



Online Student Project Management System

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ABSTRACT: Students encounter major issues when handling their final year projects, including producing work of subpar quality, finding better solutions for their projects, struggling for the best research paper for their research paper writing, and deadline management. To address these challenges, we've created an Online Student Project Management System using the latest technologies. This system fosters continuous communication among project coordinators, students, supervisors, and peers in the same field. It automates various project tasks like topic project tracking, approval, report writing guidance, student-supervisor interactions, assessment, and report storage. This ensures that duplicated projects are rejected during approval, and guarantees high-quality and on-time project submissions. We used an Agile software design approach for incremental testing of features. The system is developed using Python Programming Language, Apache Tomcat Server, Django Framework, and PostgreSQL as the Database Management System.

KEYWORDS: Analysis, Online Communication, Project Management, Project Supervision, Research Writing, Users

I. INTRODUCTION

In the modern world, we've observed that students often miss out on critical notices and updates related to their final year projects because they tend to overlook traditional notice boards. Managing these projects manually can be quite overwhelming. To address these challenges, we've introduced a user-friendly web system known as Online Project Management System (OPMS). The primary goal of OPMS is to simplify project-related activities for students, project coordinators, and project guides.

Each user has their own login credentials with a unique ID and password. This system allows student groups to suggest various project domains, and it then automatically assigns project guides to these groups. The central component of the system is the project coordinator, who plays a key role in assigning tasks to students and facilitating their collaboration with project guides.

Real-time monitoring is an indispensable facet of this project management system. It offers interactive dashboards and reporting tools that provide moment-by-moment insights into project advancement, enabling swift decision-making and the prompt resolution of issues.

The progress of each student group is closely monitored by the system, taking into account various parameters related to the tasks assigned by the coordinator. As a result, the system generates progress charts automatically for the student groups. To ensure that students are always informed, the system sends out notifications containing important notices and updates related to their final year projects.

In essence, the Project Management System is a comprehensive and user-friendly platform designed to streamline the management of final year projects, making it easier for everyone involved to stay updated and organized.

A. Goals or Objectives:

- ✧ To develop an online system that is systematic and comfortable to use for students and faculty.
- ✧ To design the architecture of the system and its define its functionalities.
- ✧ To setup the platform and server environment.
- ✧ To test the reliability of the system in real world.

II. LITERATURE SURVEY

✧ Research work and studies have been done regarding Project Management System. In a project management system, several new features have been introduced. This survey aims to provide an overview of key findings and focusing on features that have garnered significant attention. The following sections summarize the papers referenced in this survey and elaborate on the significance of specific features.

- ✧ [1] This paper emphasizes the importance of real-time data tracking as a pivotal feature in modern project management systems. Smith et al. conducted a case study, showcasing how real-time data tracking led to improved decision-making and project outcomes.
- ✧ [2] Brown's research explores the practice of demolishing or decomposing completed tasks within project management systems. The paper highlights how this feature enhances project clarity and aids in resource allocation.
- ✧ [3] Clark and his team delve into the automatic generation of graphs and charts as a data visualization tool within project management systems. They provide evidence of its efficiency in conveying complex data, making it an invaluable feature.
- ✧ [4] Garcia's work centers on the automatic generation of alerts and notifications in project management systems. The paper stresses how this feature is vital in preventing missed deadlines and keeping stakeholders informed.
- ✧ [5] This article is focused on the project communication management. This article describes that how much the communication in project is essential. It also describes that the process-oriented and project-oriented companies have better project communication management during the project life cycle. If there is lack of communication between the members in the group then it may affect the progress of the work. Hence this survey paper helped us to improve the communication by providing a collaborative platform for project guide as well as the students.
- ✧ [6] This article describes how the maintenance of the record of the students information can be done easily at one place. Thus it gave us the idea about maintaining all of the project related tasks at one single page. Also it tells about maintaining the progress report of the students based on their work performance.
- ✧ [7] This paper explores the challenges and best practices related to managing virtual teams in the context of project management. It discusses strategies for enhancing the effectiveness of virtual teams in project environments.
- ✧ [8] This paper explores the realm of Agile project management, offering insights into best practices and methodologies. It discusses the principles and techniques employed in Agile project management, particularly in the context of software development, providing guidance for those interested in adopting Agile methodologies.
- ✧ [9] This paper offers a framework for improving project management processes within project management systems. It provides guidance on assessing and enhancing project management practices to ensure the effectiveness of project management systems.
- ✧ [10] This paper compares traditional project management approaches with Scrum within the framework of project management systems, specifically in software development projects. It assesses how project management systems can support or adapt to these methodologies.

