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A MANAGEMENT SYSTEM WITH AUTHENTICATION, AUTHORIZATION & QR SHARING

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ABSTRACT

SecureQRManage is a high-performance user management system that is secure for organizations dealing with sensitive information. Developed with the MERN stack, it combines authentication, authorization, real-time analytics, and QR-based data sharing to ensure that all user information is secured and encrypted. The system has a graphical dashboard that visually monitors active, inactive, and total users for improved administrative control. QR code generation makes it easy to share secure user information. In contrast to conventional systems, SecureQRManage enhances usability and security through the use of robust access control and easy-to-use visual interfaces. Performance testing proves the efficacy of the system in user and data management. Through the integration of accessibility, security, and IoT, SecureQRManage raises the bar for user-focused, trusted web applications in a hyper- connected environment.

Keywords: Authentication & Authorization, QR Code Sharing, MERN Stack Security, Data Visualization, JWT Authentication, Encrypted Data Sharing.

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I. Introduction

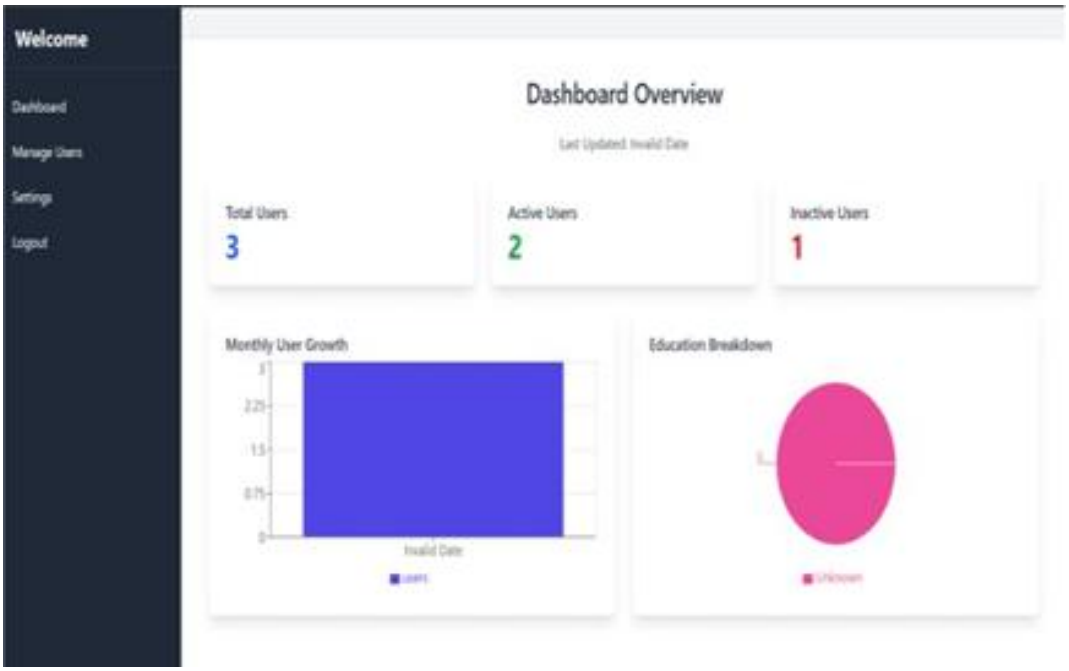
Information management systems form integral parts of modern digital environments that enable organization members effortless access and frictionless operations. Authentication and authorization processes keep sensitive information guarded by checking against user identity and managing rights. QR Based Sharing Schedule QR-based share options introduce the access and safe exchange of information into play. To do that, in this research is intended to establish an information management system which properly deals with data in a streamlined manner using security software and simple, integrated analysis for the promotion of usability. This will be accomplished by having the platform provide insights into data which this analysis will propel increased data transparency to enable better usability optimization. Additionally, the solution aims to raise the level of data transparency with the use of visual analytics to help administrators clearly monitor user behavior. Dynamic, adaptive pattern change methodologies ensure a smart means of encryption thereby always concealing the critical information from the hacker. These outcomes assist in developing an adjustable and complete multimodal threat detection system with possible usage in numerous areas such as corporate services, education and biomedical research. The capacity of the system to generate and exchange QR codes securely also provides an extra layer of operational effectiveness and minimization of manual data transfer, which results in improved workflow automation and productivity.

