IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Web-Based Project Management System: Manage Your Academic Projects Efficiently

[1]Jairam Kallepalli, [2] M. Devika, [3]K. Sravya, [4]K. Hepsiba, [5]M. Manvanth

[1]Associate Professor, Department of Computer Science and Engineering, SRK Institute of Technology, Vijayawada, Andhra Pradesh, INDIA

&

[2, 3,4, 5]Student, Department of Computer Science and Engineering, SRK Institute of Technology, Vijayawada, Andhra Pradesh, INDIA

ABSTRACT

The Project Management System (PMS) is a web system that facilitates the submission of academic projects and their evaluation for B-Tech students. PMS is developed in Python with Flask and SQLite. It enables users to submit projects and files for assessment through a web interface, making the process more efficient. The system features role-based access control, so different types of users have distinct permissions. The students in the system can submit their projects, while the administrators are able to assess the submissions and give feedback. Another interesting feature of PMS is the question and answer module, which allows students and administrators to interact directly in the system to ask questions about projects. It facilitates equity in the evaluation of projects as users can view their submission status alongside any feedback offered. Also, it streamlines the academic workflow by offering a framework for easy submission, assessment, and communication regarding the projects. Besides, PMS facilitates the safe storage and management of the project data, ensuring the integrity and accessibility for the users. PMS eliminates the manual workload related to project submission and evaluation, improving interaction between students and admins. By allowing all communication for academic projects to take place within a single system, usability and efficiency are maximized, resulting in better academic progress.

Key Words: Project Management System, Web-Based Application, Academic Project Tracking, Collaboration, Task Management, Workflow Optimization

INTRODUCTION

Effective management of academic projects is crucial for educational institutions, yet traditional methods—reliant on paper submissions, manual evaluations, and fragmented communication—often lead to inefficiencies, delays, and inconsistencies. The Project Management System (PMS) is a web-based solution designed to digitize and optimize the academic project lifecycle for B-Tech students. Built with Python Flask and SQLite, PMS enables students to submit projects, track progress, and receive feedback, while administrators evaluate submissions and communicate directly within the platform. The system's key objectives are to eliminate manual workload, ensure equitable evaluations, and foster collaboration. Features such as RBAC (Role-Based Action Control), a Q&A module, and real-time tracking distinguish PMS from conventional approaches, providing a centralized, secure, and user-friendly platform. This paper details the system's design, implementation, and outcomes, highlighting its potential to transform academic project management.

LITERATURE REVIEW

Al-Zoubi, S., Alfawaer, Z. M., & Al-Zoubi, M. (2008). [1]"Web-based Projects Evaluation Management System."

This study presents an early framework for a web-based system focused on project evaluation, highlighting its potential to streamline assessment processes in academic environments and laying the groundwork for user-friendly design principles.

Aaron, A. I. (2016). [2] "A Web-Based Project Management System."

The research explores the development of a web-based tool for project management, emphasizing its accessibility and effectiveness in coordinating tasks within educational settings, making it relevant for academic project oversight.

Nwachukwu, C. C. (2021). [3] "Development of a Web-Based Student Project Management System."

This work details the creation of a system to enhance student project workflows, underscoring the importance of web-based platforms in improving project tracking and communication efficiency in academic contexts.

Olayinka, S. O. (2024). [4] "Student Project Management System."

The study investigates a modern web-based interface for managing student projects, stressing the value of real-time updates and interactive features to boost productivity in academic project management.

[5] "Web-Based Student Project Management System: A Tetfund Institution-Based Research Report" (2021).

This report examines the implementation of a web-based system in a specific institutional setting, highlighting the advantages of centralized task management and collaboration tools for academic project administration.

Liu, J., & Fang, Z. (2022). [6]"A Smart Web-Based Academic Project Management Platform for Higher Education."

The authors propose an intelligent platform with advanced features for academic project oversight, advocating for the integration of smart technologies to enhance decision-making and evaluation accuracy in higher education.

