

Customer Relationship Management System: Discussion and Conclusion

Vikrant Paralkar¹, Deepeshkumar Saroj^{1,*}, Om Jawanjal¹, Charusheela Pandit²

Abstract

Customer Relationship Management (CRM) systems play a crucial role in helping businesses manage customer interactions, improve satisfaction, and drive growth. This project focuses on developing a highly customized CRM solution that aligns with a company's specific needs, ensuring seamless customer management, enhanced communication, and smooth integration with existing business infrastructure. Unlike generic CRM platforms, this solution will be designed to include only essential functionalities, eliminating unnecessary features to maintain cost-effectiveness and operational simplicity. The system will be highly flexible, allowing businesses to adapt it to changing requirements, implement future modifications, and ensure ease of use with minimal training. Additionally, scalability will be a key consideration, enabling the CRM to handle increasing customer data and users as the business expands. By strengthening customer relationships, improving operational efficiency, and optimizing workflow management, this CRM system will help businesses maintain a competitive edge in an ever-evolving market, ultimately leading to long-term success and sustainable growth.

Keywords: Customer relationship management (CRM), flexibility, scalability, cost-effectiveness, user-friendly interface, full-stack development

INTRODUCTION

In today's competitive business environment, efficient customer management is key to maintaining strong customer relationships and achieving business success. Customer Relationship Management (CRM) systems are designed to help companies manage these relationships more effectively. However, many businesses find that generic CRM systems can be both costly and difficult to adapt to their specific operational needs. This project is dedicated to developing a tailored CRM solution that meets the company's specific needs. The main goal is to enhance customer management while seamlessly integrating with current workflows and systems. Moreover, the CRM will be adaptable, ensuring it can evolve alongside the company's growing requirements. By concentrating only on essential features, the

CRM solution will avoid the unnecessary complexities often found in off-the-shelf systems, making it a cost-effective option in the long run. The system will provide an intuitive and user-friendly interface, enabling employees to efficiently manage customer relationships, ultimately improving customer satisfaction and business outcomes.

PROBLEM STATEMENT

Many businesses struggle with scattered client data, poor communication, and unorganized customer service, leading to bad customer experiences and missed sales. Without a central system, it is hard to manage interactions, personalize responses, and maintain follow-ups, making it difficult to build strong customer relationships. A comprehensive CRM system consolidates customer

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data, streamlines communication, and automates processes, enhancing engagement, satisfaction, and business success.

RELATED WORK

Many studies have examined how CRM systems have evolved and improved, aiming to enhance customer engagement and simplify business operations.

1. *CRM systems and customer engagement*: Payne and Frow highlighted the need to align customer relationship management (CRM) practices with a company's overall strategy to strengthen customer engagement and satisfaction [1]. Their research showed that when CRM systems are effectively implemented, they help businesses retain customers and provide more personalized services. This study served as a groundwork for future research on making CRM systems more adaptable and tailored to specific needs.
2. *Automation in CRM systems*: In a study by Buttle and Maklan, the role of automation in CRM was analyzed, revealing that automation features, such as automatic data collection and customer communication, significantly enhance CRM efficiency [2]. The study found that automation reduces human error and improves decision-making processes by providing real-time data on customer interactions.
3. *Cloud-based CRM adoption*: A significant shift in CRM adoption was noted by Forootani *et al.*, who studied the benefits of cloud-based CRM systems for small to medium enterprises (SMEs) [3]. Their research highlighted the scalability, cost-effectiveness, and real-time access offered by cloud solutions, which allow SMEs to manage customer relationships without extensive IT infrastructure. This work is relevant in the context of businesses seeking to streamline CRM functionalities while reducing overhead costs.
4. *AI integration in CRM*: In a more recent study, Ledro *et al.* explored the integration of Artificial Intelligence (AI) in CRM systems [4]. They identified that AI-enabled CRM systems improve customer insights by using predictive analytics to anticipate customer needs and behaviors. This approach allows businesses to tailor their interactions and offers to specific customer profiles, resulting in higher conversion rates and satisfaction.
5. *CRM for customer data management and security*: A critical aspect of CRM systems, particularly in terms of data privacy, was examined by Boppana, who investigated the implications of GDPR (General Data Protection Regulation) on CRM systems [5]. Their study showed that businesses must adapt their CRM systems to ensure compliance with data protection laws while still delivering effective customer service.

