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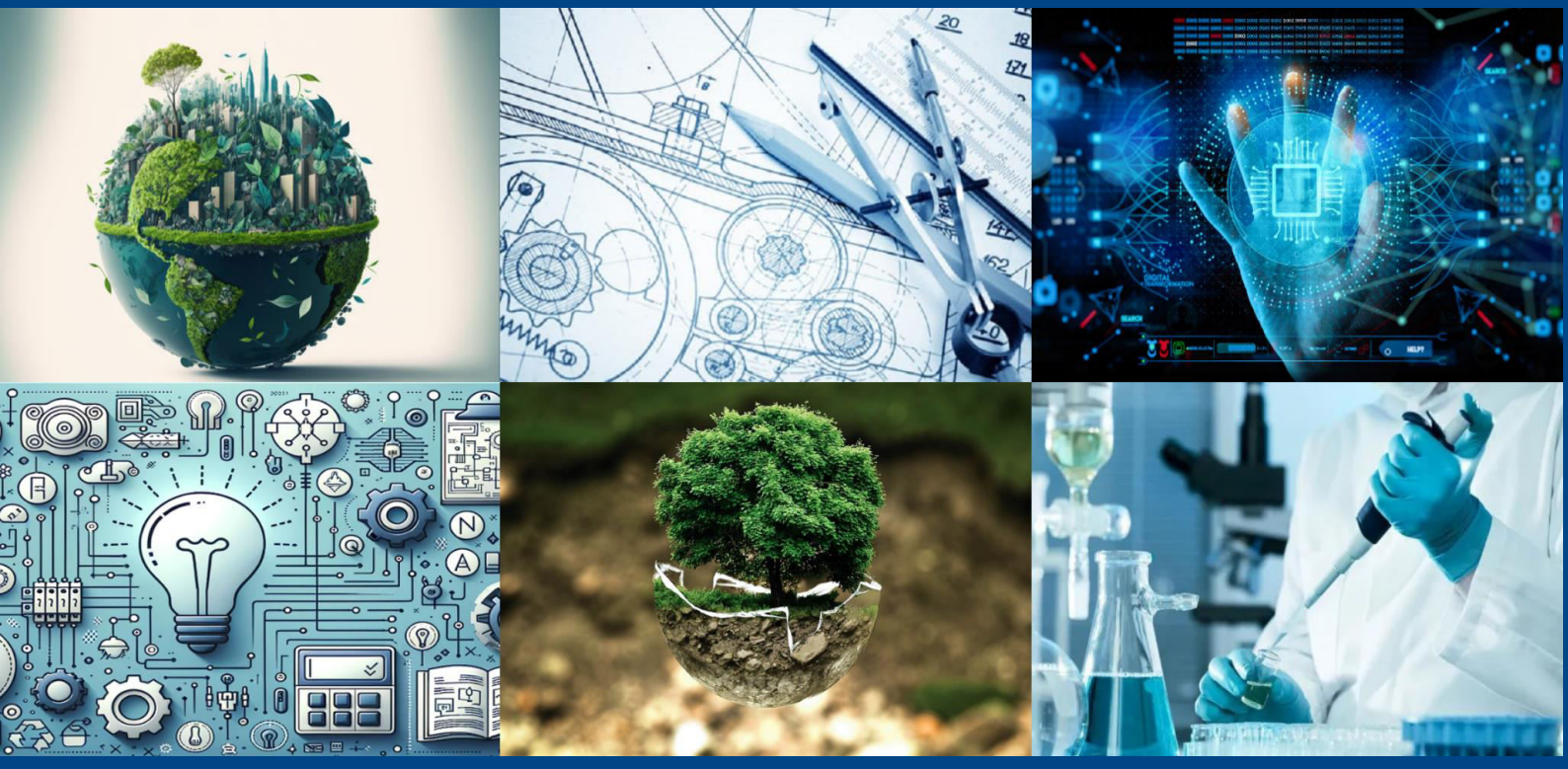

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FYP Manager: Simplifying Project Allocation and Supervision