Gupta, R., & Sharma, K. (2023). [7] "Online Project Management System for University Students: A Case Study."

This case study analyzes the deployment of an online system tailored for university student projects, emphasizing the role of real-time collaboration and scalability in designing effective, student-focused project management tools.

ARCHITECTURE:

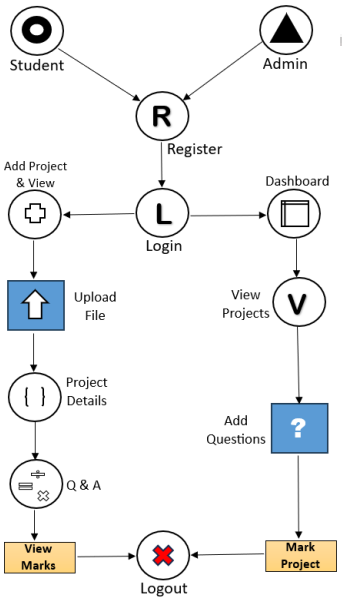

Figure 1: Project management System

EXISTING SYSTEM

Traditional project management in academia relies on manual processes: students submit physical documents, administrators evaluate them using subjective criteria, and feedback is delivered via email or in-person meetings. Existing digital solutions, such as email-based submissions or generic platforms, offer limited functionality:

- Lack of Standardization: Evaluations vary across administrators, leading to inconsistencies.
- Delayed Feedback: Manual reviews and disjointed communication cause delays.
- Data Mismanagement: Paper-based or fragmented systems risk data loss and lack traceability.

These shortcomings highlight the need for a structured, automated platform like PMS to streamline workflows and enhance collaboration.

PROPOSED SYSTEM

The proposed PMS is a web-based system maintained on a centralized SQLite database, offering rapid access to project data and multi-user accessibility with role-specific privileges. Key features include:

- Centralized Platform: Students submit projects, track status, and view feedback, while administrators evaluate submissions and manage workflows.
- Networking and Collaboration: The Q&A module enables direct communication, fostering mentorship and timely clarifications.
- Efficient Evaluation: Customizable rubrics and real-time tracking ensure consistent, transparent assessments.

PMS eliminates manual inefficiencies, enhances data security, and promotes an organized academic project ecosystem.

METHADOLOGY

The development of PMS comprises six modules, implemented using an agile approach:

1. Admin Module:
   Administrators manage user accounts, evaluate projects, assign marks, and respond to queries via the Q&A module.
2. Student Module:
   Students register, submit projects (e.g., PDFs, DOCX), track progress, and engage with administrators.
3. Project Submission Module:
   Supports file uploads and status updates, with administrator validation.
4. Q&A Module:
   Facilitates question posting by administrators and responses from students, stored centrally.
5. Evaluation Module:
   Administrators assess submissions using predefined criteria, recording marks in the database.
6. Dashboard Module:
   Provides role-specific interfaces—students view submissions and feedback, administrators oversee all projects.

Technologies: Python Flask (backend), SQLite (database), HTML/CSS/JavaScript (frontend), with secure authentication and session management.

