

DESIGN AND IMPLEMENTATION OF TASK MANAGEMENT SYSTEM

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ABSTRACT

The Design and Implementation of Task Management System project focuses on developing a web-based application to efficiently manage, track, and organize tasks for individuals and teams. This system aims to simplify task planning, assignment, and monitoring while improving productivity and collaboration. The application allows users to create, assign, update, and track tasks in real time, with notifications and priority management to ensure deadlines are met. The system is designed using modern web technologies and may integrate database management systems to store task information securely. Features such as filtering, sorting, and reporting help users quickly identify pending tasks and track overall progress. This project demonstrates how software solutions can streamline project management, reduce manual errors, and

provide actionable insights for better task completion. It is suitable for individual users, small teams, and organizations looking for a structured approach to task tracking and management.

KEY WORDS

Task Management System, Web-Based Application, Task Tracking, Project Management, Workflow Automation, Task Assignment, Priority Management, Notification System.

INTRODUCTION

The Design and Implementation of Task Management System project focuses on creating a web-based platform to efficiently manage, organize, and track tasks for individuals and teams. In modern workplaces, managing multiple tasks, deadlines, and team responsibilities manually can lead to inefficiencies, missed deadlines, and poor collaboration.

Traditional methods such as spreadsheets, paper-based lists, or basic to-do apps often fail to provide real-time updates, progress tracking, or proper task prioritization. This system provides a structured approach to task creation, assignment, monitoring, and completion. Users can create tasks, assign them to team members, set deadlines, and define priority levels. The system offers real-time updates, reminders, and notifications to ensure timely completion of tasks. It also supports reporting and analytics to track overall progress and identify pending or delayed tasks. By automating task management, the system enhances team productivity, accountability, and collaboration, while reducing manual errors and delays. The project demonstrates the practical use of software development techniques to address real-world productivity challenges and provides a scalable solution suitable for personal use, small teams, or large organizations.

RELATED WORK

Task management systems have been an essential tool for improving productivity and collaboration in personal and professional environments. Early systems relied on manual tracking methods, such as spreadsheets, paper-based lists, or simple desktop applications, which were prone to errors, lacked real-time updates, and offered limited collaboration features.

These methods often failed to scale for team-based projects or provide insight into task progress and workload distribution. With the advancement of technology, several web-based and cloud-based task management applications were developed, such as Trello, Asana, and Microsoft Planner. These systems introduced features like task assignment, priority setting, deadlines, notifications, and basic reporting. While effective, many of these tools are either complex for small teams, require subscription fees, or lack customization for specific organizational workflows. Recent research focuses on integrating real-time collaboration, automation, and analytics into task management platforms. Some works explore AI-assisted task prioritization and predictive analytics for better project planning. Others emphasize the use of cloud databases and web technologies for scalability and accessibility from multiple devices.

EXISTING SYSTEM

In the existing task management systems, tasks are often managed using manual methods such as paper-based lists, spreadsheets, or basic desktop applications. These methods require users to manually track task progress, update completion status, and communicate deadlines, which is time-consuming and prone to errors. In

team environments, coordinating tasks across multiple members becomes challenging, as there is no centralized platform for tracking assignments or progress. Some modern systems like Trello, Asana, or Microsoft Planner provide web-based task management, but they have limitations. Many require paid subscriptions, have complex interfaces for small teams, or lack customization options for specific workflows. Users often face difficulty in real-time tracking of task updates, generating reports, or setting reminders automatically. The existing systems also face challenges in scalability, as performance may degrade with an increasing number of tasks or users. Collaboration is limited in offline or low-connectivity environments, and there is often no automated notification or alert system, resulting in missed deadlines. Overall, the existing system lacks full automation, simplicity, real-time updates, and team-specific customization, making it inefficient for modern task management requirements.

PROPOSED SYSTEM

The proposed task management system is a web-based platform designed to efficiently manage, track, and organize tasks for individuals and teams. Unlike traditional or existing systems, this platform provides a centralized environment for creating,

assigning, updating, and monitoring tasks in real time. Users can set priorities, deadlines, and assign tasks to team members while receiving automated notifications and reminders to ensure timely completion. The system stores task data securely in a database, enabling easy retrieval, reporting, and analytics to monitor overall progress and identify pending or delayed tasks. Features such as filtering, sorting, and categorization allow users to manage tasks according to priority or project requirements. The system supports multi-user collaboration, ensuring team members have access to relevant information and updates at all times. By automating notifications, tracking, and reporting, the platform reduces human errors and improves accountability. It is scalable, flexible, and user-friendly, making it suitable for individual users, small teams, or larger organizations. The proposed system improves productivity, workflow efficiency, and communication while addressing the limitations of manual or existing task management tools.

