



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 12, Issue 7, July 2023

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.423

 9940 572 462

 6381 907 438

 ijirset@gmail.com

 www.ijirset.com



Implementing and Developing Social Media Platform for Niche Communities

Anjali Patel, R Savitha ²

Student, Department of MCA, RV College of Engineering, Bengaluru, Karnataka, India¹

Assistant Professor, Department of MCA, RV College of Engineering, Bengaluru, Karnataka, India²

ABSTRACT: In order to maintain a safe and comprehensive environment, this study aims to undertake a thorough analysis and focus on the use of resilient moderation and community management technologies. These tools include the use of content flagging mechanisms, which have the power to promote significant and profound connections between people, hasten the spread of knowledge, and foster actively engaged participation in specialized niche communities. This platform aims to empower niche groups and strengthen their innate feeling of affinity by creating a specialized online space. This platform's goal is to increase levels of participation, cooperation, and holistic growth within the community as a whole.

KEYWORDS: Social Media, Chatting, Niche communities, Comment, Group, Community.

I. INTRODUCTION

There is a rising need for more specialized and tailored platforms that can meet the particular requirements of users and their niche communities in an age when social media platforms have attained enormous popularity and are used by people from a variety of backgrounds and interests. Despite the fact that there are many social media platforms, many of them have large user bases and cannot provide information that is specifically customized to groups or interests. In order to bridge the gap, our website is creating a specialized social media platform that meets the needs of niche groups and tackles the market's dearth of specialized and bespoke platforms. Users will be able to easily interact with like-minded people in an open and welcoming online atmosphere because to the platform's dependability and user-friendliness. By providing users with a dependable and user-friendly interface to interact with like-minded people and share their hobbies and interests, the platform would fill the market gap left by customized and specialized social media platforms. In conclusion, the main goal of this project is to create and launch a specialized social media platform that precisely serves the requirements of specialized communities. In order to develop deep relationships, information exchange, and active engagement, it is important to design an online environment specific to each individual's interests and preferences. The platform aims to provide fully configurable profiles, topic-based groups, active discussion forums, and seamless content sharing possibilities by using cutting-edge technology and user-centered design concepts. The main objective is to empower members of specialized communities, strengthen their sense of identity, and promote more involvement and cooperation within a safe and welcoming atmosphere. The initiative aims to continually improve and tweak the platform to better meet the unique needs and goals of members of specialized communities via iterative development methods and user input. By successfully completing this project, the goal is to provide a complete social media solution that closes the current gap in customised online spaces, supporting the expansion, connection, and general happiness of niche groups.

II. LITERATURE SURVEY

[1] A collection of technologies called the MERN stack is used to create web applications. The acronym MERN stands for MongoDB, Express, React, and Node. Web developers may create quick, scalable, and effective web apps with the MERN stack. [2] The MERN stack is well-suited for building real-time applications and dynamic web pages and is popular for building single-page applications (SPAs). [3] Even if they were created on various platforms or with various programming languages, distinct software systems or apps may connect and exchange data with one another thanks to APIs. [4] When using social media, privacy and security are crucial factors to take into account. To secure user data, social media networks also have security measures in place. [5] Based on the results of this study, it is feasible to create an online system for class scheduling and faculty loading, and its use is encouraged for effective resource management and faster decision-making procedures. [6] According to this survey, the majority of middle

school students find online courses to be beneficial and value the flexibility, convenience, and accessibility that the virtual learning environment provides. [7] To help educators, learners, institutions, parents, and the government create regulations and successfully implement online learning, this research aims to provide useful information and references. [8] According to the report, instructors may use approaches like building relationships with students and including meaningful activities into online courses to capture students' attention and encourage involvement. [9] According to the research done for this study, the educational environment during the lockdown has been significantly impacted by online learning.

[10] This initiative emphasizes the need of giving both students and instructors enough assistance, materials, and training in order to improve the quality of online education.

