGINGS

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ABSTRACT

The "Misplaced and Recovered" web application, developed on the MERN (MongoDB, Express.js, React, Node.js) stack, offers an efficient solution for managing lost items within the TKEM campus. Utilizing MongoDB as a versatile NoSQL database, the platform simplifies the reporting of lost items by allowing users to provide essential details such as item descriptions, loss location, and time. Additionally, the application enables users to share information about found items, creating a centralized hub for lost property management. The MERN stack's versatility ensures a user-friendly interface, combining React for the front end and Node.js with Express.js for a robust back end. A notable feature is the platform's commitment to a stringent validation process, where finders authenticate recipients' identities through posed questions, enhancing trust and reliability in the item retrieval process. This meticulous approach not only adds a layer of security but also promotes accountability among users, fostering a community-driven system for organized lost and found item management on the TKEM campus. The "Misplaced and Recovered" application, with its sophisticated features and collaborative user efforts, stands as a reliable and effective solution, meeting and surpassing the TKEM campus community's expectations for streamlined lost item handling. The MERN stack's flexibility and versatility contribute to a seamless user experience, utilizing React for the front end and Node.js with Express.js for a powerful back end. Notably, the platform distinguishes itself through a rigorous validation process, ensuring the secure return of lost items to their rightful owners. This process involves a verification mechanism where the person finding the item poses a question to authenticate the identity of the recipient, enhancing trust and

reliability in the overall item retrieval process.

1. INTRODUCTION

In today's fast-paced and interconnected world, the "Misplaced and Recovered" web application addresses a crucial need for efficient and secure management of lost items within educational campuses like TKEM. The increasing reliance on technology and the prevalence of personal belongings make the implementation of such a system essential. In the contemporary environment, where individuals carry a multitude of personal items, the likelihood of misplacing belongings is higher than ever. The "Misplaced and Recovered" application provides a streamlined and organized approach to handling this common issue within the TKEM campus. The MERN stack and MongoDB ensure a robust and scalable infrastructure for managing the data related to lost and found items. The necessity of such a system is underscored by the convenience it offers to users. By providing a centralized platform, the application simplifies the reporting of lost items and encourages the sharing of information about found items. This not only expedites the retrieval process but also creates a community-driven approach to managing lost property. Moreover, the rigorous validation process adds a layer of security and trust to the item retrieval process. In an era where data privacy and security are paramount, the application's authentication mechanism ensures that items are returned to their rightful owners, fostering confidence among users. In essence, the "Misplaced and Recovered" web application is a timely and essential tool that addresses the contemporary challenges associated with lost items on campus by combining technological efficiency with a focus on user trust and security.

2. LITERATURE SURVEY

The literature review for the development of the "Misplaced and Recovered" web application is informed by a comprehensive literature survey spanning various research domains. Studies on lost and found management systems provide foundational insights into the challenges and advancements associated with managing items in diverse contexts. Meanwhile, exploration of campus-based applications offers valuable perspectives on functionalities and user experiences tailored to educational environments. This interdisciplinary approach ensures that the application is wellgrounded and addresses

the specific needs of the TKEM campus. At the core of the "Misplaced and Recovered" application lies the MERN stack, drawing on literature that underscores the effectiveness of MongoDB, Express.js, React, and Node.js in facilitating robust data management and user interaction. The emphasis on security is woven into the fabric of the application, inspired by literature on authentication mechanisms for item retrieval. By adopting proven protocols, the application ensures a secure and trustworthy platform, aligning with contemporary best practices in safeguarding user data and maintaining the integrity of the retrieval process. The application stands out by incorporating insights from literature on community-driven approaches in lost item management. Building on the collaborative efforts highlighted in the research, the application encourages users to actively participate in the reporting and retrieval processes, fostering a sense of community responsibility. Additionally, considerations of data privacy, inspired by existing literature on campus applications, shape the application's approach to safeguarding user information. This user-centric and community-driven model positions "Misplaced and Recovered" as an innovative and comprehensive solution within the landscape of lost item management on educational campuses.

3. SYSTEM DESIGN

3.1 SYSTEM ARCHITECTURE

The architecture features a multi-domain integration layer that interfaces with databases and APIs related to lost and found management systems and campus-based applications. This layer ensures seamless data flow and knowledge transfer from various research domains, enabling the application to benefit from the insights gathered. A dedicated security and authentication module is implemented to fortify the application. Inspired by literature on authentication mechanisms for item retrieval, this module employs industry-standard protocols to verify user identities. This includes encryption methods for secure data transmission and user authentication processes to ensure the secure return of items to rightful owners. The core of the architecture is built upon the MERN stack (MongoDB, Express.js, React, Node.js). MongoDB serves as the NoSQL database, efficiently storing and organizing data related to lost and found items. Express.js handles the backend, facilitating robust server-side operations. React, a front-end library, ensures a dynamic and responsive

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user interface, while Node.js supports server-side scripting, enabling smooth communication between the client and server components.

