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NexTask: An Agency-Oriented CRM with Integrated Task Management

Mr. Sunny Bhanudas Devlikar
Universal College of Engineering
Vasai, Maharashtra

Mr. Mitesh Prakash Bhoir
Universal College of Engineering
Vasai, Maharashtra

Mr. Suraj Bhusare
Universal College of Engineering
Vasai, Maharashtra

Mr. Krishna Bichkar
Universal College of Engineering
Vasai, Maharashtra

Ms. Silviya D'Monte
Assistant Professor
Department of Computer Engineering
Universal College of Engineering

***Abstract*—This paper presents the design and implementation of NexTask, a centralized Customer Relationship Management (CRM) platform aimed at improving lead management and organizational transparency. The system addresses challenges such as fragmented lead tracking, limited performance visibility, inefficient communication handling, and insufficient access control mechanisms. We propose a unified CRM framework that integrates advanced lead lifecycle management, real-time analytical processing, and structured reporting. The implementation includes lead import and monitoring modules, graphical analytics for performance evaluation, and automated PDF-based report generation. A three-tier Role-Based Access Control (RBAC) architecture, comprising Super Admin, Admin, and User, ensures controlled data access, logical isolation, and secure governance. The system also incorporates Email and WhatsApp communication modules and supports mobile-responsive access for cross-device usability. The proposed model provides a scalable and secure CRM solution designed to enhance operational efficiency, accountability, and data-driven decision-making in multi-level organizational environments.**

***Keywords*—Customer Relationship Management, Lead Management, Role-Based Access Control, Real-Time Analytics, Business Intelligence**

I. Introduction

Customer Relationship Management (CRM) systems have become essential tools for organizations seeking to manage leads, monitor sales performance, and maintain structured communication with clients. As businesses increasingly adopt digital workflows, the demand for centralized and intelligent CRM platforms continues to grow. However, many small and mid-scale organizations still rely on fragmented systems for lead tracking, communication, analytics, and reporting. This fragmentation introduces several operational limitations: (1) Inconsistent lead data management due to decentralized storage, (2) Limited visibility of team performance across hierarchical levels, (3) Restricted analytical capabilities for real-time decision-making, (4) Lack of controlled access mechanisms to protect sensitive business data, and (5) Inefficient communication tracking across multiple platforms. Such challenges reduce organizational transparency, slow down decision-making processes, and affect overall productivity. To address these issues, we propose NexTask, a centralized CRM platform designed to provide structured lead management, hierarchical access control, integrated communication, and real-time analytical reporting within a unified framework. The system implements advanced lead lifecycle management, real-time analytics with graphical visualization, and automated PDF-based analysis reporting to support managerial evaluation. A key architectural component of the proposed system is a Role-Based Access Control (RBAC) model structured across three hierarchical levels: Super Admin, Admin, and User. This design enforces the principle of least privilege, ensuring controlled data accessibility, logical isolation between operational tiers, and secure governance of organizational information. Furthermore, NexTask integrates Email and WhatsApp communication modules to streamline engagement workflows and is developed with a mobile-responsive architecture to ensure accessibility across devices. This paper presents the system architecture, implementation methodology, functional design, and analytical evaluation of NexTask, demonstrating how a unified CRM framework can enhance operational efficiency, improve accountability, and support data-driven decision-making in modern business environments.

II. Review of Literature

Research in CRM platforms and project management systems has grown significantly in recent years. Existing studies focus on customer lifecycle management, workflow optimization, scheduling efficiency, and system transparency. However, limited research addresses the integration of structured lead management with hierarchical project coordination tailored for agency-oriented environments.

The study on AI-enhanced CRM platforms and distributed web architectures by Milev, Ileana, and Petrov explores how

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artificial intelligence can improve personalization and automate customer interactions in CRM environments. Their system demonstrates the potential of AI-driven customer experience management in distributed web systems [1]. However, the study does not address structured project and task management, agency-client workflow coordination, or hierarchical role based operational control required for managing digital agency environments.

Research on blockchain-based project management systems by Rahman et al. focuses on improving information security, transparency, and accountability in project workflows. The proposed Chain Manager framework utilizes blockchain technology, smart contracts, and immutable records to ensure secure data handling and traceability [2]. Despite its strong emphasis on security and transparency, the study does not focus on practical agency oriented CRM workflows such as lead management, structured client-project mapping, and centralized operational monitoring within a unified platform.

