

Project Title:

NexusBoard – Collaborative Task and Team Management System

Team Composition:

| Role | Name | Responsibility Area |
|-------------|--------------------|---|
| Team Lead | Abhilash B | Database Design & Integration |
| Team member | G. Anil Kumar | Backend Development (APIs & Business Logic) |
| Team member | H. M. Yashodhara | Database Management & Query Optimization |
| Team member | Karthik R G | Frontend Design & Dashboard Styling |
| Team member | Teju D | Testing, Debugging & Validation |
| Team member | Shivakumar S N | Frontend Functionality & UI Integration |
| Team member | Kamalakanta Behera | Backend User Authentication |
| Team member | Shine S | Real-Time Synchronization |
| Team member | Sachin U | Frontend Enhancements & Navigation Logic |
| Team member | Sudeep R. G | System Testing & Quality Assurance |
| Team member | Santhosh B R | Backend CRUD Operations |
| Team member | Harish | Frontend Styling & Animation |
| Team member | Nagendra N | Responsive Web Layout |
| Team member | Sachin Gowda K S | Board Page Layout & Interface Design |

Identifying the Business Problem

In the modern workplace, teams often struggle with managing multiple projects, maintaining transparency, and ensuring timely communication. Traditional methods like emails and spreadsheets are inefficient for collaborative work and lead to poor task visibility and miscommunication.

The main problem identified was the lack of a unified and interactive digital workspace that allows team members to create, assign, and manage tasks effectively.

NexusBoard was designed to solve these issues by providing a collaborative environment where teams can manage boards, assign roles, monitor progress, and stay connected efficiently.

Project Requirements

Functional Requirements

1. **User Authentication:** Secure registration and login system.
2. **Board Management:** Users can create boards and invite members.
3. **Task Management:** Add, update, and delete tasks with due dates and assigned members.
4. **Real-Time Collaboration:** Changes made by one user update instantly across the system.
5. **Responsive UI:** Works smoothly across mobile, tablet, and desktop devices.

Technical Requirements

- **Frontend:** HTML, CSS, JavaScript
- **Backend:** Python (Flask Framework)
- **Database:** SQLite
- **Real-Time Communication:** Socket.IO
- **Testing:** Manual & Automated Testing

Work Done by Each Team Member

| Member | Contribution |
|------------------|--|
| Abhilash B | Designed and managed the database structure including users, boards, and tasks tables, and handled backend–database integration. |
| G. Anil Kumar | Developed backend routes using Flask for task and board operations, and linked them with database queries. |
| H. M. Yashodhara | Assisted in SQL query design, ensured data consistency, and worked on database maintenance. |
| Karthik R G | Designed frontend dashboards and forms using modern CSS styling and layout design. |

| | |
|--------------------|---|
| Teju D | Conducted testing for backend modules, identifying and resolving functional issues. |
| Shivakumar S N | Worked on user-facing frontend components and form interactions. |
| Kamalakanta Behera | Implemented user authentication modules like registration and login with secure session handling. |
| Shine S | Integrated Socket.IO for real-time synchronization between users across browsers. |
| Sachin U | Improved navigation between pages and optimized frontend |
| Sudeep R. G | Handled quality assurance and end-to-end testing across modules. |
| Santhosh B R | Developed backend CRUD functionalities for tasks and board management. |
| Harish | Enhanced UI with CSS effects, gradients, and transitions for an improved user experience. |
| Nagendra N | Focused on mobile responsiveness and adaptive layouts for multiple devices. |
| Sachin Gowda K S | Created the board page interface and implemented frontend logic for member displays. |

Solving the Business Problem

The NexusBoard project effectively streamlined team collaboration and task tracking. By integrating secure authentication, centralized board creation, and live updates, it eliminated communication gaps and manual tracking issues. Teams could manage their workflow, assign responsibilities, and track completion within one unified system.

This approach improved efficiency, transparency, and accountability across all members of a project team.

Collaboration of Team

The team collaborated efficiently through clear role distribution and version control.

- Used GitHub for code sharing and updates.
- Conducted regular team meetings to assign tasks and track progress.
- Maintained coordination between frontend and backend teams for seamless data flow.
- Testers validated each completed module to ensure system stability.

Team communication and responsibility-sharing played a crucial role in completing the project successfully and on time.

Result and Conclusion

The completed NexusBoard project resulted in a well-structured and interactive platform that supports user authentication, board and task management, and real-time updates.

Users can now efficiently organize team activities, create boards, and manage work without confusion.

The interface is visually appealing, easy to use, and fully responsive across devices.

Conclusion:

NexusBoard successfully met its objectives of enhancing team productivity and collaboration.

The clear division of work, strong teamwork, and consistent effort from all members made the project efficient, scalable, and ready for real-world use.