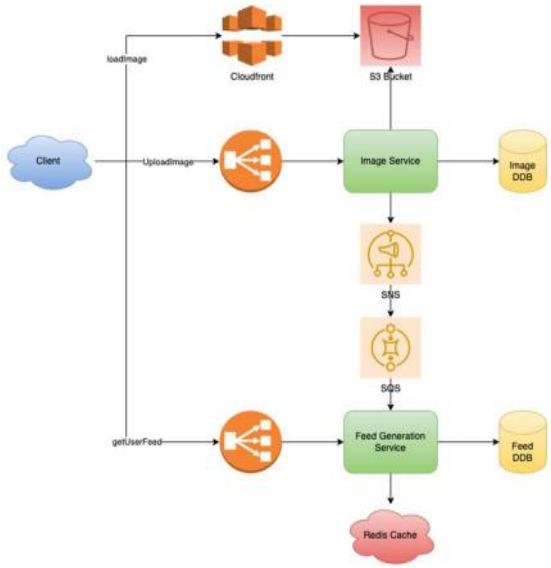

Fig 3.1 System Architecture

3.2 ACTIVITY DIAGRAM

Activity Diagrams in UML serve to visually represent dynamic workflows, showcasing the sequence and conditions of activities within a system or business process. The key components include nodes, representing actions or decisions, and transitions, illustrating the flow between these nodes. Initial and final nodes mark the activity's start and end. Control flows connect actions, specifying the order of execution, while decision nodes enable branching based on conditions. Forks and joins manage parallel flows, and swim lanes partition activities among different entities for clarity.

- Nodes: Represent actions or decisions.
- Transitions: Illustrate flow between nodes

. • Initial and Final Nodes: Indicate activity start and end.

- Control Flows: Connect actions, defining execution order.
- Decision Nodes: Facilitate branching based on conditions.

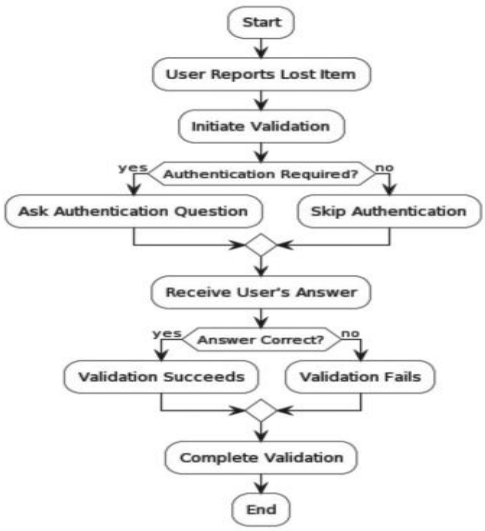

Fig 3.2 Represents Activity Diagram

4. OUTPUT SCREENS

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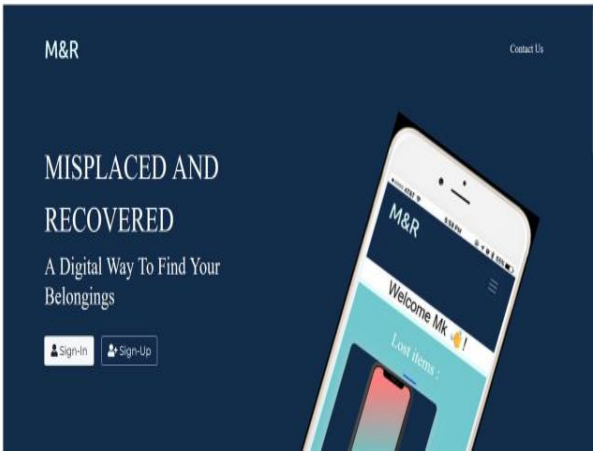

Fig 4.1 Represents Initial User Interface

The output screen represents the homepage.

Fig 4.2 Represents Sign Up Form.

The output screen shows the Sign-Up page.

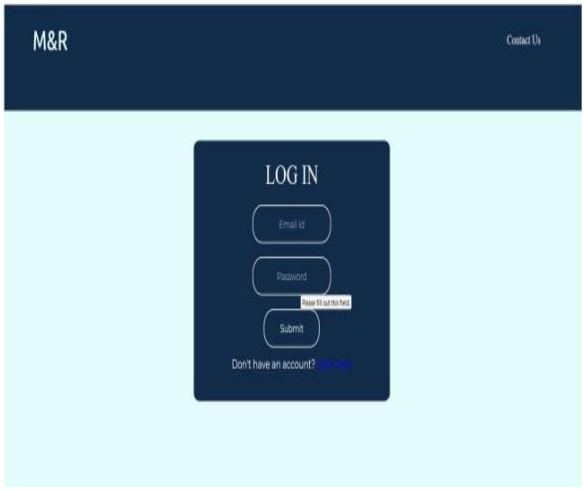

Fig 4.3 Represents Login Form.