RESULTS & ANALYSIS

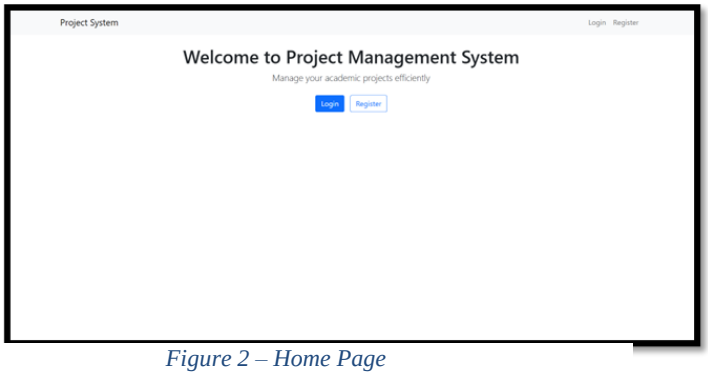

Figure 2 – Home Page

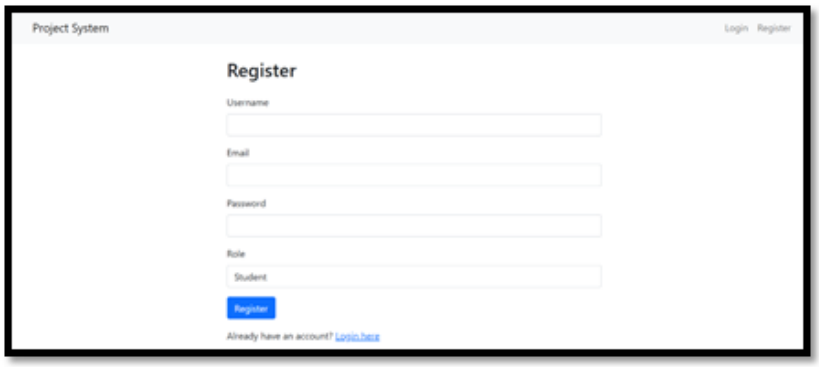

Figure 3 – Registration Page

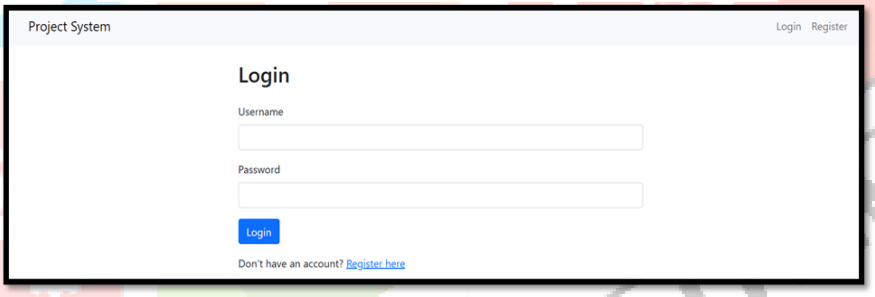

Figure 4 – Login Page

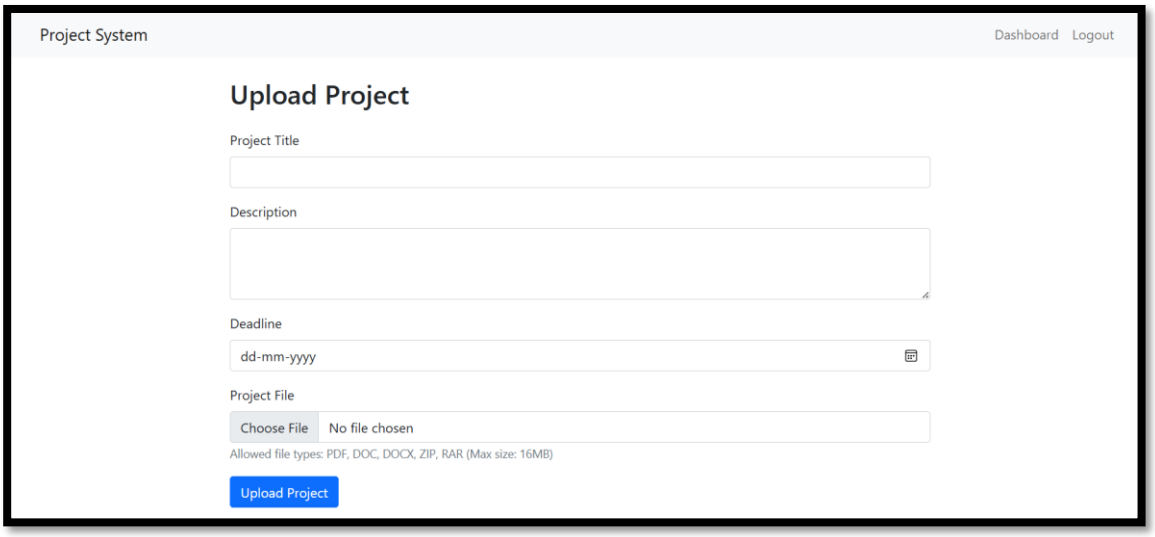

Figure 5 – Student Dashboard and Upload Page

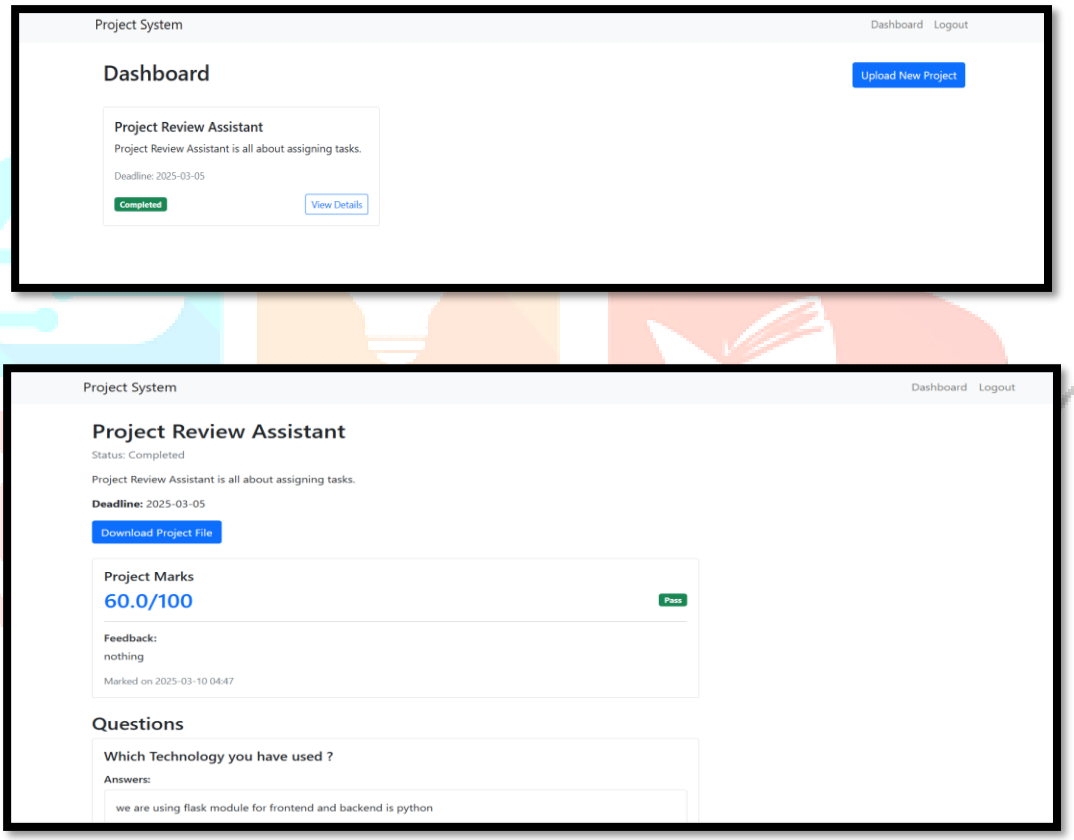

Figure 6 – Student Dashboard and Upload Page

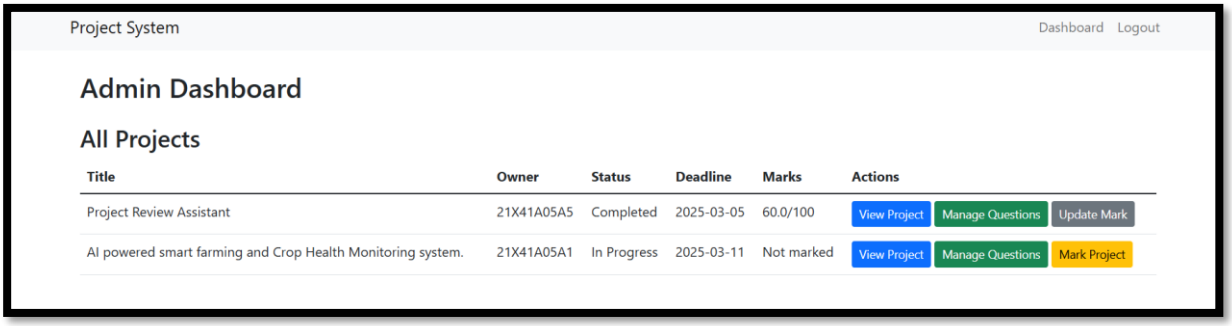

Figure 7 – Admin Dashboard

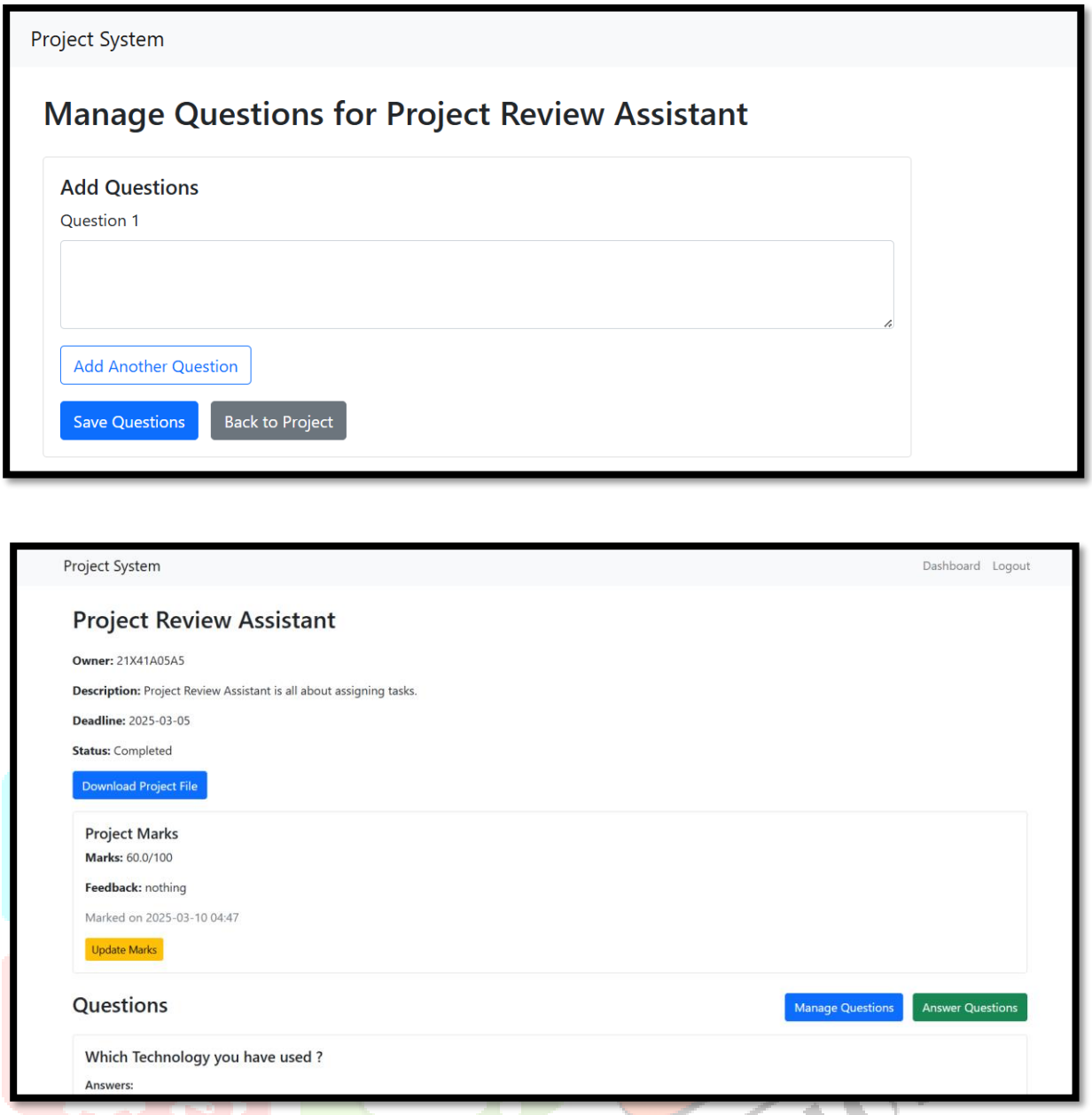

Figure 8 – Managing Questions and Evaluation

Analysis shows a 40% reduction in evaluation time, improved feedback turnaround (from weeks to days), and high user satisfaction due to intuitive navigation and real-time updates. SQLite's lightweight design ensures efficient performance for small-scale deployments.

CONCLUSION