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ABSTRACT: Managing and controlling final year projects for students through traditional methods can be a time-consuming and cumbersome process for both students and faculty members. This project addresses these challenges by developing a comprehensive, web-based system designed to automate and optimize the management of student projects from initiation to completion. The system facilitates the entire project life cycle, starting with project title recommendations based on student preferences and faculty expertise. It also incorporates a prioritization mechanism for both project titles and student teams, ensuring efficient matching of students to suitable projects based on their skills and interests. The platform's key functionalities include project and team management, progress tracking, grading, and detailed report generation, ensuring that all stakeholders can monitor the development of projects in real time. One of the standout features of the system is its deduplication functionality, which automatically identifies and removes redundant or overlapping project proposals, thus streamlining the project selection and allocation process. This significantly reduces administrative workload, allowing faculty members and project coordinators to focus on more strategic tasks. Furthermore, the system enables students to submit their project preferences, view available projects, and communicate directly with project advisors. Faculty members, including internal guides, HODs, and project coordinators, benefit from real-time access to project progress reports, team performance, and project scoring, ensuring better decision-making and more timely interventions when necessary. The web application enhances collaboration between students, faculty advisors, and department heads, promoting a more organized, transparent, and efficient project management experience. By formalizing the project allocation and monitoring process, the system ensures consistency, reduces human error, and creates a professional environment for final year project management.

KEYWORDS: Final Year Project (FYP),Project Allocation,Project Tracking,Web-based System.

I. INTRODUCTION

The final year project is the culmination of the degree – it gives students a chance to demonstrate all they have learned. The project module is very different from other modules. Although students are supervised, the onus is on the student to define the problem boundaries, to investigate possible solutions, and to present the results in writing, verbally and in action. Apart from an initial briefing session there are no formal lectures to attend. Teaching consists of regular individual/small group meetings to discuss progress. For assessment, students submit reports of their progress and final results, and give in-person presentations and demonstrations of their work.

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The Final Year Project (FYP) holds paramount importance as it serves as a culmination of academic learning, allowing students to integrate theoretical knowledge with real-world application. This pivotal undertaking provides students with an opportunity to showcase their competence by independently conducting research, analyzing information, and presenting well-founded solutions to practical challenges. Beyond academic assessments, the FYP plays a crucial role in skill development, nurturing capabilities such as critical thinking, problem-solving, project management, and effective communication—skills that are not only vital in academic settings but also highly transferable to professional environments. Moreover, the FYP serves as a practical preparation for the workforce, mirroring the dynamics of real-world projects and fostering a work ethic, time management skills, and the ability to collaborate within a team. This comprehensive experience contributes to the development of a valuable portfolio that students can showcase to potential employers or graduate schools. Additionally, the FYP allows students to explore specific areas of interest within their chosen field, aiding in the refinement of career goals and identification of areas for specialization. Undertaking an FYP enhances the overall learning experience by encouraging students to delve deeper into topics of personal interest, fostering intellectual curiosity, and instilling a commitment to lifelong learning. For those considering postgraduate studies, a well-executed FYP serves as a testament to their ability to conduct independent research—a key requirement for advanced degree programs. In essence, the Final Year Project is not merely an academic requirement; it is a transformative experience that prepares students for the challenges and opportunities that lie ahead in their professional journey.

II. SYSTEM ANALYSIS

EXISTING SYSTEM

The traditional system of Final Year Project (FYP) processing and management typically involves manual and paper-based procedures. In this conventional approach:

- **Project Proposal Submission**

In the traditional system, students are required to physically submit hard copies of their project proposals to the respective department offices. This involves printing multiple copies and delivering them in person.

- **Title Approval**

Faculty members conduct a manual review of the printed project proposals. They provide handwritten feedback on the hard copies and make decisions regarding the approval of project titles based on the physical documents.

- **Mentor Assignment**

The assignment of mentors is typically done through in-person meetings with the Head of Departments (HODs). This manual process relies on paperwork and may involve considerations such as faculty availability and expertise.

- **Document Sharing**

Document sharing between students and faculty is done either physically, by handing in printed copies, or through email. This often results in scattered file management, making it challenging to maintain a centralized repository of project-related documents.