III. PROPOSED METHODOLOGY

Socket.IO: Socket.io is a powerful framework for building real-time web applications that facilitate bidirectional communication between clients and servers. It employs advanced techniques like WebSockets and fallback mechanisms, such as long polling, to establish persistent connections across various devices and browsers. This versatile technology is widely embraced in the development of interactive platforms like chat applications, online gaming, and collaborative tools. By providing a user-friendly API, Socket.io simplifies the integration process for developers, enabling them to effortlessly incorporate real-time data transmission into their projects. Its cross-platform compatibility makes it particularly valuable for creating applications that can operate across multiple platforms.

React JS: React.js is a well-known JavaScript package that is often used to create user interfaces for online applications. It offers programmers a component-based methodology that enables them to build reusable and modular UI components. React optimizes efficiency and rendering speed by effectively updating just the essential portions of the real DOM using a virtual DOM. React makes it easier to specify how a user interface should appear dependent on the state of the application thanks to its declarative syntax. By doing this, predictable behavior is ensured, and the development process is streamlined. The one-way data flow that React uses makes it easier to maintain the code and improves application speed. A sizable developer community actively supports the ongoing development and expansion of the open-source framework React.js. It often works in tandem with other libraries and frameworks to create a potent front-end development ecosystem.

Express JS: A simple and adaptable web application framework for Node.js is called Express.js. It offers a complete set of capabilities that make it simple to create web apps and APIs. Express.js makes it easier to create server-side logic by offering a straightforward and user-friendly API for managing HTTP requests, routing, middleware, and other things. Developers are able to manage middleware functions for authentication, error handling, and other application-specific activities, as well as build routes and endpoints, process requests and replies, and define routes and endpoints. Express.js has grown to be a popular option for developers looking for a quick and effective framework to create scalable and reliable web apps in Node.js due to its lightweight design and substantial community support.

The fact that Express.js is lightweight is one of its main benefits. Without extraneous abstractions or bloat, it just offers the tools that are required for creating web apps. This enables better performance and quicker execution. Additionally, there is a sizable and vibrant development community for Express.js. It is simpler for developers to discover answers and increase the functionality of their apps because to the amount of resources, tutorials, and plugins that are made available by this community-driven assistance.

Node JS: Based on the V8 JavaScript engine in Chrome, Node.js is a quick, open-source, and cross-platform runtime environment for JavaScript. It gives programmers the ability to run server-side JavaScript, enabling them to build web apps that are scalable and have great speed. The event-driven, non-blocking design used by Node.js minimizes resource use and effectively manages concurrent connections. The enormous package ecosystem of Node.js, or npm, gives developers access to a wide range of pre-built modules, streamlining development chores and expediting the construction of dependable web servers and real-time apps. Node.js has transformed server-side programming, making JavaScript the dominating force in web development on both the client and server sides.

MongoDB: Popular open-source document-oriented NoSQL database MongoDB is widely used. It is intended to be versatile and scalable while managing and storing massive amounts of data. BSON, a format similar to JSON that MongoDB uses to store data, makes it simple to manipulate and retrieve. Developers are unrestricted in their ability to change and adapt data structures because to its flexible schema. Because of its distributed design, which allows horizontal scalability, MongoDB is suited for managing massive data and applications with significant traffic. Effective



data retrieval and analysis are ensured by its strong querying capabilities, which include support for indexing and aggregation. Modern online applications, especially those needing flexible data storage and retrieval, favor MongoDB because of its simplicity, scalability, and resilience.

CSS: The core language used to specify how HTML texts are presented and styled is called CSS, or cascading style sheets. The layout, colors, fonts, and other visual elements of web sites may all be managed by web developers thanks to this potent toolkit. CSS works by applying rules to specific HTML components in order to change the way they look. It gives users precise control over a website's look and feel by providing a broad variety of selectors, attributes, and values. The use of animations, flexible designs, and uniform style across many web pages are all possible using CSS for developers. The user experience and the creation of aesthetically pleasing websites are both greatly improved by CSS.