A web-based project management system designed for innovation and entrepreneurship activities in academic environments emphasizes collaboration and project tracking among students [3]. Although the system supports the coordination of educational projects effectively, it is not designed to handle professional client–agency workflows or structured role hierarchies commonly required in service-based organizations.

Research addressing project scheduling problems and resource allocation challenges in product development environments highlights methods to improve scheduling efficiency and resource management [4]. Although effective for internal product focused environments, the system does not incorporate client lifecycle management, lead tracking, or structured client project segregation required in agency based CRM platforms.

The work of Brüggemann and Timinger proposes a blockchain-based task planning and management system that integrates document management, task tracking, and smart contract mechanisms to improve transparency and traceability in project workflows [5]. However, the proposed system does not emphasize lead management, client wise project organization, or hierarchical role-based access control tailored for agency environments.

Another study focusing on modern web technologies developed a project management system using the Vue 3.0 framework to improve system performance, modularity, and real-time user interaction [6]. Although the use of advanced front-end frameworks enhances usability and system responsiveness, the study does not deeply address the structured client-project mapping or hierarchical operational control mechanisms required for CRM-oriented agency systems.

Research of integrated project management systems based on computer information technology highlights the importance of combining multiple organizational functions into a centralized management platform [7]. Although beneficial for enterprise IT projects, the system lacks SaaS-oriented features such as user-based access control and clear agency–client separation.

A project management framework focused on time planning and resource allocation aims to enhance scheduling efficiency and optimize project timelines through dynamic resource distribution [8]. While effective for academic and corporate project planning scenarios, the system does not include advanced analytics or role-based access mechanisms required in modern SaaS-driven project management environments.

Finally, research on project management systems for product development emphasizes supporting internal teams in managing product lifecycle and workflow coordination [9]. Although useful for product development processes, the proposed framework does not address agency–client separation, lead management workflows, or centralized administrative oversight across multiple client projects.

Our implementation builds upon the approaches discussed in the literature while addressing their limitations by providing a unified CRM and Task management platform for agencies. Unlike previous solutions that focus either on client management or task tracking, NexTask integrates both functionalities in a single system, enabling streamlined task allocation, role-based access control, and centralized performance reporting. The platform emphasizes simplicity, usability, and modularity, providing an efficient and effective solution to manage multiple clients, projects, and tasks within a single interface.

III. Objectives

The primary objectives of implementing NexTask, a lightweight CRM and project management platform for agencies, are:

- Efficiently manage client and lead information under a single platform.
- Implement role-based access to ensure data security and proper authorization for administrators and users.
- Enable task and project creation, assignment, and monitoring for better project oversight.
- Provide reporting and centralized metrics to monitor team performance and project progress.
- Maintain a modular and scalable system architecture that can accommodate future extensions, such as additional modules or integrations, without disrupting core functionalities.

IV. Methodology

The purpose of the Methodology section is to provide a detailed description of how NexTask, the integrated CRM and project management platform for agencies, is designed and implemented to achieve its objectives. This section explains the overall system structure, the organization of modules and layers, and the stepwise workflow that enables efficient client, project, and task management.

A. System Architecture

The NexTask platform follows a layered architecture that organizes the system into four primary components: Users, Frontend Interface, Application Server, and Database External Services. Each layer has a specific role and communicates

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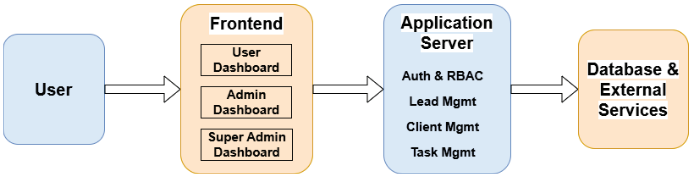

Fig. 1. System Architecture

with other layers through structured interactions, ensuring maintainability, scalability, and secure management of system operations (figure 1)

1. Users Layer: The Users layer represents individuals interacting with the system. It defines three hierarchical roles: User, Admin, and SuperAdmin. Users primarily manage tasks assigned to them and interact with client information. Admins have extended privileges, including user management, task assignment, and monitoring team activities. SuperAdmins possess full administrative control, managing global system settings, overseeing all operations, and enforcing access control policies. Users send requests such as login actions, task updates, and administrative operations to the system.