- **Review Process**

During project reviews, students present physical copies of their projects to faculty members. Feedback is given on printed evaluation sheets, and discussions take place in person.

- **Attendance Tracking**

Faculty members manually track student attendance during project review sessions using physical attendance sheets. This process requires manual entry and may be prone to errors.

- **Grading and Approval**

Grading of projects is carried out manually by faculty members. They provide feedback on hard copies, assign grades, and physically sign off on approval forms, contributing to a time-consuming process.

III. PROJECT DETAILS

PROJECT DESCRIPTION

The envisioned system for the Final Year Project (FYP) Web App introduces a comprehensive and streamlined approach to project management, addressing the limitations of the traditional system. In this proposed system, students will transition to a digital project proposal submission process, eliminating the need for physical paperwork. The system incorporates automated title approval, leveraging advanced algorithms to facilitate efficient and unbiased

review processes. Notably, deduplication functionality is integrated into the approval system, ensuring the elimination of redundant or overlapping project proposals and promoting a fair and diverse distribution of project topics. Mentor assignment becomes more efficient with the introduction of an online platform that allows Head of Departments (HoDs) to make informed decisions based on faculty expertise. A centralized document management system replaces physical submissions, providing a digital repository for project-related documents, reducing clutter, and improving organization. Project reviews move to an online format, offering increased accessibility and removing geographical constraints. Attendance tracking during these sessions is automated, enhancing accuracy and simplifying record-keeping. The grading and approval processes become more streamlined as faculty members can digitally assess and approve projects, expediting the overall process. A robust notification system ensures timely communication, keeping stakeholders informed about updates, deadlines, and crucial events. Secure digital signatures are integrated, adding an extra layer of authenticity to approvals and acknowledgments within the system. Comprehensive reporting tools generate detailed insights into project allocations, reviews, and overall progress, facilitating data-driven decision-making for administrators. The user-friendly interface ensures ease of use for all stakeholders, fostering enhanced collaboration through improved communication tools. Increased accessibility is a key feature, allowing stakeholders to access project information remotely, providing flexibility and convenience. Stringent data security measures are implemented to address concerns about unauthorized access and protect sensitive information, ensuring the integrity of the system. Moreover, the proposed system aligns with environmental sustainability goals by transitioning to a paperless environment, contributing to eco-friendly practices. In summary, the proposed FYP Web App system is designed to revolutionize project management, offering efficiency, transparency, and a user-centric experience for students, faculty, and administrators alike.

IV. ONLINE REVIEW/OFFLINE REVIEW

This integrated Online/Offline Review module is designed to accommodate various preferences, ensuring a flexible and effective project review process for both students and faculty members.

Integrated Scheduling

The module incorporates a shared calendar system that seamlessly integrates scheduling for both online and offline review sessions, ensuring efficient coordination. Automated notifications for scheduled reviews minimize the risk of missed appointments, enhancing overall organization.

Online Review

Students can seamlessly present their projects using digital tools, allowing for dynamic and engaging presentations that transcend geographical constraints. Virtual discussions facilitate real-time interactions between students and faculty members. Document sharing electronically streamlines the review process, ensuring easy access and collaboration.

Offline Review

For those who prefer or require a physical setting, students can opt for in-person project presentations, maintaining the traditional face-to-face approach. Offline reviews allow for traditional face-to-face discussions, preserving the interpersonal communication aspect of the review process. Students also have the option to submit physical copies of project materials during offline reviews, accommodating diverse preferences.