METHODOLOGY

The CRM solution is developed using a full-stack approach, ensuring scalability, flexibility, and seamless integration with existing systems [6]. The technologies employed include MySQL for the database, HTML, CSS, and JavaScript for the front end, and PHP with Laravel for the back end. The development follows an agile and iterative approach, allowing for continuous feedback and modifications to meet evolving business needs as shown in Figure 1.

System Design

- *Front end*: HTML, CSS, and JavaScript for a dynamic, responsive, and user-friendly interface.
- *Back end*: PHP and its frameworks, such as Laravel, for efficient server-side logic and secure integrations.
- *Database*: MySQL offers dependable, adaptable, and scalable storage for managing data efficiently.

Front-end Development

The front end is developed with HTML, CSS, and JavaScript, providing a responsive and engaging user experience [7]. It includes features like real-time updates, search capabilities, and reporting tools to improve usability. Additionally, user authentication and role-based access controls ensure a secure system.

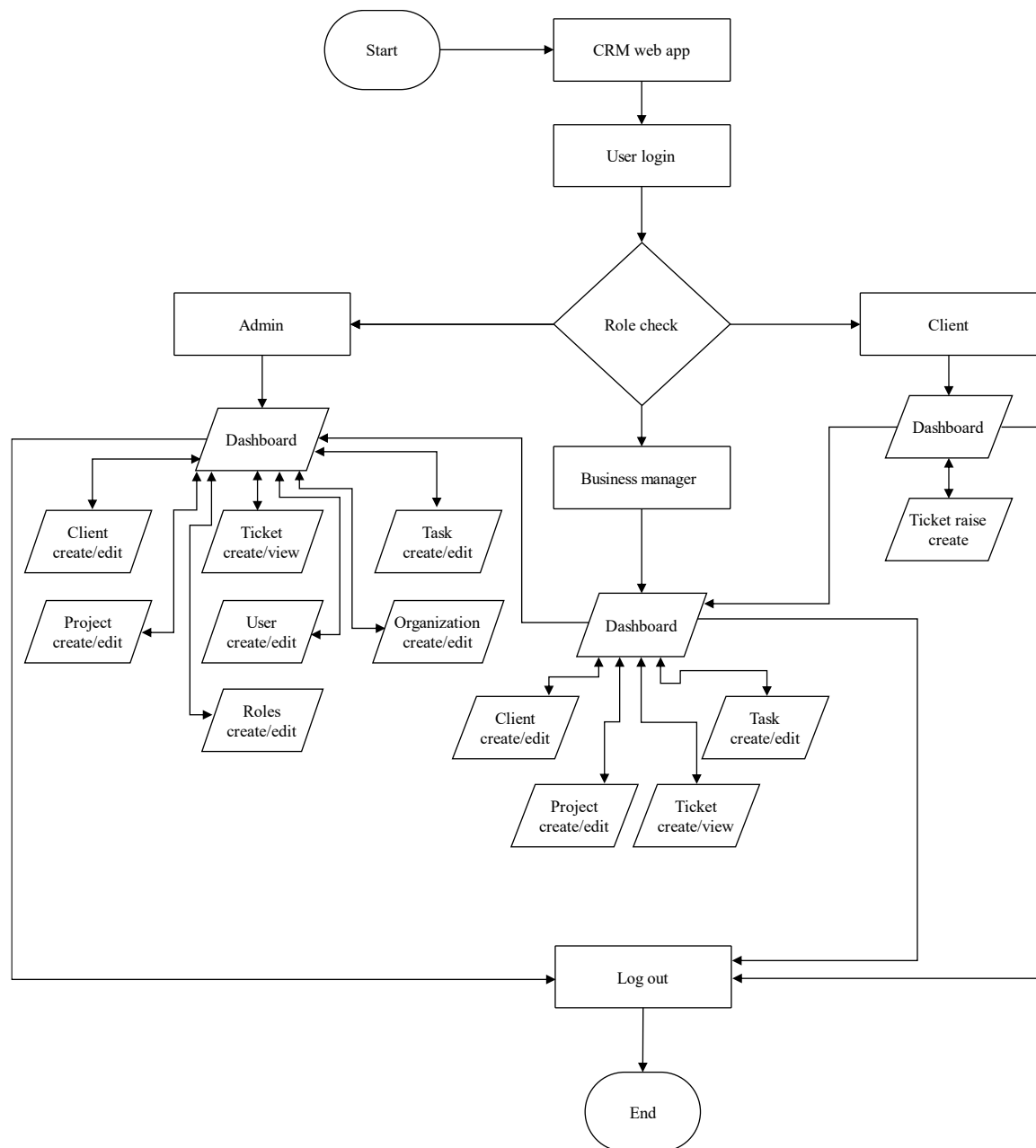


Figure 1. System design.

Back-end Development

The backend is built with PHP and Laravel, ensuring smooth and efficient server-side operations. Laravel provides a robust framework for managing authentication, routing, and database interactions, ensuring seamless integration with the front end.

Database Integration (MySQL)

MySQL is used for structured data storage, supporting customer records, logs, and reports. Indexing and query optimization techniques are implemented to ensure fast performance and scalability [8].

RESULT