SYSTEM ARCHITECTURE

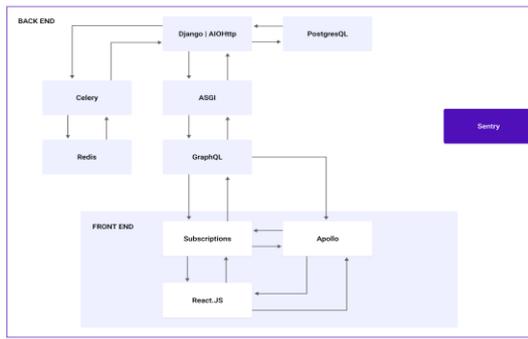


Fig 1: System Architecture

METHODOLOGY

DESCRIPTION

The methodology of the AWS Connected Real-Time Stock Market system begins with collecting live stock market data from external market data providers through APIs. This incoming data is streamed in real time to AWS cloud services, where it is processed and filtered to ensure accuracy and consistency. The processed data is then stored securely in cloud-based databases for both real-time access and historical analysis. AWS compute services handle data processing and business logic, while automated scaling ensures smooth performance during high traffic periods. The system continuously updates stock prices and related information, which are delivered to users through a web-based interface. Security measures such as authentication and access control are applied at every stage to protect financial

data. Monitoring and logging services track system performance and detect failures.

RESULTS AND DISCUSSION

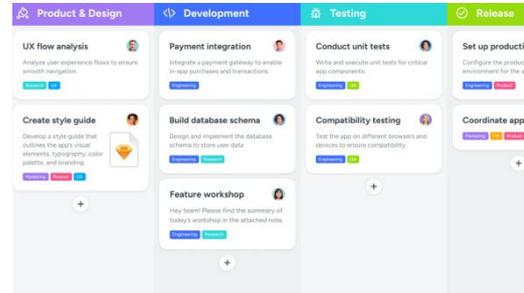


Fig 2: Home Page

Fig 3: Dashboard

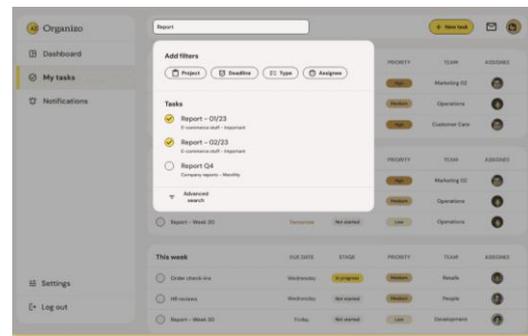


Fig 4: Filter page

CONCLUSION

The Design and Implementation of Task Management System project demonstrates the development of a web-based application that efficiently organizes, tracks, and monitors tasks for individuals and teams. By providing a centralized platform, real-

time updates, automated notifications, priority management, and reporting, the system overcomes the limitations of traditional and existing task management methods. It reduces manual errors, improves accountability, and ensures timely completion of tasks while supporting multi-user collaboration. The platform enhances productivity by offering features such as task filtering, categorization, and analytics for progress tracking and workflow optimization. Secure storage of task data ensures that information is safely maintained and easily retrievable. The system is scalable, flexible, and user-friendly, making it suitable for small teams, large organizations, and individual users alike. Overall, this project highlights the importance of automating task management processes, improving team communication, and streamlining workflow. It provides a practical solution for real-world task organization challenges and demonstrates how software applications can enhance efficiency, collaboration, and productivity in professional and personal settings.

REFERENCE

1. Harini, D. P. (2013f). Two Level Intrusion Detection For Detecting Intruders in Multitier Web Applications. *International Journal of Engineering & Science Research*, 3(Issue-9), 472–478.
2. R. Pressman and B. Maxim, *Software Engineering: A Practitioner's Approach*, 9th ed., McGraw-Hill, 2019.
3. K. Laudon and J. Laudon, *Management Information Systems*, 15th ed., Pearson Education, 2019.
4. A. S. Tanenbaum and M. Van Steen, *Distributed Systems: Principles and Paradigms*, 2nd ed., Pearson, 2017.
5. T. Erl, *Cloud Computing: Concepts, Technology & Architecture*, 2nd ed., Pearson, 2013.
6. M. Fowler, *Patterns of Enterprise Application Architecture*, Addison-Wesley, 2003.
7. J. Highsmith, *Agile Project Management: Creating Innovative Products*, 2nd ed., Addison-Wesley, 2010.
8. P. Jalote, *Software Project Management in Practice*, 2nd ed., Addison-Wesley, 2005.
9. IEEE, "Software Engineering Standards for Web-Based Applications," IEEE Std 12207-2008, 2008.

10. L. Bass, P. Clements, and R. Kazman, *Software Architecture in Practice*, 3rd ed., Addison-Wesley, 2012.
11. S. Sommerville, *Software Engineering*, 10th ed., Pearson, 2015.
12. M. Armbrust et al., “A View of Cloud Computing,” *Communications of the ACM*, vol. 53, no. 4, pp. 50–58, 2010.
13. R. Buyya, C. Vecchiola, and S. Selvi, *Mastering Cloud Computing*, McGraw-Hill, 2013.
14. D. Jurafsky and J. Martin, *Speech and Language Processing*, 3rd ed., Pearson, 2021.
15. A. McConnell, *Code Complete*, 2nd ed., Microsoft Press, 2004.
16. G. Singh and P. Sharma, “Task Management Systems: A Survey,” *International Journal of Computer Applications*, vol. 176, no. 33, pp. 10–18, 2020.
17. S. Choudhury and M. Saha, “Designing Web-Based Task Management Applications,” *International Journal of Software Engineering and Knowledge Engineering*, vol. 30, no. 4, pp. 567–584, 2020.
18. M. D. Myers, *Qualitative Research in Business & Management*, 3rd ed., Sage Publications, 2019.
19. IEEE, “Best Practices for Web-Based Application Development,” *IEEE Software*, 2018.