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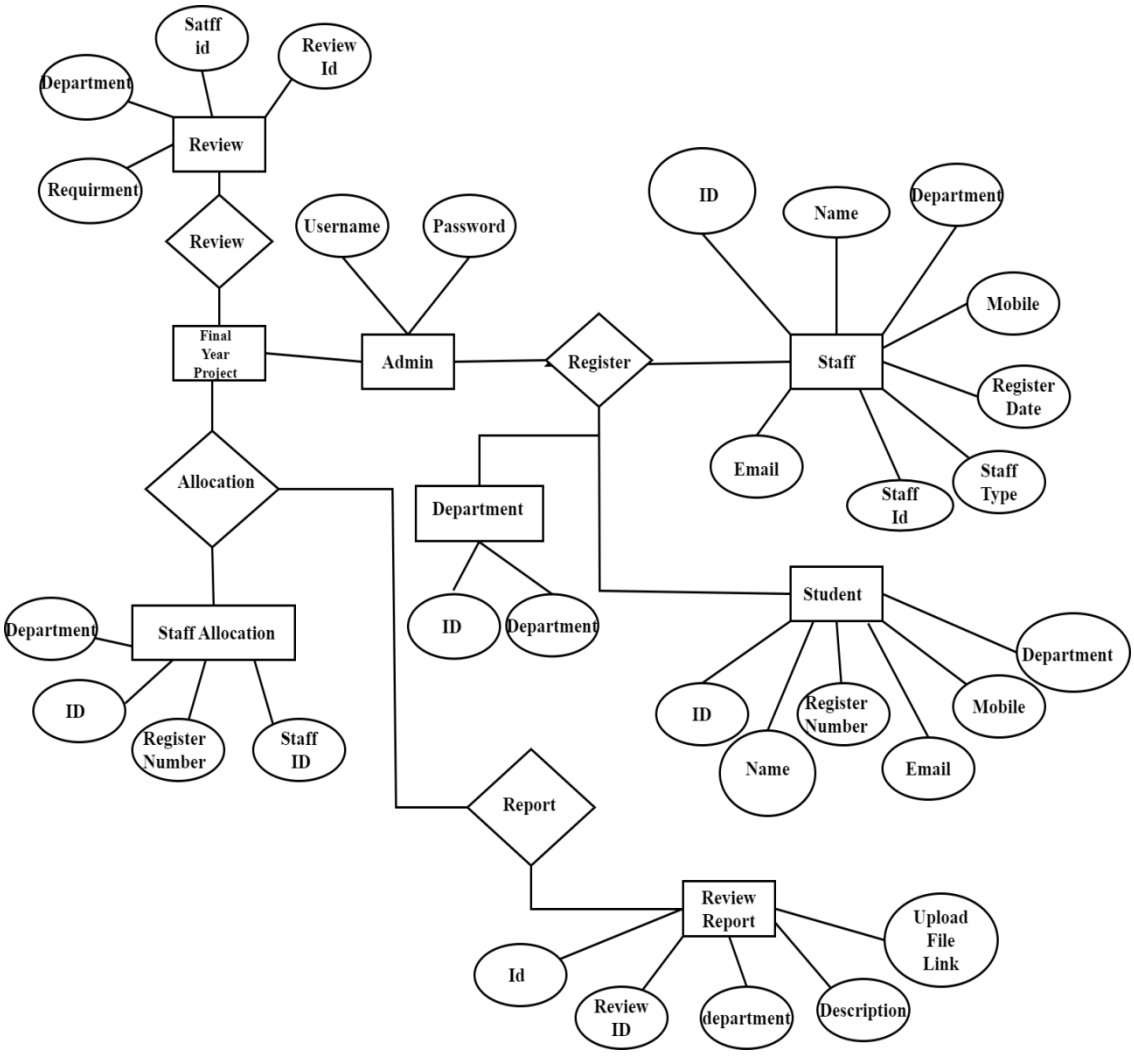
V. ER DIAGRAM



VI. TITLE PROCESSING AND DEDUPLICATION

This module will automate the handling of project title submissions, ensuring a systematic review process. It should include algorithms to identify and eliminate duplicate or similar project titles, streamlining the project selection and allocation process. This feature helps prevent redundancy and ensures a fair and diverse distribution of project topics among students and staff members. The module should provide notifications to users about the status of their submitted titles, whether approved or rejected, and offer insights into the deduplication process.

VII. DIGITAL SIGNATURE INTEGRATION

The Digital Signature Integration module is designed to enhance the authenticity and security of approvals and acknowledgments within the FYP (Final Year Project) Web App. This module seamlessly incorporates digital signature capabilities into the approval processes, ensuring the integrity of critical actions performed by users such as project title approvals and review assessments.