2. Frontend Layer: The Frontend layer provides the interface for users to interact with the platform via dashboards tailored to their roles. The User Dashboard allows team members to view and update tasks. The Admin Dashboard enables administrative controls such as managing users, assigning tasks, and monitoring progress. The SuperAdmin Dashboard provides full system control for managing administrators, configuring system-level settings, and overseeing all activities. User actions from the frontend are transmitted to the backend through API calls.

3. Application Server Layer: The Application Server forms the core processing unit, handling all business logic and coordinating communication between the frontend and the database. Central to this layer is the API Server, which directs incoming requests to relevant services. Key components include:

- Authentication Role-Based Access Control (RBAC): Verifies user identity and enforces permissions according to roles.
- Lead Management Service: Tracks potential clients, assigns them to users, and monitors progress.
- Client Management Service: Stores client information and ensures tasks are linked to the correct client records.
- Task Management Service: Manages task creation, assignment, tracking, and updates for proper team coordination.

4. Database External Services Layer: This layer provides persistent storage and supports additional functionality. The Database stores structured information for users and roles, leads, clients, tasks, and activity logs. Activity logs facilitate auditing and monitoring of system behavior.

B. System Requirements

This section will provide the user the required specification of the hardware and software components on which the proposed system is to be implemented.

1. Hardware Requirements:

- Processor: Quad-core CPU (Intel i5 or AMD equivalent and above) for handling development tasks.
- RAM: Minimum 8 GB RAM
- Storage: SSD with at least 512 GB
- Network: Reliable internet connection

2. Software Requirements:

- Front-end: HTML, CSS, JavaScript, React
- Backend: PHP, Node.js
- Database: MySQL
- Charting Library: Recharts.js for rendering analytics dashboards and performance charts

V. Results and Discussion

The proposed decentralized wallet system follows a layered architecture consisting of five main layers:

A. System Interface and Implementation

1. Sign-Up / Sign-In Page: Figure 2 shows the Login/Sign Up page acts as the authentication interface of the NexTask platform. It allows users to access the system using their email and password credentials or through Google authentication. After successful authentication, users are redirected to their respective dashboards based on their assigned roles.

2. User Dashboard: Figure 3 shows User Dashboard which represents the CRM system for managing customer leads, providing a clear overview of key metrics such as total leads, hot leads, converted leads, and new leads. It allows users to track and categorize leads based on their status (e.g., new, medium, converted, lost) and value, helping prioritize follow-ups. With a simple interface, users can efficiently manage and import leads, ensuring a streamlined process for maximizing conversion rates and sales performance.

3. Admin Dashboard: Figure 4 shows the Admin Dashboard, which is designed for users with administrative privileges. Admins have the ability to manage and oversee all regular user accounts, track the performance of leads, and view analytics about lead growth trends and sources. It also includes a ”Revenue Projection” graph, helping Admins monitor and forecast potential revenue. Admins have access to features like lead import and detailed reports, but they cannot manage other Admins or Super Admins.

4. Super Admin Dashboard: Figure 5 shows the Super Admin Dashboard, which offers the highest level of control and access. Super Admins can manage and oversee both Admins and Users, having the ability to access and control all system settings and data. This dashboard allows Super Admin to monitor lead performance, sources, and revenue projections across the entire platform. They have the authority to manage other Admin and Users and are responsible for the overall system oversight.

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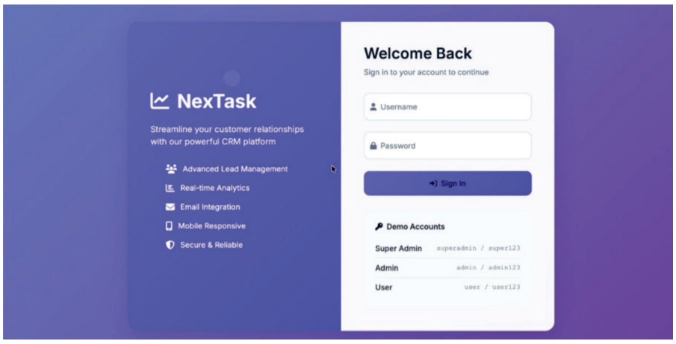