The tailored CRM solution seamlessly integrates seven essential features, improving both customer relationship management and overall operational efficiency. These features streamline various business processes, ensuring better organization, automation, and user engagement.

Login Page

Login page built using the Laravel framework, featuring a simple and minimalistic design that allows users to authenticate themselves by entering their credentials is shown in Figure 2. With input fields for email and password, a “Remember Me” option, and a login button, the CRM Login Page provides a user-friendly interface for a smooth authentication process [9].

CRM Dashboard

The CRM dashboard in the image has a clean and minimalistic design, featuring a sidebar navigation menu on the left and key metrics displayed at the top as shown in Figure 3. The sidebar has a dark theme with white text/icons and includes the following sections:

- *Dashboard (highlighted in blue)*: Indicates the current active page.
- *Users*: Manages users in the system.
- *Clients*: Handles client-related information.
- *Organizations*: Manages organizations associated with the CRM.
- *Projects*: Tracks projects within the CRM.
- *Tasks*: Manages task assignments.
- *Roles*: Defines roles and permissions for users.

Users Management

The Users Management Page of a CRM system provides an interface for managing users by displaying their details and offering action buttons for viewing, editing, and deleting users [10]. It allows administrators to efficiently create, view, edit, and delete users, ensuring smooth user management as shown in Figure 4.

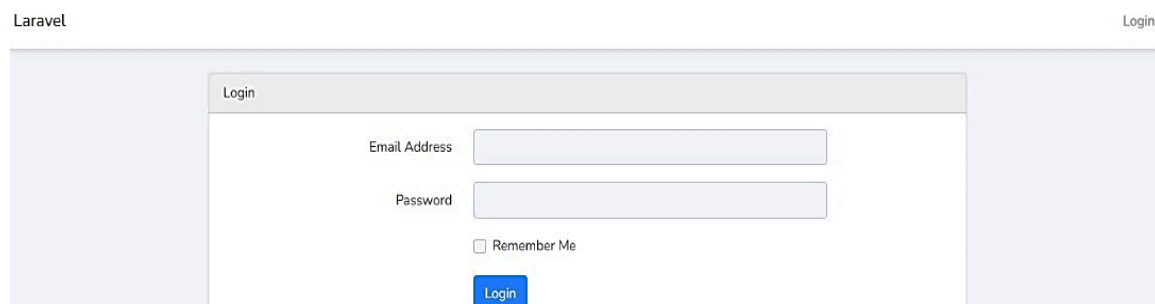


Figure 2. Login page.