- **Signature Creation:** Users can create their unique digital signatures within the system, adding an extra layer of identity verification.

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- **Document Signing:** When approving project titles, review assessments, or other critical documents, users can apply their digital signatures directly within the system.

VIII. TYPES OF TESTING

When it comes to delivering a successful project, software testing is a very important part of it. There are different types of software testing and choosing one of them for your project depends on factors like budget, project requirements, expertise, timeline, and suitability. This huge domain of testing is divided into two main parts and they are

Functional Testing

Functional testing is known as a popular type of black-box testing and quality assurance (QA) process that builds its test cases as per the software component's specifications. In this type of testing, the software tester checks the functions of the software by feeding them input and then verifying the output. It can be conducted when the testers want to figure out the compliance of software or component with a particular type of functional requirement.

Basically, functional testing specifies what the software solution does and because of being a type of black-box testing, it checks the software's functionality without knowing how the internal programs of the system work. This means that testers don't have to be aware of the software development programming languages. In addition to this, functional testing doesn't actually mean that the team is testing a method or a function. It means that the functionality of the entire system is being checked or we can say that it is testing program behavior.

Some of the major types of functional testing are –

- Integration Testing – Keeping all the moving parts of a program in sync.
- Unit Testing – Making sure each piece of software works as it should. As the smallest part of an application that can be tested, a unit is a must.
- Smoke – Performed at an initial stage of development phase to ensure the most important functions of the software are working correctly.
- Localization – Verifies software behavior, accuracy, and suitability for special region and location.
- UAT (User Acceptance Testing) – Performed by end-user or the client to accept the software system before it is released.
- Interoperability.

Non-Functional Testing

Another type of software testing is non-functional testing. It is a process where the software engineers check the non-functional requirements of the system. This type of testing includes checking the way a system operates. It is completely opposite to functional testing, which checks the software against functional requirements that specifies the system's functions and components.

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Some of the major types of non-functional testing are –

- Performance – Analysing the software's response to a variety of stressors. Performance under realistic load circumstances may be evaluated via load testing, for instance.
- Scalability – It is a type of load testing that measures the software's ability to scale down or up as a reaction to the increasing number of users.
- Load Testing – It allows you to determine a system's performance under real-life load conditions.
- Endurance – This type of testing helps you to determine how well a software can handle prolonged usage over a long period of time.
- Volume – It is a type of testing which tests a software with a certain amount of data.
- Usability Testing Process – Assessing a user's competence in navigating a website or using a software product.

IX.TEST REPORT

Introduction

The Final Year Project Management System underwent a comprehensive testing process to ensure its functionality, reliability, and performance. This Test Report provides an overview of the testing activities conducted, the objectives of the testing, the scope of testing, the environment used, the results obtained, and the overall conclusions drawn from the testing process.

Test Objective

The primary objectives of the testing process were to:

- Validate the functionalities of the Final Year Project Management System.
- Identify and rectify any defects or issues in the system.
- Ensure the system meets the specified requirements.
- Assess the system's performance, reliability, and security.

Test Scope

The testing scope covered the following aspects of the Final Year Project Management System:

- Functional Testing: Validating each functional requirement of the system.
- Performance Testing: Assessing the system's responsiveness and scalability.
- Security Testing: Ensuring the system's protection against unauthorized access.
- Usability Testing: Evaluating the system's user-friendliness.
- Integration Testing: Verifying the seamless integration of system modules.

Test Environment

The testing was conducted in the following environment:

- **Operating System:** Windows 10
- **Browsers:** Google Chrome, Mozilla Firefox
- **Devices:** Desktop and Laptop

Test Result

The test results indicate a high level of compliance with the specified requirements. Key findings and outcomes include:

- **Functional Testing:** All specified functionalities were successfully validated without critical issues.
- **Performance Testing:** The system demonstrated satisfactory responsiveness and scalability under varying loads.
- **Security Testing:** The system exhibited robust security measures against unauthorized access.
- **Usability Testing:** The user interface proved to be intuitive and user-friendly.
- **Integration Testing:** The modules seamlessly integrated, ensuring smooth system operation.