The output screen shows the Login page .\

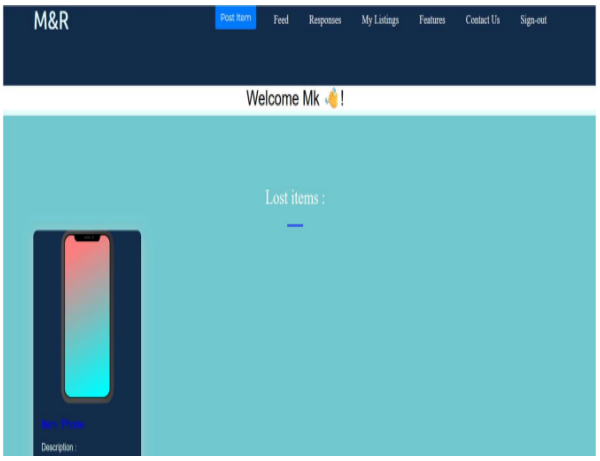

Fig 4.4 Represents lost items listing.

The output screen shows all the lost items listings posted by the users over the application.

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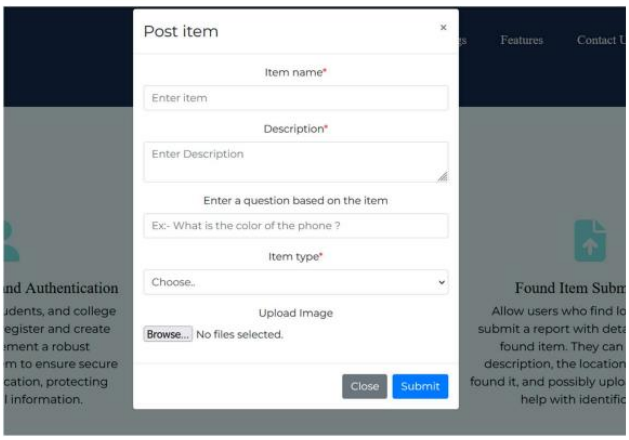

Fig 4.5 Represents Post item option.

The above output screen shows how the user can able to post the items that they have lost or found .

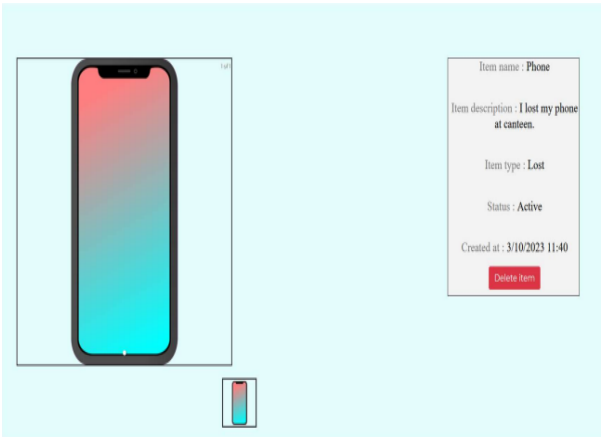

Fig 4.6 Represents Item information.

The output screen shows item information that the user posted and also they can delete the item.

Fig 4.7 Represents the responses.

The output screen shows all the responses that a user gets and according to that user decides who is the right owner and they select a user that is the owner and it shows the number of the posted user.

5. CONCLUSION

The "Misplaced and Recovered" web application, built on the MERN stack, is a comprehensive solution for handling lost items at TKEM campus. It simplifies the process of reporting lost items and creates a central hub for sharing information about found ones. MongoDB, a versatile NoSQL database, is at the heart of the application, efficiently storing and organizing data related to lost and found items. Users can submit reports for lost items with details like descriptions and locations, while those finding items contribute by uploading

comprehensive information. A standout feature is the application's robust validation process, ensuring lost items are returned to their rightful owners. This involves a verification mechanism where the finder authenticates the recipient's identity with a posed question. This meticulous process enhances trust and reliability in the item retrieval journey. In summary, the "Misplaced and Recovered" web application provides a user friendly and community-driven platform for managing lost and found items at TKEM, offering efficiency through its advanced technology and fostering a collaborative atmosphere on campus.

6. FUTURE ENHANCEMENTS

In its future evolution, the "Misplaced and Recovered" web application could benefit from advanced search and matching algorithms, employing data analytics and machine learning to enhance the accuracy and speed of item retrievals. This would significantly improve the platform's efficiency in connecting lost and found items based on detailed descriptions. To foster a more immediate and interconnected community, the application could introduce real-time notifications and alerts. Users would receive updates on recently reported lost items or changes to their reported items, creating a more dynamic and responsive network. Additionally, implementing a rating and feedback system for users could enhance accountability and trust within the community, recognizing responsible behavior and further motivating individuals to participate in the item retrieval process. For improved accessibility, a mobile application version could be developed, allowing users to report lost or found items conveniently on the go. Integration with campus security systems or smart campus technology could also be explored, enhancing coordination with relevant authorities and expediting item recoveries. These enhancements collectively aim to elevate the functionality of the "Misplaced and Recovered" web application, providing a more seamless, secure, and communitydriven experience for TKEM campus users.

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