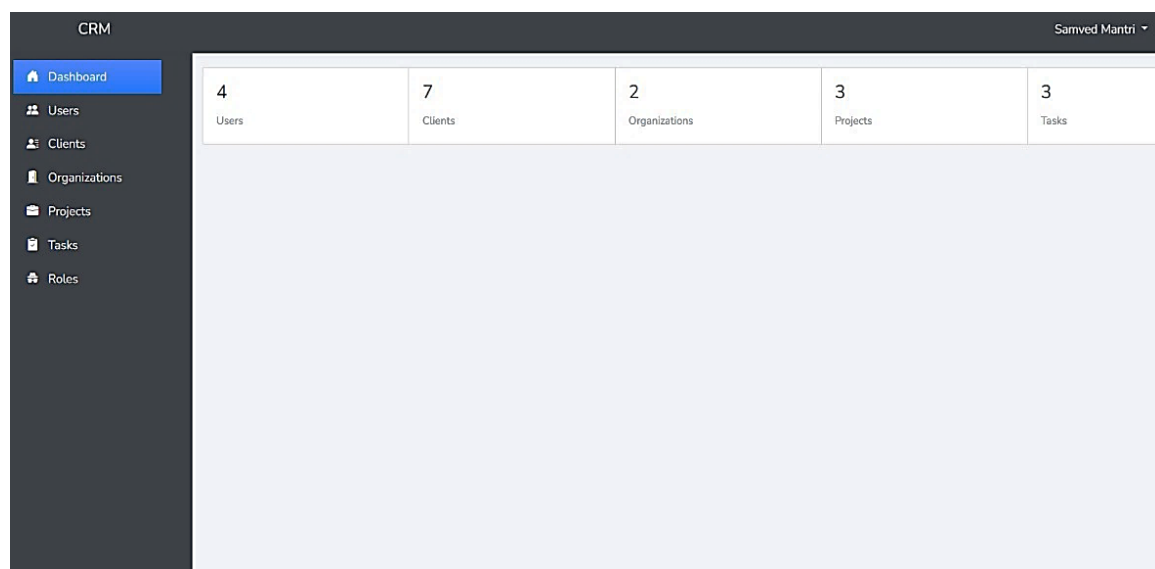
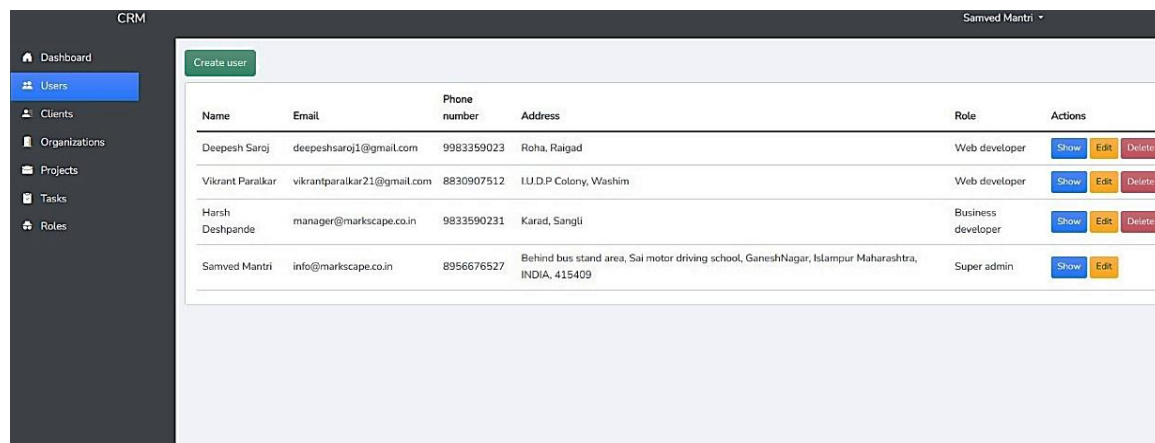
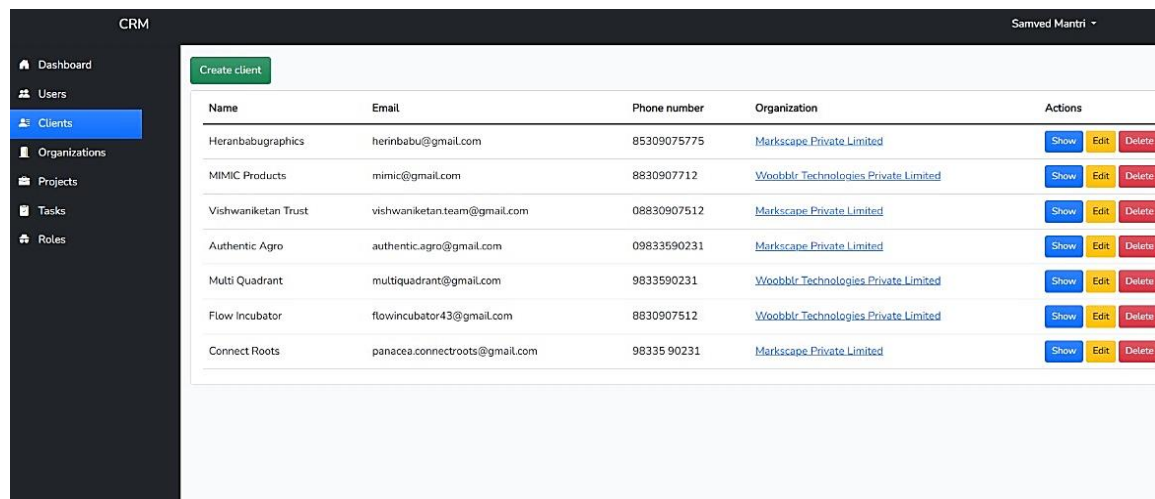