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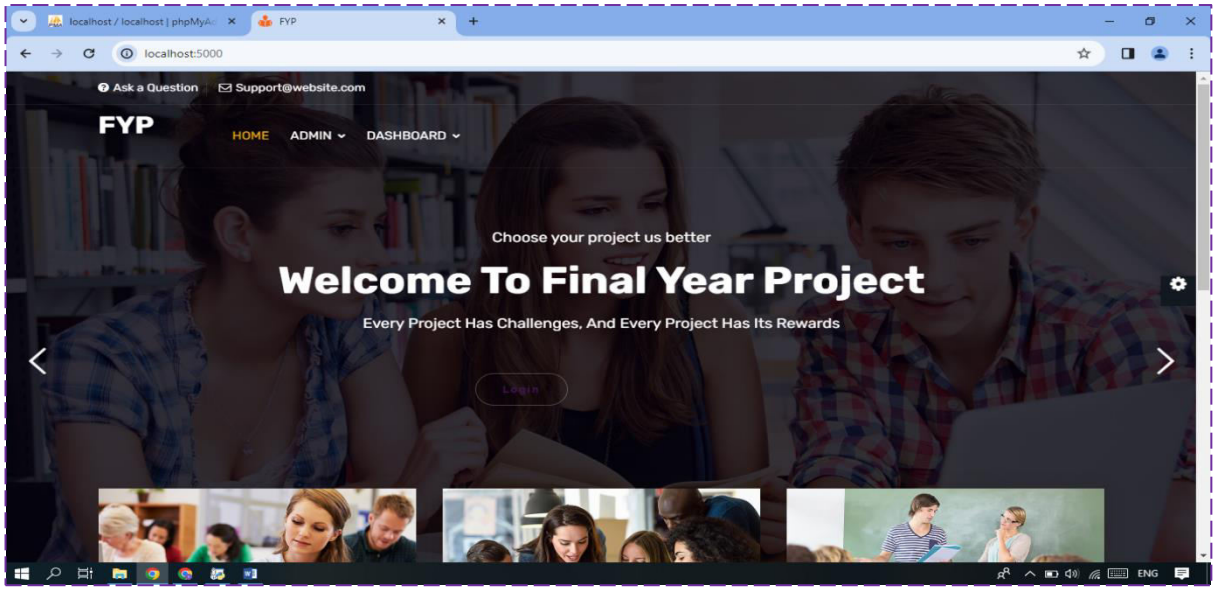
Test Conclusion

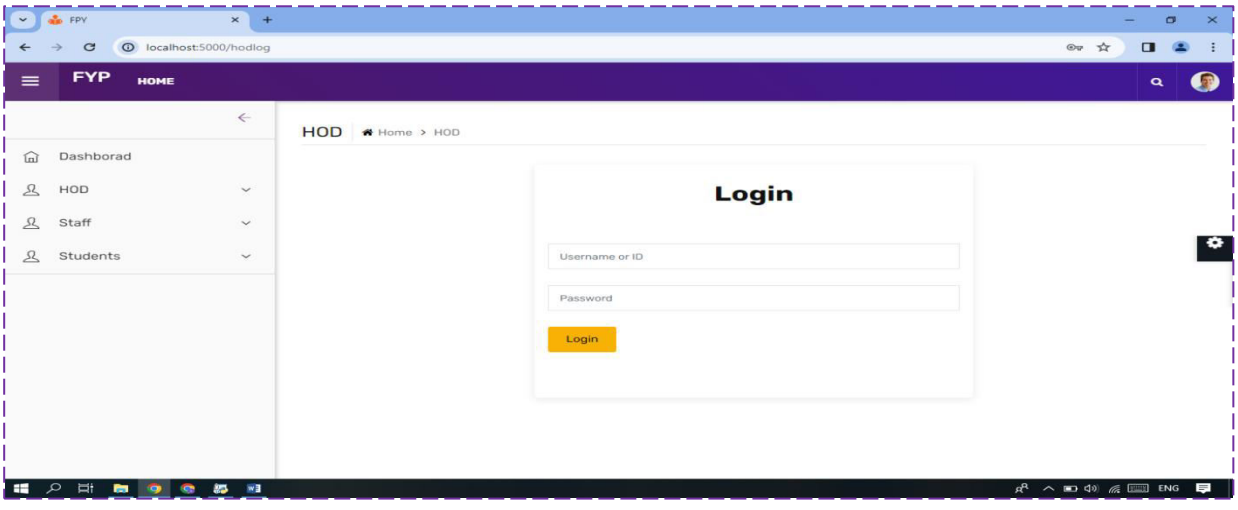
Based on the test results, the Final Year Project Management System is deemed ready for deployment. The testing process identified and addressed minor issues, and the system met the specified criteria for functionality, performance, security, and usability. The successful completion of testing signifies that the system is reliable and capable of meeting the requirements of its intended users.

