PROJECT LINK HUB

A PROJECT REPORT
For

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MASTER OF COMPUTER APPLICATION

Under the Supervision of

Ms. Neelam Rawat
Associate Professor

Submitted to

DEPARTMENT OF COMPUTER APPLICATIONS
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Uttar Pradesh-201206

(FEBRUARY 2024)

DECLARATION

I hereby declare that the work presented in report entitled “Project Link Hub” was carried out by me. I have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University of Institute. I have given due credit to the original authors/sources for all the words, ideas, diagrams, graphics, computer programs, that are not my original contribution. I have used quotation marks to identify verbatim sentences and give credit to the original authors/sources. I affirm that no portion of my work is plagiarized, and the experiments and results reported in the report are not manipulated. In the event of a complaint of plagiarism and the manipulation of the experiments and results, I shall be fully responsible and answerable.

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CERTIFICATE

Certified that **Aditya Sharma 2200290140012, Aayush Chaudhary 2200290140002** have carried out the project work having "**Project Link Hub**" (**Mini Project-KCA353**) for **Master of Computer Application** from Dr. A.P.J. Abdul Kalam Technical University (AKTU**)** (formerly UPTU), Lucknow under my supervision. The project report embodies original work, and studies are carried out by the student himself and the contents of the project report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.

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This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

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Project Link Hub

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ABSTRACT

The "**Project Link Hub**" is a web-based platform designed to facilitate collaboration between students and faculty members within an educational institution. This platform simplifies the process of sharing and approving project ideas. Students can browse a list of available projects, each with a title, description, and faculty member's name. They can then propose projects they're interested in, submitting detailed plans and motivations. Faculty members, on the other hand, have the authority to add project ideas, approve or reject student proposals, and mark projects as unavailable once approved.

The "**Project Link Hub**" is built using **HTML-5**, **CSS, PHP,** and **Bootstrap** for a user-friendly and responsive interface. It addresses the need for transparency and efficiency in project management within educational institutions, streamlining the project selection process.

In summary, the "Project Link Hub" SRS provides a concise overview of a web platform that aims to enhance collaboration and innovation by connecting students and faculty members through a centralized hub for project ideation and management.

ACKNOWLEDGEMENT

I extend my deepest gratitude to my thesis supervisor, Ms. Neelam Rawat (Associate Professor), for her guidance, help, and encouragement throughout my project work. Her enlightening ideas, comments, and suggestions have guided me significantly in completing this project successfully.

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Finally, my heartfelt thanks go to my family members and all those who have directly and indirectly provided me moral support and other kinds of help. Without their support, completion of this work would not have been possible in time. They keep my life filled with enjoyment and happiness.

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CHAPTER 1

INTRODUCTION

1 INTRODUCTION

The "Project Link Hub" is a transformative web-based platform poised to revolutionize manual workflows in education, specifically addressing the process of project ideation, allocation, and performance management. This software redefines how students and faculty members collaborate, shifting from manual processes to a streamlined digital platform.

2 OBJECTIVE

The primary objective of the "Project Link Hub" is to automate and enhance the entire project lifecycle, from idea generation to project completion. By providing a centralized space, it aims to simplify project sharing, approval, allocation, and progress tracking, fostering a more efficient and collaborative educational environment.

3 WORKFLOW

The workflow of the "Project Link Hub" unfolds in a series of seamless steps:

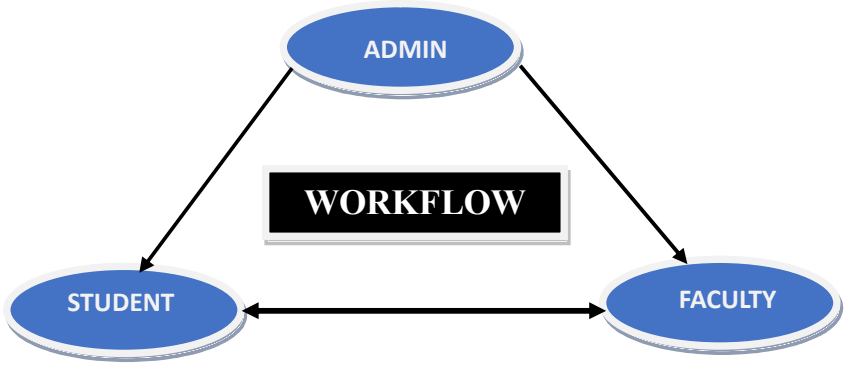

Fig 1.1

Workflow of Project Link Hub

Faculty members initiate the process by logging into the platform and submitting diverse project ideas. These submissions encompass crucial details such as project title, objectives, methodologies, and anticipated outcomes.