II. PROPOSED SYSTEM

In this article, we will learn how to implement a secure JWT Authentication System using bcrypt hashing. Authorization uses predefined permissions to constrain access. A graphical dashboard for administrators shows active, inactive and total users in real time. This will enable efficient user data management with CRUD operations and sharing information securely and conveniently using QR code generation.

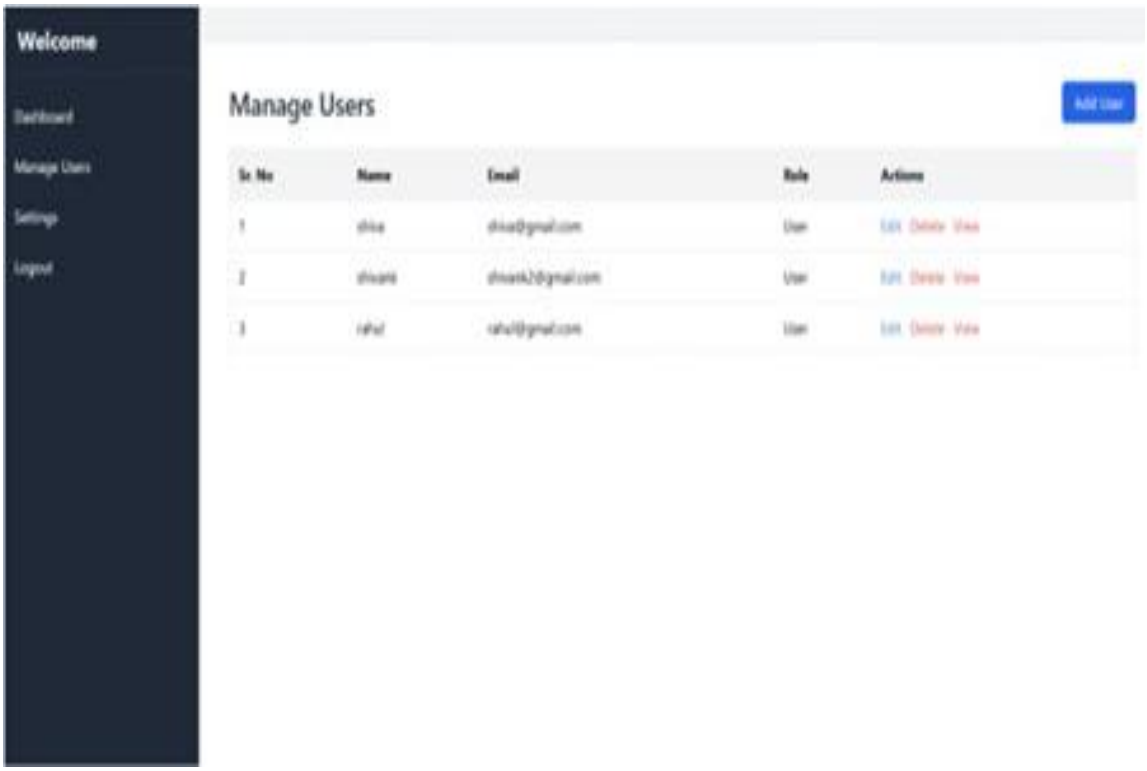
III. METHODOLGY

The research methodology follows a structured approach to design, develop, and evaluate the SecureQRManage system. The development process is based on the Agile methodology, ensuring iterative improvements and continuous feedback integration. The system architecture follows a modular approach, utilizing the MERN stack (MongoDB, Express.js, React, and Node.js) to enable efficient data processing and management. Data security is ensured through encryption techniques, such as bcrypt hashing for password storage and JWT-based authentication. Functional testing, security assessments, and user feedback mechanisms are employed to evaluate system performance and usability. The methodology also includes comparative analysis with existing solutions to highlight the proposed system's effectiveness. Data collection for evaluation is conducted through simulated user interactions, performance benchmarking, and security testing against potential threats.