Figure 3. CRM Dashboard.



Name	Email	Phone number	Address	Role	Actions
Deepesh Saroj	deepeshsaroj1@gmail.com	9983359023	Roha, Raigad	Web developer	Show Edit Delete
Vikrant Paralkar	vikrantparalkar21@gmail.com	8830907512	I.U.D.P Colony, Washim	Web developer	Show Edit Delete
Harsh Deshpande	manager@markscape.co.in	9833590231	Karad, Sangli	Business developer	Show Edit Delete
Samved Mantri	info@markscape.co.in	8956676527	Behind bus stand area, Sai motor driving school, GaneshNagar, Islampur Maharashtra, INDIA, 415409	Super admin	Show Edit

Figure 4. User management.



Name	Email	Phone number	Organization	Actions
Heranbabugraphics	herinbabu@gmail.com	85309075775	Markscape Private Limited	Show Edit Delete
MIMIC Products	mimic@gmail.com	8830907712	Wooblr Technologies Private Limited	Show Edit Delete
Vishwaniketan Trust	vishwaniketan.team@gmail.com	08830907512	Markscape Private Limited	Show Edit Delete
Authentic Agro	authentic.agro@gmail.com	09833590231	Markscape Private Limited	Show Edit Delete
Multi Quadrant	multiquadrant@gmail.com	9833590231	Wooblr Technologies Private Limited	Show Edit Delete
Flow Incubator	flowincubator43@gmail.com	8830907512	Wooblr Technologies Private Limited	Show Edit Delete
Connect Roots	panacea.connectroots@gmail.com	98335 90231	Markscape Private Limited	Show Edit Delete

Figure 5. Clients Management.

Clients Management

The Clients Management Page of a CRM system is designed to efficiently manage client details, providing a structured interface where administrators can create, view, edit, and delete client records (Figure 5) [11]. This page enables seamless client record management by offering a well-organized table that displays essential client information, such as names, emails, phone numbers, and associated organizations [11]. The intuitive layout ensures that administrators can easily navigate through client data, make necessary modifications, and maintain accurate records.