III. Existing System

- ✧ Existing system of Project Management is manual. Project coordinator or guide assigns task to students, which later after completion is submitted to coordinator, all work is manually which may take more time to complete the project related work.
- ✧ It's also difficult for the Project Coordinator to keep track of all the projects and their progress details. Thus the existing system does not help users to get right information when required and user cannot manage project development easily to achieve the main goal.

IV. Proposed System

- ✧ In this proposed system, we're creating a system to help manage projects. It does a few key things:
- ✧ **Coordinator's Role:** The project coordinator or guide can update project information, see what work students have done, and track progress of the project.
- ✧ **Student's Role:** Students can access the work they're supposed to do, update the status of their tasks, complete the work on time, and submit it through the system.

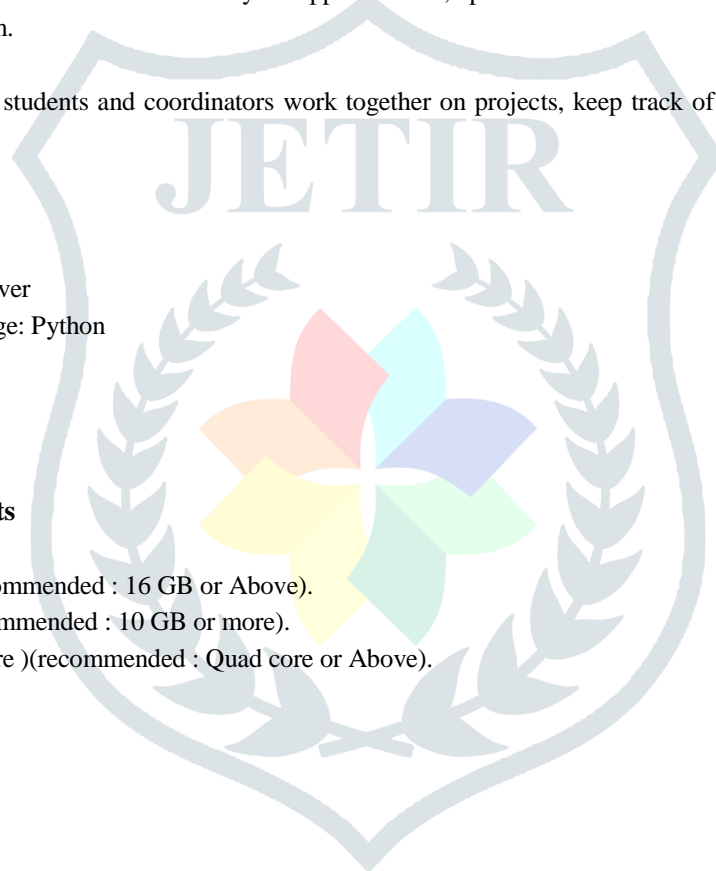
It's a digital system that helps students and coordinators work together on projects, keep track of tasks, and see how the project is progressing.