Fig. 2. Sign up/ sign in Page

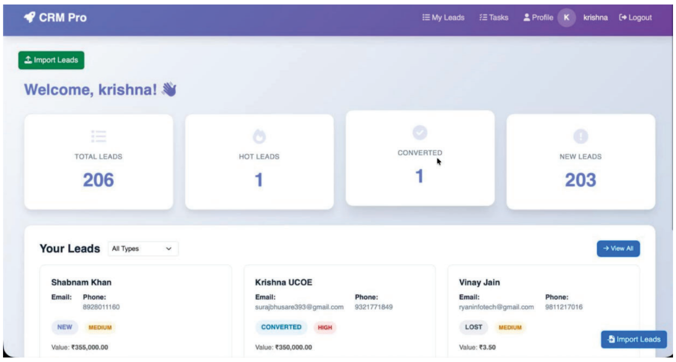

Fig. 3. User Dashboard

5. Task Management: Figure 6 shows the Task Management page, which allows users to create, view, and manage tasks related to their leads. This page displays tasks with details such as title, status (e.g., pending), priority (e.g., low, high), assigned user (e.g., Tarun or superadmin), and due date. Tasks can be updated, edited, or deleted, and users can filter and sort tasks by different criteria, such as status, priority, or due date. The "Create New Task" button enables users to add new tasks for better organization and follow-up, ensuring that lead management processes are efficiently tracked and executed.

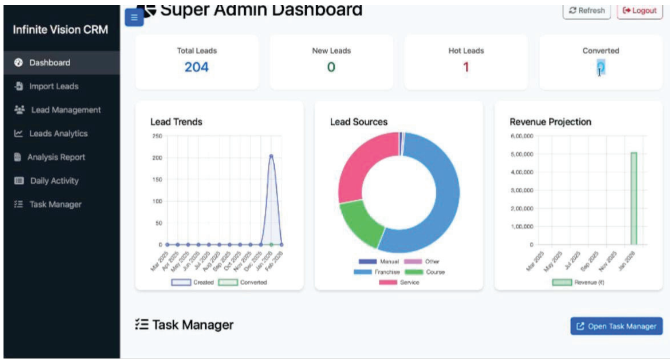

Fig. 5. Super Admin Dashboard

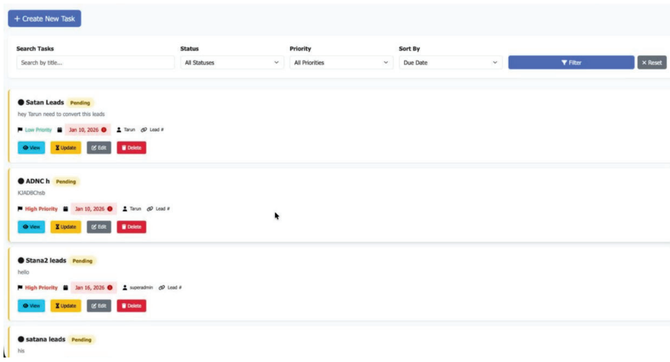

Fig. 6. Task Management

6. Lead Management: Figure 7 shows the Lead Management page, where users can view and manage all leads in the system. The page displays key lead information such as contact details, company, service type, lead status (e.g., new, lost), priority, source, value, and creation date. Users can filter and search for leads based on different criteria, such as lead type and status. The interface allows easy actions, such as editing, updating, or deleting leads. There is also an option to add new leads or import them, ensuring that the lead management process remains organized and efficient.