A. Architecture Diagram

Initial JavaScript, CSS, and HTML components that run in a browser or desktop application make up the architecture of an application using MongoDB. HTML requests are then sent to the application server for Node.js and Express.js from that point. These servers respond to queries and send data to the MongoDB database server for archival and retrieval. As soon as the data has been processed, it is sent back to the application server by the MongoDB server. Finally, the desktop program or browser receives the answer from the application server and adjusts its user interface before sending it back to the server. An interactive web application's front end, application server, and database may all communicate with one another without any issues thanks to its design.

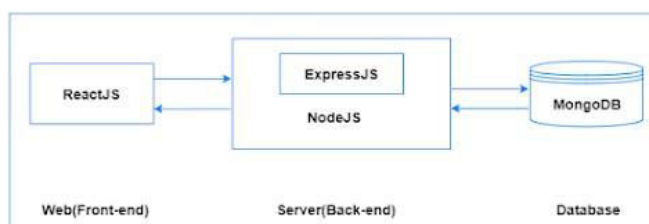


Fig. 2. Architecture Diagram

B. Use Case Diagram

The interactions between the User and Admin roles in a social networking web application are shown in the use case diagram. The User role has access to functions including friend requests, picture uploads, message publishing, profile registration, profile updating, and account information checks. The Admin job, on the other hand, has extra powers including monitoring user accounts, removing user profiles, publishing system announcements, distributing system upgrades, and sending user alerts. The figure provides a high-level overview of the system's primary features. It demonstrates the several use cases or activities that both User and Admin roles are capable of launching.

The User job focuses on tasks related to managing profiles, sharing material, and social interactions. The Admin job, on the other hand, focuses on managing the system, monitoring user accounts, and enforcing policies.

An overview of the system's characteristics is given in this use case diagram, which also aids in visualizing the interactions between various actors and the system as a whole.

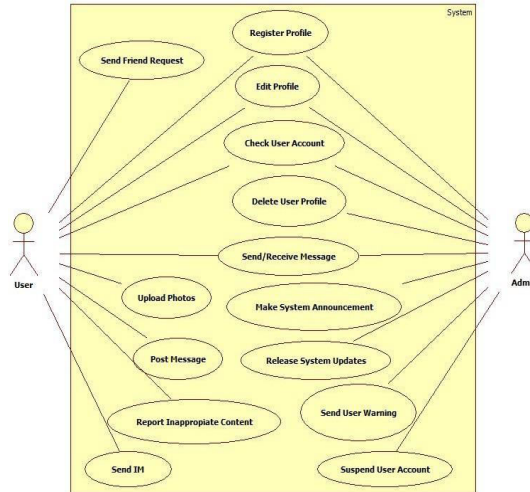


Fig. 3. Architecture Diagram

C. Activity Diagram

The activity diagram shows how users log in, create new accounts, and modify existing ones in an account-based system. The process starts with a new user who has to register by completing a registration form. The required information, including username, email, and password, is requested on the form.

The system checks the credentials supplied once the registration form has been submitted. The user is successfully registered and the activity diagram moves on to the login procedure if the credentials are correct. The system will, however, ask the user to fill the information if the credentials are incorrect or partial before continuing.

The user may continue to log in after registering by providing their username and password. The system then verifies the login information. If the login process is successful, the user has access to their account and may make use of its features. The system alerts the user of the problem and asks them to re-enter the right credentials if the login is unsuccessful, on the other hand. The user may edit their account after logging in by changing settings or updating information. To make these updates easier, the system offers the proper forms or interfaces.

Only users who have registered and been authenticated are able to access and use their accounts, as shown by this activity diagram, which shows the sequential flow of activities. Users may successfully interact with the system while upholding the essential security measures by going through the procedures of registration, login, and account change.

