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Site Craft-Website Design & Development Management System

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ABSTRACT

A web- based project management system plays a significant role in improving coordination, productivity and transparency in software development environment. This paper presents Site crafts, a web-based project management system designed to manage website design and development activities effectively. The project proposed system is developed using Python with Flask framework for backend processing, MySQL for database management and Bootstrap for the responsive user interface. It improves Task Tracking and real-time monitoring.

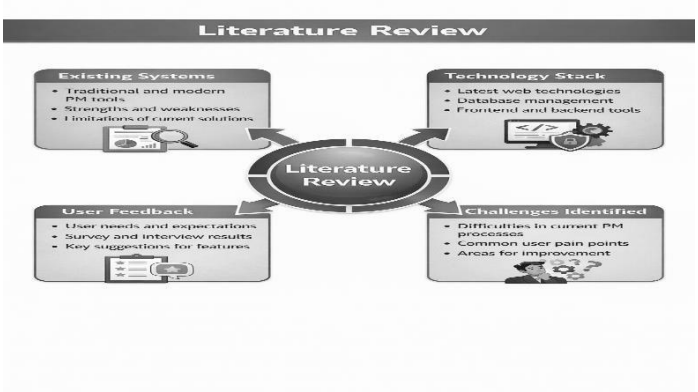
Keywords: Web-based system, Project management, Flask, MySQL, Task Tracking

1. INTRODUCTION

In the digital era, software and web development projects are becoming increasingly complex. Development teams must manage multiple tasks, collaborate with various stakeholders and ensure timely completion of project milestones. Managing these activities manually using spreadsheet, emails, or paper documentation often results in miscommunication, loss of information, and poor coordination among team members. As the numbers of project increase, maintaining transparency and efficiency becomes more challenging. Project management system provides structured methods for planning, organizing, and controlling project activities. Despite the availability of several commercial tools, many existing systems are either expensive, overly complex, or not specifically designed for website development workflows. To address these challenges, The Site Craft system has been developed as a web-based platform that integrates essential project management functions tailored for website design and development projects. The system provides secure user authentication, project tracking, task management, file sharing, and client feedback mechanisms within a unified environment.

2. LITERATURE REVIEW

Over the past decades, several project management tools have been developed to support collaborative software development. Tools such as Trello, Asana and Jira provide digital platforms where teams can organize tasks, manage workflows, and monitor project progress. These tools have significantly improved productivity and coordination among development teams. Trello is a widely used project management tool that provides a visual-board-based interface for organizing task. Jira is another powerful project management system primarily

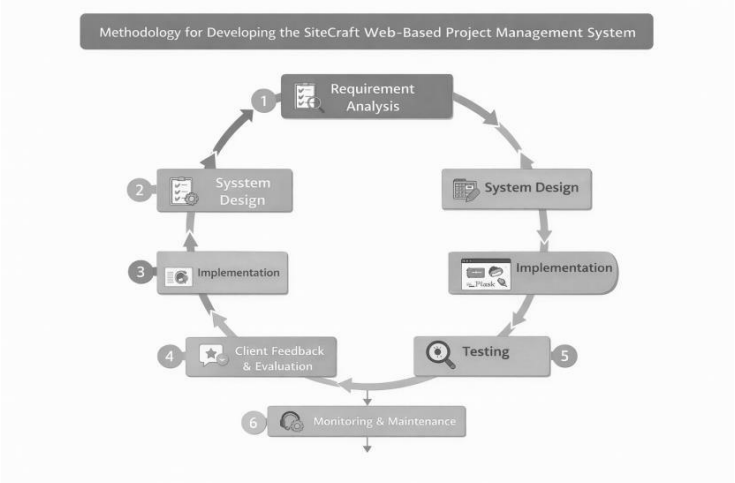


designed for agile software development teams. It provides advanced features such as issues tacking, sprint planning, workflow customization, and performance analytics. Several research studies emphasize the Several research studies emphasize the importance of centralized project management system for improving collaboration and transparency. The literature review highlights the needs for simplified, customizable web-based projects management solution that integrates task tracking, assets storage, and client communication in a single platform. The Site Craft system aims to address this research gap by providing a lightweight yet functional solution designed specifically for development workflow.

3. METHODOLOGY

The Proposed system follows a three-tier architecture consisting of the presentation layer, application layer, and database layer. This architecture ensures modular design, improved scalability, and easier system maintenance. The presentation layer represents the user interface of the system. It developed using HTML, CSS, Bootstrap to create responsive and user-friendly webpages. Through this interface, user can register, login, view projects, update tasks, upload assets, and submit feedback. The application layer is implemented using the flask web framework. Flask is a lightweight python framework that handles request processing, routing, and business logic. It acts as bridge between the user interface and the database. The database layer uses MySQL as the relational database management system. All project related information including user, project, tasks, assets, and feedback records is stored in structured database tables. The use of relational database design ensures data integrity, efficient retrieval, and secure storage of information. The workflow of system includes user authentication, project creations, task assignment, assets management, client feedback collection, and report generation.