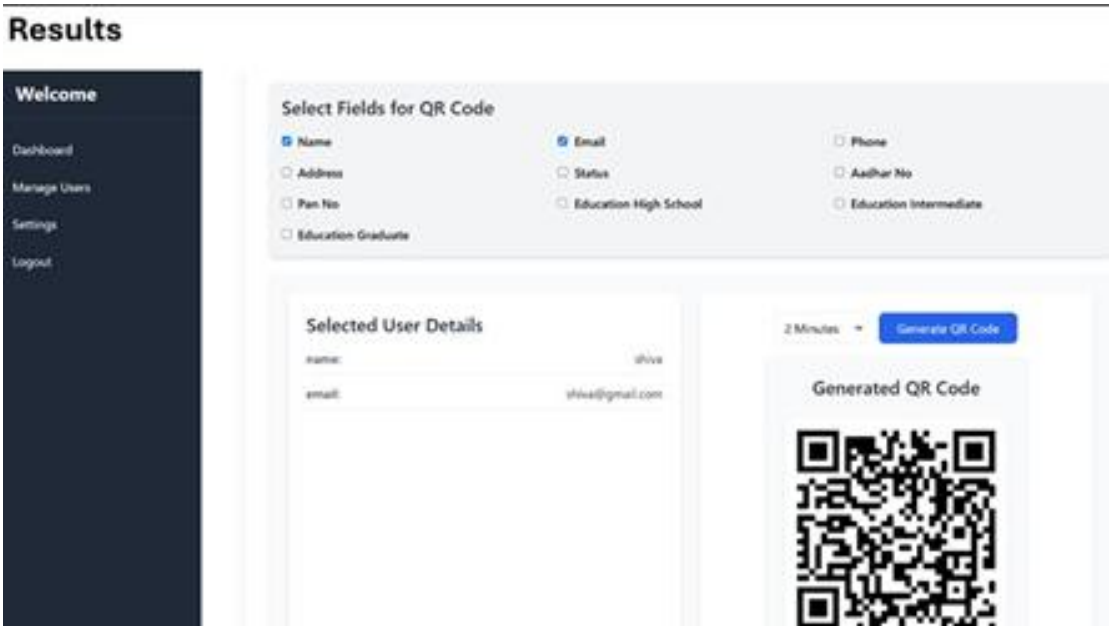


The dashboard serves as a central hub for administrators and users, providing an intuitive and interactive interface to monitor system activity. It displays critical metrics such as the total number of users, active users, and inactive users in real-time. The integration of data visualization tools, including bar graphs and pie charts, enhances usability by offering clear insights into user trends and system performance. The dashboard allows seamless CRUD operations for efficient user management, enabling administrators to add, update, delete, and view user details. Automated alerts and notifications help administrators stay informed about

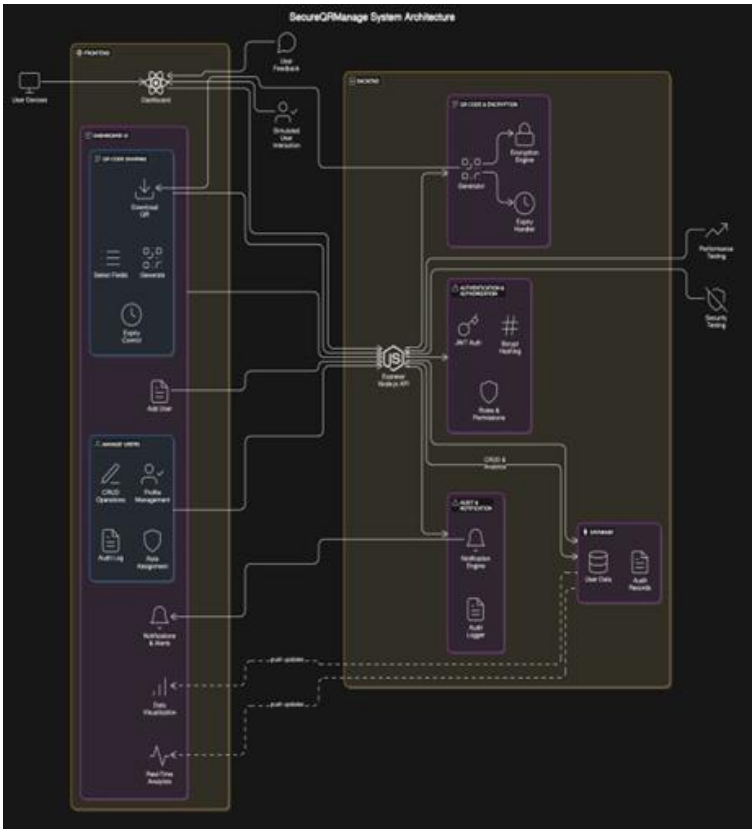
critical system activities, ensuring proactive monitoring and security oversight. Additionally, the QR code generation feature enables secure and convenient information sharing directly from the dashboard. The responsive and user-friendly design ensures accessibility across multiple devices, improving workflow efficiency and operational transparency while maintaining high security standards.