X. FUTURE ENHANCEMENT

Future enhancements, a dedicated mobile application is in development to provide users with enhanced accessibility and real-time project management capabilities on Android and iOS platforms. Additionally, an automated code review system for technical projects is being implemented to assess code quality and offer constructive feedback, promoting best coding practices. Furthermore, plans include integrating the Final Year Project Management System with existing Learning Management Systems (LMS) to create a cohesive educational experience, streamlining workflows, and fostering a unified learning environment for students. These enhancements aim to elevate user experience, improve project quality, and integrate project activities seamlessly within the broader educational ecosystem.

XI. SCREEN LAYOUTS





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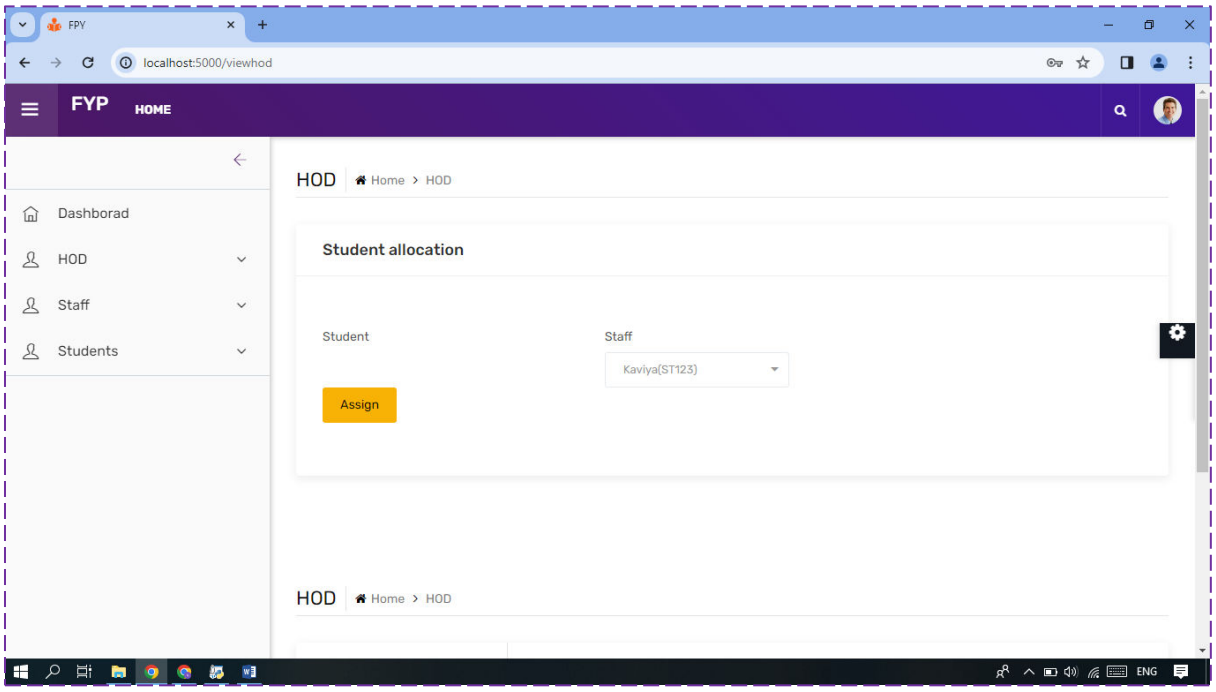