The development of the Site Craft Web-based project management System follows a structured and iterative software development lifecycle to ensure efficiency, reliability, scalability. It consists of multiple phases, each contributing to successfully design, implementation and



deployment of the system.

1. Requirement Analysis

In this initial phase, system requirements are collected from stakeholders including administrators, developers, and clients. Functional requirements such as project creation, task assignment, progress tracking, and reporting are identified. Non-functional requirements like performance, security, and usability are also analyzed. This phase ensures a clear understanding of user needs and system objectives.

2. System Design

Based on the requirements, the system architecture and design are developed. This includes database schema design, user interface layout, and system workflows. UML diagrams such as Use Case Diagrams and ER Diagrams are prepared to represent system functionality and data relationships. The design phase acts as a blueprint for the implementation process.

3. Implementation

In this phase, the actual coding of the system is carried out using appropriate technologies such as Flask for backend development, HTML/CSS/JavaScript for frontend design, and MySQL for database management. The system modules, including user management, project handling, and task tracking, are developed and integrated.

4. Testing

The developed system undergoes rigorous testing to identify and fix errors. Various testing methods such asunit testing, integration testing, and system testing are performed. This ensures that all functionalities work correctly and meet the specified requirements. Performance and usability testing are also conducted.

5. Deployment

After successful testing, the system is deployed on a web server or cloud platform. The application is made accessible to users, and necessary configurations are completed. This phase ensures that the system is ready for real-world usage.

6. Client Feedback and Evaluation

Once deployed, feedback is collected from end users and stakeholders. Their suggestions and issues are analyzed to improve system functionality and user experience. This phase helps in identifying real-time challenges and enhancing the system accordingly.

7. Performance Optimization

The system performance is analyzed and optimized to ensure faster response time and efficient resource utilization. Database queries are optimized, and system bottlenecks are resolved. This improves overall system efficiency and scalability.

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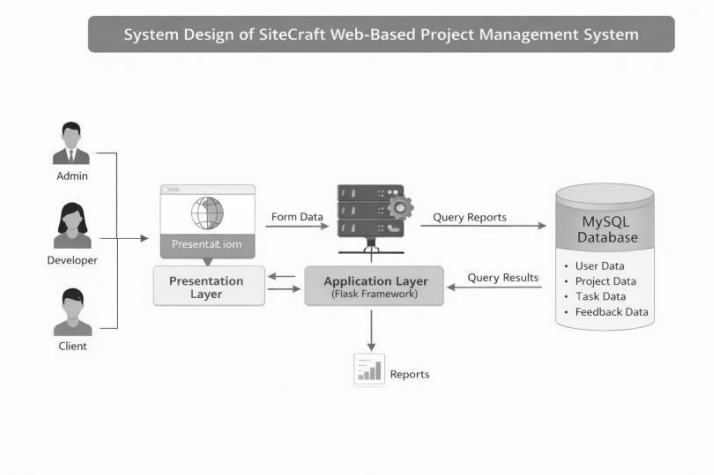
4. SYSTEM DESIGN

The Site Craft system is designed using modular architecture to ensure flexibility and scalability. Each module performs a specific function within the overall system. The user module handles registration, login, and role-based authentications. The project module allows administrators to create projects and manage project details including start dates and deadlines. The task management module allows user to upload project- related files such as documents, images, design mock- ups, and reports. These assets are stored securely in the database and linked to the corresponding projects. This ensure that important resources are easily accessible to authorized user. The feedback modules enable clients to

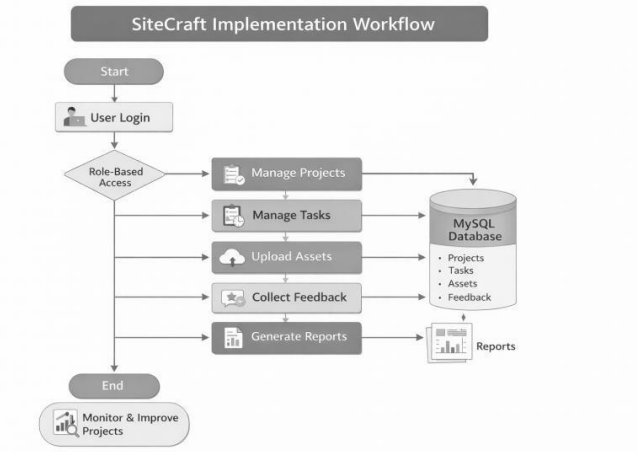


provide comments or suggestions regarding project progress. Feedback is recorded in the database and can be reviewed by project manager. The report generation module provides summarize of project activities including completed tasks, pending tasks, and overall project progress, these reports help project managers evaluate performance and make informal decision.