❖ Software Requirements

Web Server: Apache HTTP Server
Backend Programming Language: Python
Frontend: HTML, CSS, JS
Framework: Django
Database: PostgreSQL

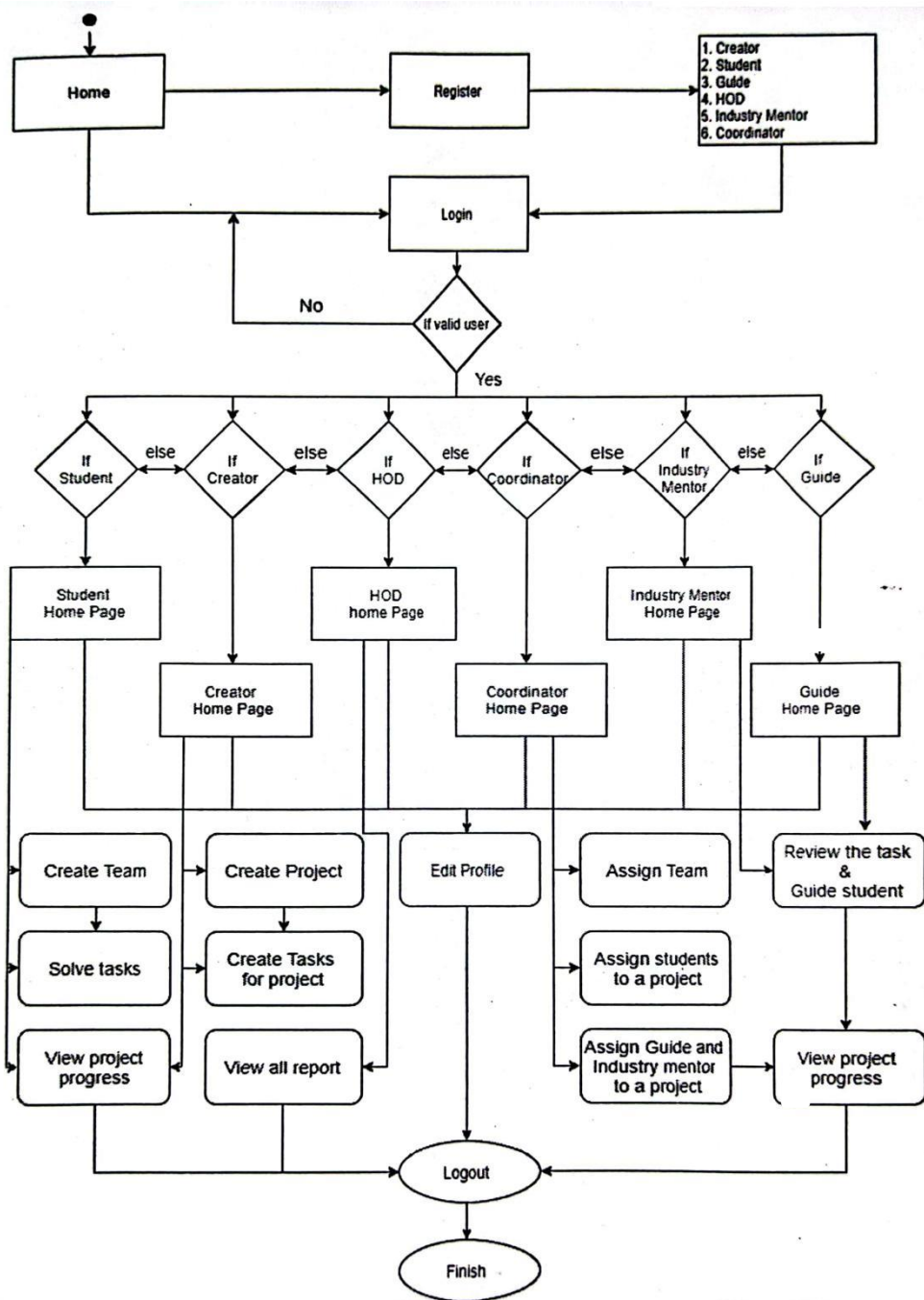
❖ Hardware Requirements

RAM : (minimum : 8 GB)(recommended : 16 GB or Above).
Storage: (minimum 5 GB)(recommended : 10 GB or more).
Processor: (minimum : Dual core)(recommended : Quad core or Above).