Roles Management

Roles Management Page of a CRM system is designed to facilitate the creation and assignment of roles with specific permissions (Figure 6). The interface allows administrators to define a role by entering its name and selecting the necessary permissions from a comprehensive list, including options to create, edit, and delete clients, documents, organizations, projects, tasks, users, and roles [12]. With a well-structured layout, this page ensures efficient role management, enhancing security and access control within the CRM.

Ticketing Management System: Client Login

Shown in Figures 7 and 8, the Client Login Interface of the Ticketing Management System (TMS) enables users to create, manage, and track support tickets efficiently, featuring a user-friendly dashboard with easy navigation to the ticket list and creation options [13]. Clients can submit tickets with details like title, description, priority, category, and attachments, while a filterable ticket list allows tracking of

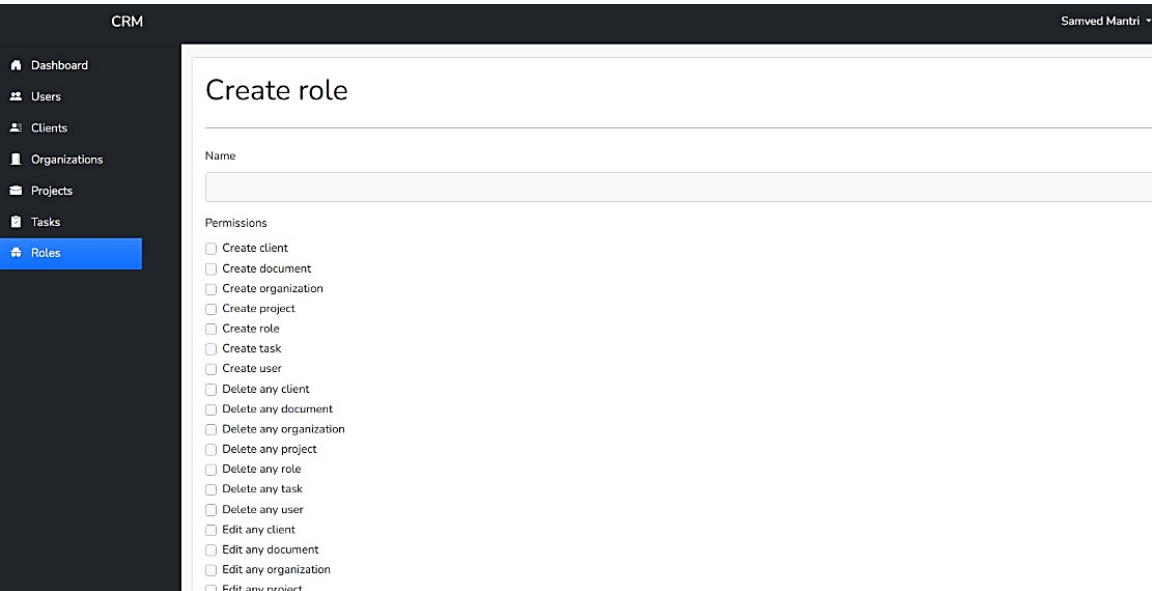


Figure 6. Roles management.