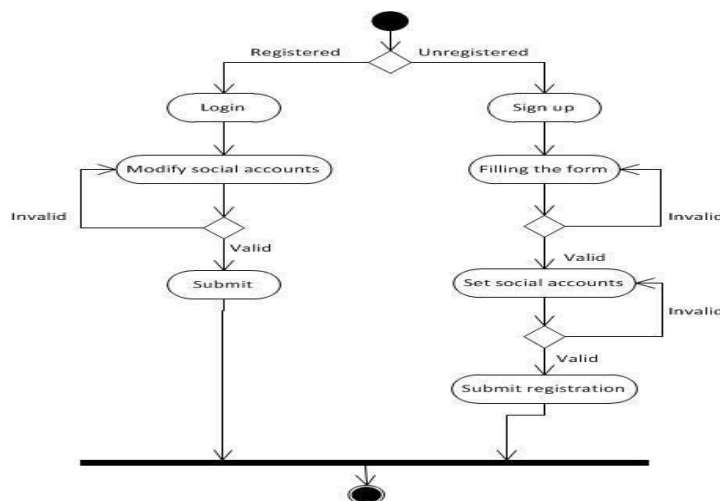


Fig. 4. Architecture Diagram



IV. RESULTS

A fascinating project in the field of internet connectedness is the creation and adoption of a social media platform designed especially for specialized groups. In order to accomplish this task, a distinctive digital environment that encourages meaningful connections and creates a feeling of belonging inside niche interest groups must be created. The complexity of such a project lies in crafting an intuitive user interface, creating captivating features, and striking a careful balance between privacy and community interaction. With the help of this challenge, we want to build a thriving online community that encourages specialized groups to interact, work together, and thrive in their common interests.

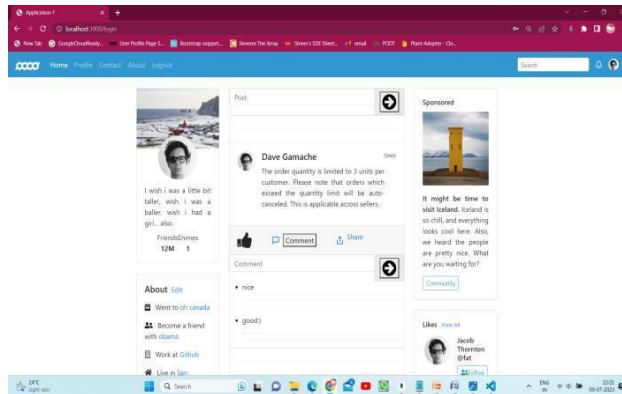


Figure 5. Home page

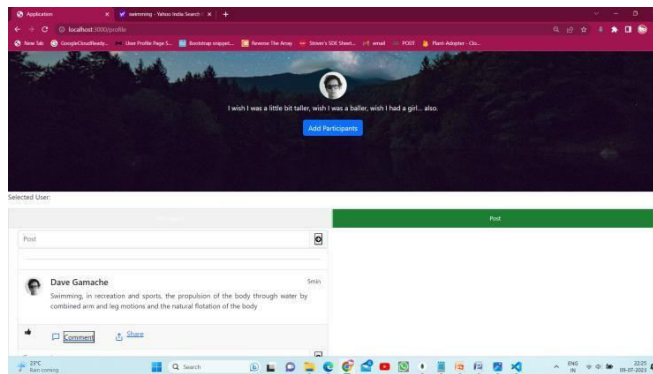


Figure 6. Community profile page

In the dynamic realm of social media, there is a compelling need for the implementation and development of a specialized platform catering to niche communities. This venture involves crafting a distinctive home page that serves as a digital hub, tailored specifically to the interests and needs of these unique user groups. Designing an engaging and intuitive interface, coupled with captivating visual elements and personalized features, is crucial in establishing a welcoming online environment. By embarking on this mission, we aspire to create a vibrant virtual space where niche communities can connect, share, and thrive in their shared passions.