V. System Architecture

❖ System Flow Diagram



❖ System Design:

➤ With regards to a Server-Side Rendering (SSR) application that sticks to the Model-View-Controller (MVC) or Model-View-Template (MVT) engineering design, the cycle unfurls as follows:

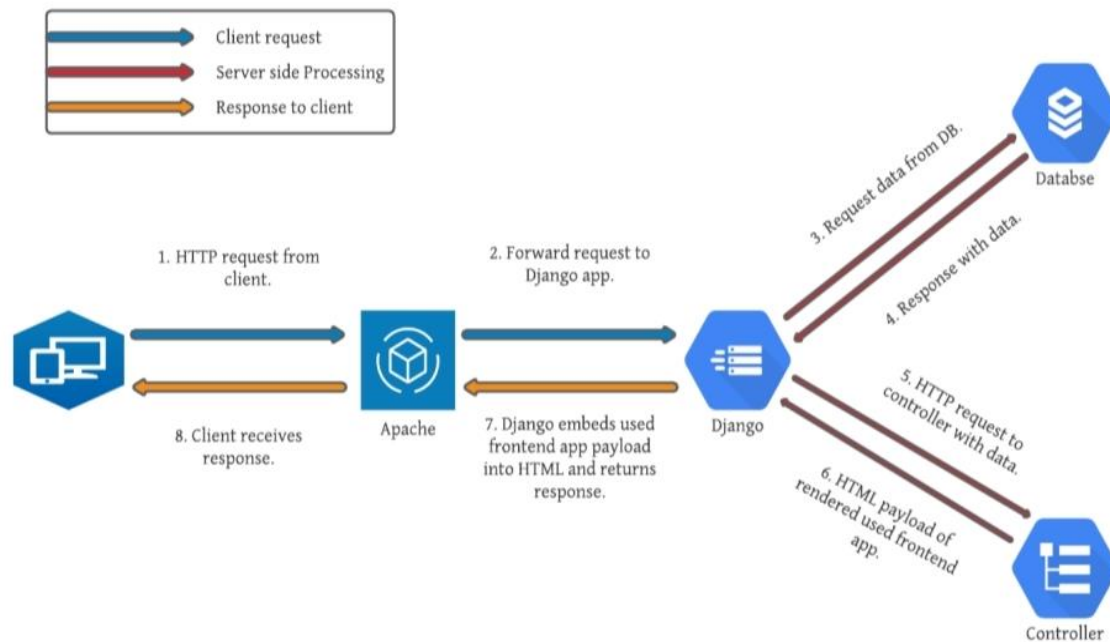
✧ At the point when a client starts a solicitation to get to a site, the server ventures out by producing prepared to-utilize HTML records. Dissimilar to Client-Side Rendering (CSR), SSR includes delivering content and information on the server, creating a total HTML page.

✧ After getting these pre-delivered HTML documents, the client's internet browser continues to deliver the substance. In any case, this underlying delivering isn't intelligent, as JavaScript execution has not yet occurred. It addresses a static perspective on the page.

✧ Notwithstanding the HTML content, the program may likewise download other essential records, for example, Flowing Templates (CSS) and JavaScript documents, to advance the client experience.

✧ The last stage happens when the program executes the downloaded JavaScript documents. This execution is a urgent defining moment, as it changes the static HTML page into an intuitive one, empowering clients to cooperate with the substance, for example, submitting structures, making solicitations, and taking care of dynamic way of behaving.

✧ This approach takes into account faster starting page stacking and further developed website streamlining (Search engine optimization) contrasted with CSR. Notwithstanding, it requires more server-side handling and may postpone intelligence until JavaScript documents are brought and executed.



✧ The 3 Layers (Model, View, and Template) are responsible for different purpose , and can be used independently.

✧ **Models:** Models are for defining the structure of your data. They tell your web app what types of information to store and how it's organized, like defining fields for a database table.

✧ **Views:** Views are like the brain. They take care of handling web requests, processing data, and deciding what to show to users. They manage the logic of your web app.

✧ **Templates:** Templates are about how things look. They are HTML files that determine the visual design of your web pages. They take data from views and display it to users in a nice way.