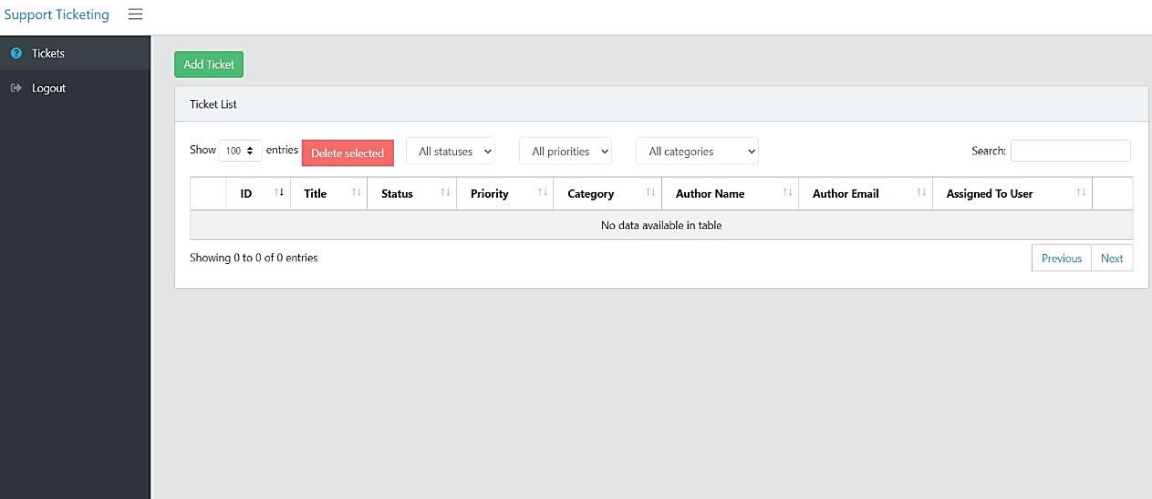


Figure 7. Ask for ticket after client login.

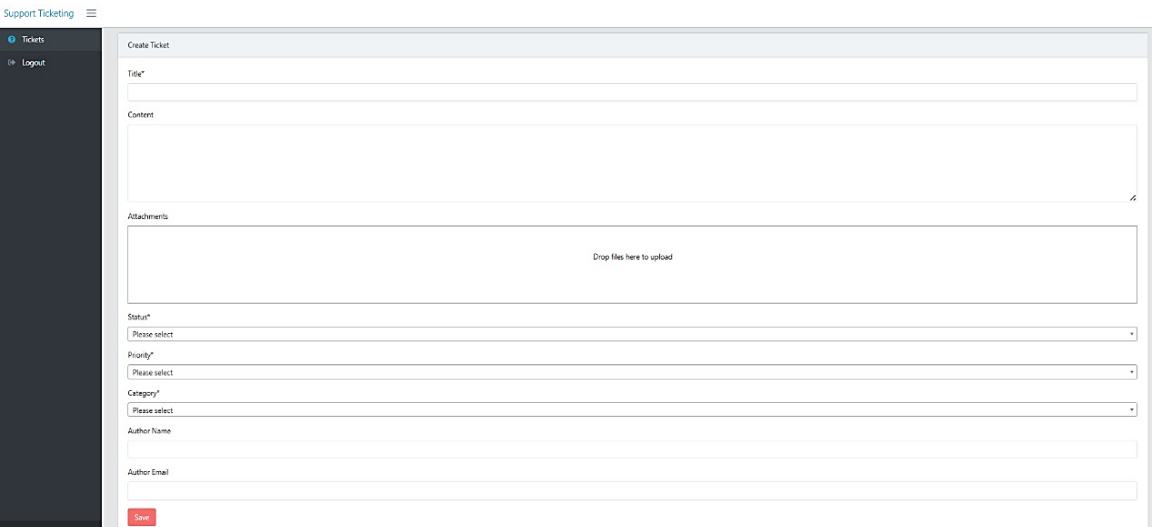


Figure 8. Create ticket after client login.

ticket status, assigned support staff, and real-time updates. Users can also communicate with support teams and manage tickets with options like deleting or updating them, enhancing customer support, transparency, and workflow organization for a smooth and efficient issue-resolution process [14].

By integrating these features, the CRM solution enhances customer interactions, streamlines internal processes, and improves overall business performance. The system's modular design ensures future scalability and adaptability to evolving business needs [15].

CONCLUSION

This project successfully delivers a tailored CRM system designed to meet the unique requirements of the business. By integrating essential features while maintaining scalability and flexibility, the system ensures long-term efficiency and adaptability. Its cost-effective approach minimizes unnecessary expenses while allowing room for future enhancements. The CRM offers a smooth integration process and an intuitive interface, enabling businesses to efficiently manage customer relationships, optimize workflows, and boost overall productivity. Ultimately, this solution provides a solid foundation for sustained business growth and evolving customer relationship strategies.

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