5. IMPLEMENTATION

The system implementation phase involved translating the system design into a working software application. Python was used as the primary programming language due to its simplicity and strong support for web development frameworks. Flask was selected as the backend framework because of its lightweight architecture and flexibility in building web applications. The frontend interface was developed using HTML, CSS, and Bootstrap. These technologies provide a responsive layout and interactive design that enhance user experience.

The interface allows users to navigate through various modules such as project management, task tracking, and assets uploads. My SQL was used as the database management system for storing applications data. The database schema consists of tables for user, projects, task, assets, and feedback. Each table is connected using primary and foreign keys to maintain relationships between data entities.



During development, individual modules were implemented and tested separately to ensure correct functionality. After module-level development, the entire system was integrated to verify proper interaction between components. The integrated system was then tested using different user scenarios including project creations, task assignment, file uploads, feedback submission.

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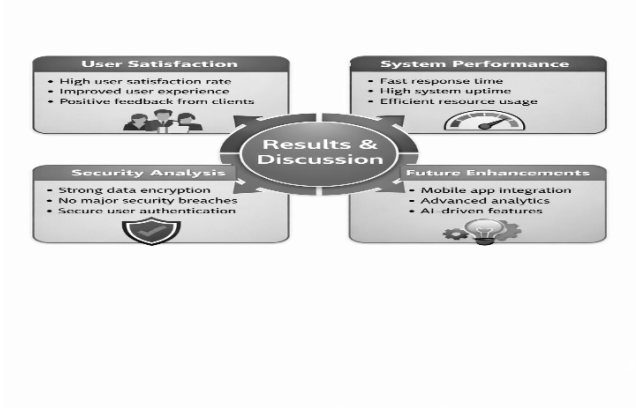
RESULT AND DISCUSSION

The developed system was tested to evaluate its functionality and performance. The testing process included unit testing, integration testing, and system testing. Each module was tested with both valid and invalid inputs to ensures system reliability. The user authentication module successfully verifies login credentials and prevents unauthorized access.

The task assignment module allows administrators to create and manage projects efficiently. The task assignment module correctly links tasks to project and enables users to update task status in real time. The assets upload module allows users to store project-related files securely. Uploaded files are linked to specific projects and can be retrieved when needed.

The feedback module allows clients to submit comments related to project progress. All feedback entries are stored in the database and displayed to administrators for review. Performance testing showed that the system process user request quickly and retrieves data efficiently even with multiple records stored in the database. These results indicates that the proposed system provides a reliable and efficient platform for managing website development projects.



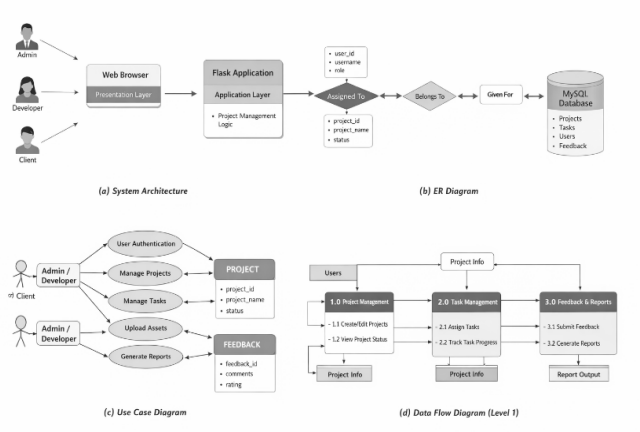
1. Challenges and Limitations

Despite the positive results, some limitations were identified during evaluation. The system currently depends on stable internet connectivity for proper functioning. Additionally, advanced features such as mobile application support and AI-based analytics are not yet implemented. These limitations provide scope for future improvements.

2. Future Enhancements

The system has strong potential for future expansion. Features such as mobile application integration, advanced data, and AI-driven project

recommendations can further enhance system capabilities. Incorporating cloud-based scalability and real-time notification systems will also improve user experience and system performance



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CONCLUSION

This research paper presented Site Craft, a web- based project management system designed to support website design and development workflows. The system integrates essential projects management functionalities including project tracking, task assignment, file sharing, feedback management, and report generation. The use of Flask, MySQL, and bootstrap demonstrates how modern web technologies can be combined to build scalable and user-friendly applications. The system communications between stakeholders, enhances transparency, and reduces manual coordination efforts. Future enhancements may include cloud deployment, integration with external development tools, advanced analytics dashboards, and real-time messaging features. These improvements will further enhance the system's capabilities and support more complex project environments.