VI. Project Brief

Projects are created by the creator based on the colleges, batches and departments in the college, so when students sign up for a project, they can only see their college and department.

This way, everyone can access progress reports and keep track of all the details with the right info. Projects can't be assigned to the same team at the same time, but they can be assigned to different teams after the project is finished. All the enrolment and status info is saved in a separate table, and each year, the project will be managed with the enrolment info and status info from the same table.

Users can update their information, but sometimes mistakes can happen, like spelling mistakes or other mistakes, but there's an option to update the information. We also add only the important info, but you can add other fields later.

❖ Modules:-***Project Creator:***

After logging in, the Project Creator will construct a project that the Department Project Coordinator will then assign to the students. Tasks and problems will be added by the project's author.

It is created in such a way that adding a project field is not required when adding a task to it. When adding a task to a specific project, the project field may be inserted directly from the project id.

Anytime he needs to, the project creator can remove and update every project and every task that is contained in it. When a project is enrolled in the program, it will be developed in accordance with the colleges, batches, and departments included in it, and durations will be assigned to it.

Guide:

The department project coordinator will assign a guide to a project. The guide will check the uploaded solution and guide the student to get the best results. The guide will set a deadline for tasks after getting assigned to the project.

They can also update status of a task according to the progress report and chat with the student to make sure they're getting the best results. It's always good to be guided and to work in a supportive team environment. We all know that when we all put in our best effort, we get the best results when we work together with the right guidance.

Once students log in for the first time, they'll form a team with their leader or themselves on the website. They can't create a new team with the same name if they already have one.

Student:

Students will create a team on the website after logging in for the first time, either with the help of their leader or independently. If the team has already been formed, they cannot create another team with the same name.

All of the students that are a part of that particular team will be able to see the projects after the team has been formed. From the list of possible projects, the Leader will select the project.

Students will view the allocated assignment once the project organizer distributes the projects. They will be sent to the main project page, where they may access the tasks and problems that are accessible for that project, after selecting the view-project button.

Additionally, there is a chance to query project mentors or professional guides regarding the duties included in the project.

Head of Department:

The head of the department has access to all project information, including information on team members. Guide assigned to or chosen for the projects may also see how much progress the group has achieved. They may observe all of the user interactions, whether they were done by students or guides.

So, if the team is deficient, they can approach any of the team members or guides for guidance.

Industry Mentor:

They have the same access as a guide, says the industry mentor. Final-year students will be appointed industry mentors since we know they have greater experience and will be excellent role models for the world's future leaders, passing on the greatest information they have.

With better and more accurate knowledge to guide the world toward a better future, our environment will be in good hands. They also have options like the ability to approve or reject tasks that have been submitted. Industry Mentors will conduct the final task verification.

Project Coordinator:

A key role is played by the departmental project coordinator. They will have access to most of the controls. The coordinator is the primary user because they are responsible for overseeing all project details. They will be able to assign students, mentors, and industry mentors to a project and assess how well it is going overall.

The coordinator will be able to assign tasks to any team using certain features. The department project coordinator may also assign a project that is requested by the students. The way the backend functions in this user-assigned project assignment process is unimportant.

To the coordinator, everything is clearly visible and understandable so that they can handle these situations. Due to the way

our website is constructed, all backend tasks and project assignment details are handled. They can see all of the reports organized by batch and how much progress has been made in each batch or project within their department.

VII. Project Scope

- ❖ The Project Management System website will be helpful for small organizations and all types of colleges to manage their projects.
- ❖ It will provide proper guidance to the users and produce an accurate report for a better work experience.
- ❖ The website will get an update if required by users in the future. Since the number of users will increase in the future, we will look after more code optimization.

VIII. Conclusion

Project Management System project represents a significant step forward in efficient and effective project planning, execution, and control. By combining state-of-the-art models, views, and templates, this system empowers project teams to streamline their operations, enhance collaboration, and make data-driven decisions. This shows how using technology can help with project management, and it reminds us that having well-organized systems is crucial for handling complex projects nowadays.

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