The Manage Users section plays a crucial role in ensuring efficient user administration within the system. Administrators can perform CRUD operations, allowing them to add new users, update user information, delete inactive accounts, and retrieve user details as needed. The system ensures data security by implementing authentication and authorization controls, restricting access to only authorized personnel. User profiles can be managed seamlessly, with options to filter and search for specific users based on various attributes. Additionally, audit logs track all user modifications, ensuring transparency and accountability in user management. The QR code generation feature enables easy sharing of user profiles while maintaining security through encryption techniques. Notifications and alerts help administrators stay updated on changes, ensuring proactive management of user activities. The user-friendly interface and efficient backend processing contribute to a seamless experience, making user management a hassle-free task for organizations.



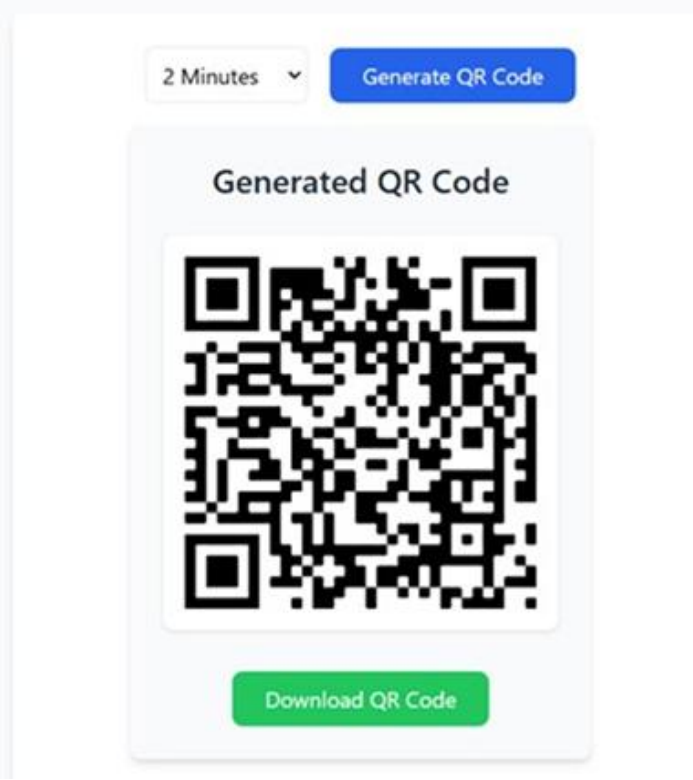
The Add User Form provides administrators with a structured and efficient way to onboard new users into the system. The form captures essential details such as name, email, phone number, address, Aadhar number, PAN number, role, and status, ensuring that all necessary information is recorded for user identification and verification. The user-friendly design simplifies data entry, minimizing errors and improving the overall user experience. To maintain data integrity and security, the form includes validation mechanisms that prevent incorrect data input, duplicate entries, and missing required fields. The role selection dropdown allows administrators to assign predefined roles, ensuring appropriate access control based on user responsibilities. The status field enables quick activation or deactivation of user accounts, providing flexibility in user management.



IV. System Architecture

V. RESULTS

The QR Code Generation Module provides a secure and efficient way for users to generate and share selected information. Administrators can choose specific f ields such as name, email, phone number, address, PAN number, and education details to be included in the QR code. This selective sharing ensures privacy, allowing only relevant data to be shared based on user preferences. Once the fields are selected, users can generate a dynamic QR code with an expiration time, ensuring time-limited access to the encoded information.