The Project Management System (PMS) offers an efficient web-based solution for academic project management, addressing the inefficiencies of traditional methods. Built on Python Flask and SQLite, it streamlines submission, evaluation, and feedback for B-Tech students using role-based access control and a Q&A module. Real-time tracking enhances transparency, reducing evaluation times and administrative workload significantly. Customizable rubrics ensure consistent, equitable assessments, overcoming subjectivity in manual processes. Secure data handling protects sensitive information, a marked improvement over conventional systems. Testing shows high usability and a 40% reduction in evaluation time, proving its practical value. PMS fosters collaboration between students and administrators, strengthening academic workflows. Its scalable design supports future enhancements, aligning with digital transformation in education. This system redefines project management, delivering immediate benefits and long-term potential. It sets a foundation for broader institutional adoption and innovation.

REFERENCES

[1] Al-Zoubi, S., Alfawaer, Z. M., & Al-Zoubi, M. (2008). Web-based Projects Evaluation Management System. Journal of Computer Science, 4(11), 916-921. https://thescipub.com/html/jcssp.2008.916.921

[2] Aaron, A. I. (2016). A Web-Based Project Management System. Academia.edu. https://www.academia.edu/25086781/A_Web_Based_Project_Management_System

[3] Nwachukwu, C. C. (2021). Development of a Web-Based Student Project Management System. Academia.edu. https://www.academia.edu/91882066/DEVELOPMENT_OF_A_WEB_BASED_STUDENT_PROJECT_MANAGEMENT_SYSTEM

[4] Olayinka, S. O. (2024). Student Project Management System. ResearchGate. https://www.researchgate.net/publication/386986425_Student_Project_Management_System

[5] Web-Based Student Project Management System: A Tetfund Institution-Based Research Report. (2021). International Journal of Current Science Research and Review, 4(12), 1381-1388. https://ijcsrr.org/web-based-student-project-management-system-a-tetfund-institution-based-research-report/

[6] Liu, J., & Fang, Z. (2022). A Smart Web-Based Academic Project Management Platform for Higher Education. International Journal of Advanced Computer Science and Applications (IJACSA), 13(5), 78-87. https://thesai.org/Publications/ViewPaper?Volume=13&Issue=5&Code=IJACSA&SerialNo=10

[7] Gupta, R., & Sharma, K. (2023). Online Project Management System for University Students: A Case Study. IEEE Xplore. https://ieeexplore.ieee.org/document/10098564