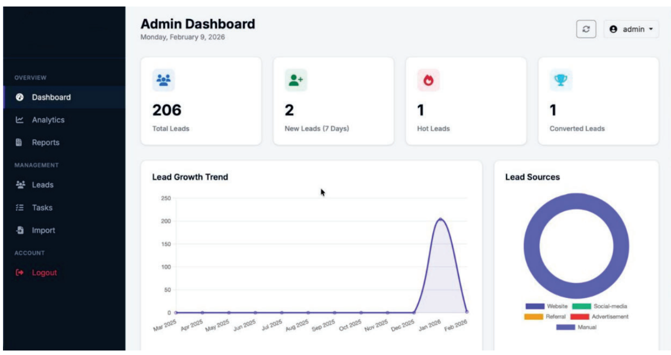

Fig. 4. Admin Dashboard

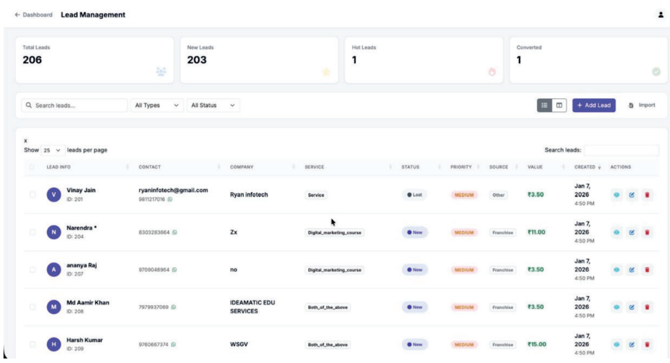

Fig. 7. Lead Management

B. Comparison with Existing Systems

To evaluate the effectiveness of the proposed NexTask platform, a comparison with traditional task management approaches is presented. The comparison highlights improvements in task organization, role-based access control, collaboration, and system accessibility.

TABLE I
COMPARISON BETWEEN EXISTING SYSTEMS AND NEXTASK

Parameter	Existing System	NexTask
Task Management	Limited task tracking with manual updates and coordination	Centralized task creation, assignment, status tracking, and priority management
Lead Management	focus mainly on task tracking and lack integrated lead handling	Integrated lead management with lead creation, assignment, and status tracking
Analytics & Reporting	Reports generated manually with limited insights	Interactive dashboards with charts and project performance insights
Role-Based Access	Some tools provide basic user roles with limited control	Role-based access control with Admin and User permissions
Automation	Mostly manual workflows and updates	Automated task updates, notifications, and integrated workflow tracking
Reliability	Dependent on manual tracking which may lead to inconsistencies	Centralized database ensuring synchronized and reliable data access
Performance	Slower due to manual coordination and fragmented tools	Optimized performance through integrated project and task management modules
Time Efficiency	More time required for manual tracking and reporting	Reduced time due to integrated dashboards and structured task management
Accessibility	Often limited to specific devices or offline tools	Web-based platform accessible from multiple devices and locations
Future Scalability	Difficult to scale for larger teams or agencies	Designed to support scalable multi-user structures

The comparison demonstrates that NexTask provides a more structured and centralized environment for managing tasks and users compared to traditional manual or fragmented systems.

VI. CONCLUSION AND FUTURE WORK

In conclusion, the proposed NexTask platform presents a centralized Customer Relationship Management (CRM) system designed to improve the management of customer leads, client information, and related organizational workflows. The platform integrates lead management, client tracking, and role-based access control within a unified web-based environment, enabling organizations to efficiently organize and monitor customer interactions. By providing structured dashboards and centralized data storage, NexTask enhances visibility into lead progression and client activities, allowing teams to make more informed decisions and maintain better coordination across different roles. The system addresses several limitations of traditional CRM and task management tools, particularly the lack of integrated lead handling and structured access control mechanisms. Through features such as lead tracking, task assignment, and real-time data accessibility, the platform simplifies the process of managing customer relationships while supporting collaboration among team members. By centralizing client data and workflow operations, NexTask helps reduce manual coordination and improves the efficiency of CRM processes. Overall, this study demonstrates how integrating CRM functionalities with structured workflow management can provide a scalable and accessible solution for organizations seeking improved client relationship management. Future enhancements may include advanced analytics for customer behavior insights, integration with external business tools, and extended platform accessibility to further strengthen CRM capabilities.

The proposed NexTask platform can be further extended with additional features to enhance its capabilities and scalability. Future development may include the integration of advanced analytics and machine learning models to analyze customer behavior and predict lead conversion probability. The system can also be expanded with mobile application support to improve accessibility and allow users to manage leads and tasks from portable devices. Furthermore, integration with third-party CRM and communication platforms can improve interoperability and enable organizations to synchronize business data across multiple systems. These enhancements will further strengthen NexTask as a scalable CRM platform capable of supporting efficient client relationship management and collaborative business workflows.

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