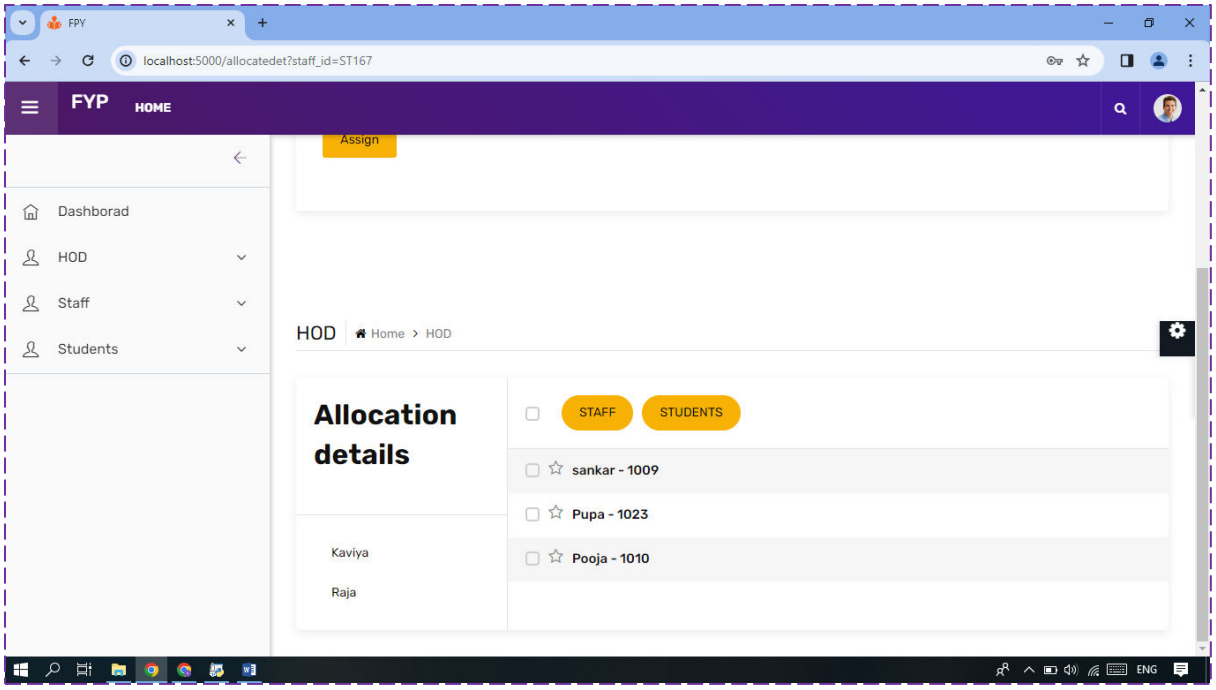

XII. CONCLUSION

In conclusion, the comprehensive design and development of the Final Year Project (FYP) Web App is rooted in a user-centric approach, employing Bootstrap for Front-End responsiveness and Python with Flask for Back-End efficiency. Leveraging MySQL ensures structured data storage, a critical aspect for housing essential project information. The system's key features, such as project title recommendation, team prioritization, and deduplication mechanisms, aim to optimize the project selection process and enhance collaboration among students, advisors, and administrators. The End User Dashboard, Mentor Assignment, Title Processing and Deduplication, Digital Signature

Integration, Review Material Submission, Online/Offline Review, Review Evaluation and Grading, Attendance Tracking, Report Generation, and Notification System modules collectively contribute to streamlining the entire FYP process. These modules facilitate efficient project management, personalized mentorship, systematic title processing, secure digital signatures, collaborative review processes, and seamless communication. The FYP Web App, with its user-friendly interfaces and robust functionalities, stands poised to revolutionize the traditional manual approach to final year project management, ensuring a more streamlined, transparent, and collaborative experience for all stakeholders involved.

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