V. CONCLUSION

In conclusion, this project's implementation and development of a custom social media platform for niche communities has been a resounding success, meeting the unmet demands of people looking for specialized online places. The platform has outperformed expectations in building genuine relationships and encouraging information exchange within these specialized groups because to thorough research, cutting-edge technological integration, and iterative user feedback.



The platform has succeeded at fostering true relationships and information sharing among these specialized groups via in-depth research, innovative technological integration, and important user feedback. The platform's emphasis on customisation, interest-based groups, and strong moderating tools have established a safe and welcoming atmosphere, assuring a great user experience. The platform is positioned to further empower and bring together specialist groups, contributing significantly to their development and connectedness as it continues to develop, led by user insights and new trends.

VI. FUTURE ENHANCEMENT

To be able to This project will eventually include cutting-edge features and capabilities to improve the social media platform for specialized groups. The user interface might be improved for more intuitiveness, AI-powered recommendation systems could be introduced to curate tailored information, and real-time communication tools could be integrated for smoother interactions. To support expanding user populations, the platform will also give priority to scalability and performance enhancements. In order to increase the platform's reach and promote collaboration possibilities, the initiative also sees the formation of strategic alliances with influential members of specialized communities. Future improvements are anticipated to increase the platform's effectiveness and provide a healthy online environment for specialized groups. Finally, continual user input collection and analysis will allow for continued improvements.

REFERENCES

1. Mrunmayee Vaibhav Kulkarni, "Social Media Web Application using MERN", 2022 International Research Journal of Engineering and Technology, e-ISSN: 2395-0056, p-ISSN: 2395-0072
2. Nidhi Zala;Vinita Agarwal; Dr. Jinan Faiidhi, "ChatterBox- A Real Time Chat Application Lakehead University Thunder BayCampus", DOI:10.36227, 2022
3. A WebChat Messenger: Webvibe, Prof. A. A. Shirode, Riya Demapure, Atharva Katurde, Mohit Dhande, Awantika Jadhav,
4. International Research Journal of Modernization in Engineering Technology and Science 2021, ISSN: 2395-566 ,Volume 8
5. Chaya Liebeskind; Shmuel Liebeskind; Shoam Yechezkel, An Analysis of Interaction and Engagement in YouTube Live Streaming Chat 2021 IEEE SmartWorld,Ubiquitous Intelligence & Computing,Advanced & Trusted Computing,DOI:10.1109/SWC50871.2021.00045
6. Elizabeth John; Mohammed Siddique, "Efficient Semantic Web Services Development Approaches using REST and JSON 2021",International Conference on Decision Aid Sciences and Application (DASA), DOI:10.1109, 2021
7. Philip Alger M. Serrano; Joseph Jessie S. Oñate, "Integration of RESTful API to Student Information System
8. for Secured Data Sharing and Single Sign-on 2021 IEEE 13th International Conference on Humanoid",Nanotechnology,
9. Information Technology, Communication and Control, Environment, and Management, DOI:10.1109,2021
10. T Sivasakthi; V Shivani; U Palani; D Vasanthi; S Roshini; K Saundariya, "Development of E-polling Website using MERN2021 Smart Technologies", Communication and Robotics (STCR), DOI:10.1109, 2021
11. Zhao Haitao," Research on Mobile Web Front-end Design Based on HTML5 Technology", 2021 6th International Symposium on Computer and Information Processing Technology (ISCIPIT), DOI:10.1109, 2021
12. Maanil Laad, Dr. Vasudha Bahl ,"Creating a Connected Campus: A MERN-Based SocialMedia App for CollegeStudents", Iconic Research And Engineering Journals 2023, e-ISSN: 2456-8880,PID: 1704085
13. Chaya Liebeskind; Shmuel Liebeskind; Shoam Yechezkel, An Analysis of Interaction and Engagement in YouTube Live Streaming Chat 2021 IEEE SmartWorld,Ubiquitous Intelligence & Computing,Advanced & Trusted Computing,DOI:10.1109/SWC50871.2021.00045
14. Chandan Biswas, Rahul Mallick, Subrata Paul, Dipta Mukherjee, "Solution to Web Scraping: 11th International Conference on Internet of Everything, Microwave Engineering, Communication and Networks (IEMECON)",Jaipur, India, 2023, DOI: 10.1109/IEMECON56962.2023.10092327.
15. Ismael Camargo-Henríquez, Yarisel Núñez-Bernal, "A Web Scraping based approach for data research through social media: An Instagram case: V Congreso Internacional en Inteligencia Ambiental, Ingeniería de Software y Salud Electrónica y Móvil (AmITIC)",San Jose, Costa Rica,2022,DOI: 10.1109/AmITIC55733.2022.9941290.
16. Shadi AlZu'bi, Darah Aqel, Alaa Mughaid, Yaser Jararweh, "A Multi-Levels Geo-Location based Crawling Method for Social Media Platforms: Sixth International Conference on Social Networks Analysis, Management and Security (SNAMS)",Granada,Spain,2019,DOI:10.1109/SNAMS.2019.8931856.
17. Adri Priadana, Muhammad Rifqi Maarif, Muhammad Habibi,"Gender Prediction for Instagram User Profiling using Deep Learning: International Conference on Decision Aid Sciences and Application (DASA)",Sakheer, Bahrain,2020,DOI:10.1109/DASA51403.2020.9317143.