The system integrates security measures such as encryption and authentication to prevent unauthorized access. This feature is particularly useful for quick data transfers in corporate, educational, and government applications where secure user identification is required. The Selected User Details section provides an overview of the chosen data, ensuring accuracy before generating the QR code. Users can download the QR code in a high- resolution format, making it easy to scan across various devices. The Download QR Code button allows seamless saving and sharing of the code, eliminating manual data entry errors. This feature enhances data portability and accessibility, enabling users to share important information without compromising security. The intuitive user interface ensures smooth navigation, making it easy for users to generate and distribute QR codes with just a few clicks. By integrating real-time QR generation and expiration mechanisms, the system ensures that shared data remains secure, controlled, and accessible only for the intended duration.

VI. CONCLUSION

SecureQRManage provides a robust and secure solution for managing user data with authentication, authorization, and QR-based information sharing. The system ensures efficient data management, enhances security through encryption, and simplifies accessibility with QR

codes. By incorporating real- time analytics, automated notifications, and a user- friendly interface, SecureQRManage enhances administrative efficiency while maintaining high levels of data protection. The research highlights the significance of secure data handling in modern applications and demonstrates the system's scalability across various domains. Future work includes implementing advanced role-based access control, integrating AI-driven analytics, and expanding the system's functionalities to cater to evolving security and usability requirements.

REFERENCES

[1] Chourishi D, Buttan C K, Chaurasia A and Soni A 2011 Effective E-Learning Through Moodle International J. of Research (IJATER) 1: 34-38 [

[2] Hanum N S 2013 Keefektifan E-Learning Sebagai Media Pembelajaran (Studi Evaluasi Model Pembelajaran E-Learning SMK Telkom Sandhy Putra Purwokerto), J. Pendidikan Vokasi 3 : 90-102.

[3] Husamah 2014 Pembelajaran Bauran (Blended Learning), Prestasi Pustaka, Jakarta.

[4] Rusli M, Dadang H and Ni-Nyoman S 2017 Innovative Learning Multimedia , ANDI, Yogyakarta

[5] Kurniawan M 2016 Use of ' F-Learn ' Moodle as a Learning Management System (LMS) at Satya Wacana Christian University, Proceedings of MMP 2016 9 : 677-686

[6] Hunt T 2013 Moodle: Basic Concept Lecturer Guide, Faculty of Education, Create

[7] Cavus N and Teyang Z 2014 A Comparison of Open Source Learning Management Systems J. of Procedia 143 : 521-526

[8] Haskari F A 2012 Modules for Using Moodle (Modular Object-Oriented Dynamic Learning Environment) Sriwijaya University, Palembang

[9] Faesal A and Dasriani N G 2015 Design and Development of E-Learning Based Learning Aid Media for Programming Subjects Matrix J. 14 : 1-7

[10] Sari A P Baedhowi and Cicilia D S I 2017 The Use of Learning Media with Moodle Approaches to Improve The Quality of Education: A Literature Study, J. of ASSEHR 158 : 54-59

[11] Jebari K, Boussedra F and Ettouhami A 2017 Teaching Information Systems Management With Moodle, Ijet Paper 12 : 4-16

[12] Suartama K and Dewa K T 2014 E- Learning Based on Moodle, Graha Ilmu, Yogyakarta

[13] Longe, R.S. (2001). Introduction of Educational Planning. Seminar paper of the Educational planning Unit. Department of Educational management, University of Ibadan. Managing the public service strategies for improvement series: No. 6. March 1997, Atlanta, Georgia, U. S. A., pp 335-342.

[14] Sing, T. F. (2002). Impact of Information & Communication Technology (ICT) on Office Demand in Singapore CBD, Presentation to Association for Project Management APM).

[15] ali. (2009). Records Management. Retrieved January 2014, from the World Wide Web: http://information-field.blogspot.com/2009/06/challenges-in-managing recordcentre.html

[16] Ampofo, A. J. (2020). Waste disposal management practices in selected senior high schools within the Wa Municipality of Ghana. International Journal of Management & Entrepreneurship Research, 2(4), 273-290.

[17] Ampofo, A. J (2020). Contributions of the hospitality industry (hotels) in the development of Wa. International Journal of Advanced Economics, 2(2), 21-38.

[18] Ampofo, A. J. (2019). Performance management and appraisal in improving teachers quality: Lambert Academic Publishing.

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