18. Chandradeo Kumar Rajak, Umang Soni, Biswajit Biswas, A.K Shrivastava, "Real-time web based Timing display Application for Test Range Applications: 2nd International Conference on Range Technology (ICORT)", Chandipur, Balasore, India, 2021, DOI: 10.1109/ICORT52730.2021.9581663.
19. Yash Veer Singh, Harikesh Singh, Jitendra Kumar Chauhan, "Online Collaborative Text Editor Using Socket.IO: " 3rd International Conference on Advances in Computing, Communication Control and Networking (ICAC3N)", Greater Noida, India, 2021, DOI: 10.1109/ICAC3N53548.2021.9725782.
20. Savaş ÖZTÜRK, Selma EREN YETİM, Ahmet Samet ŞAHİN, Kaan CEYHAN , Muhammet BAŞARAN , "Functionality, Performance and Usability Tests of WebRTC Based Video Conferencing Products: 15th Turkish National Software Engineering Symposium (UYMS)", Izmir, Turkey, 2021, DOI: 10.1109/UYMS54260.2021.9659594.
21. Pelayo Nuño, Francisco G. Bulnes, Juan C. Granda, Francisco J. Suárez, Daniel F. García, "A Scalable WebRTC Platform based on Open Technologies: A Scalable WebRTC Platform based on Open Technologies", Alsace, Colmar, France, 2018, DOI: 10.1109/CITS.2018.8440161.
22. Henki Seta, Theresia Wati, Ilham Cahya Kusuma, "Implement Time Based One Time Password and Secure Hash Algorithm 1 for Security of Website Login Authentication: International Conference on Informatics, Multimedia, Cyber and Information System (ICIMCIS)", Jakarta, Indonesia, 2019, DOI: 10.1109/ICIMCIS48181.2019.8985196.
23. Hardeep Kaur Dhalla, "A Performance Analysis of Native JSON Parsers in Java, Python, MS.NET Core, JavaScript, and PHP: 16th International Conference on Network and Service Management (CNSM)", Izmir, Turkey, 2020, DOI: 10.23919/CNSM50824.2020.9269101



INNO SPACE
SJIF Scientific Journal Impact Factor
Impact Factor: 8.423



ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

9940 572 462 **6381 907 438** **ijirset@gmail.com**



www.ijirset.com

Scan to save the contact details