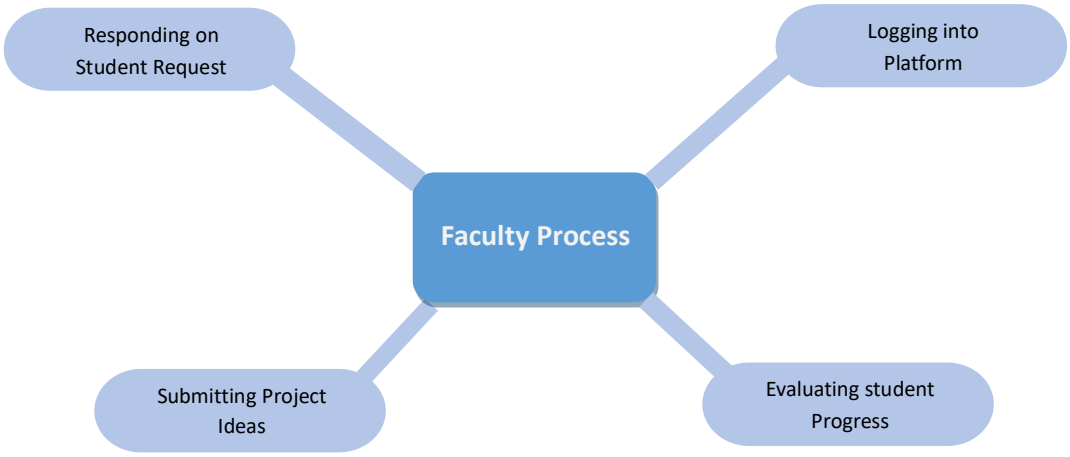

Fig 1.2
Faculty Process

Students, upon logging into the platform, explore the array of available project ideas put forth by faculty members. They meticulously select a project of interest and submit a formal request to work on the chosen project.

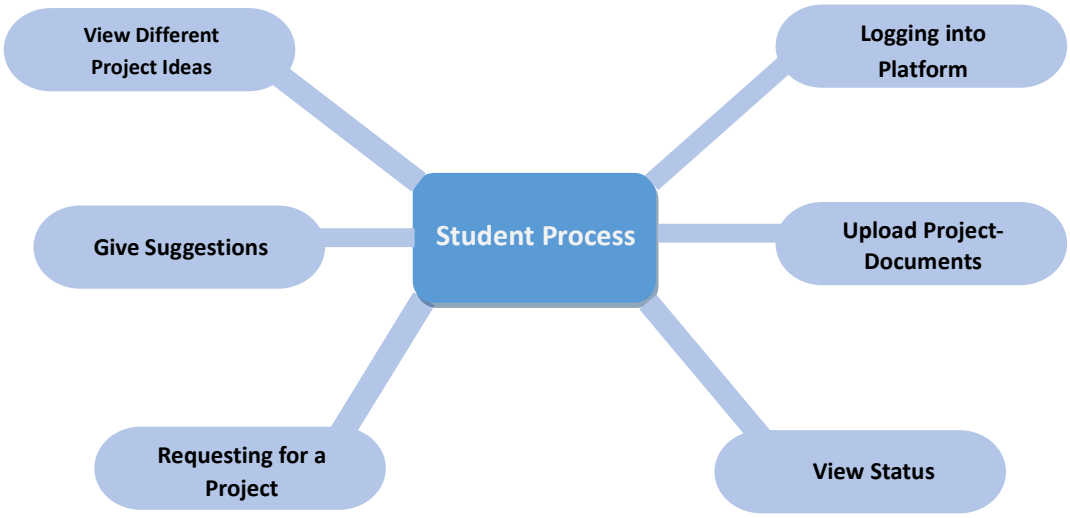

Fig 1.3
Student Process

Faculty members, in turn, receive and review these student requests. The evaluation considers factors such as student qualifications and project suitability. Based on this assessment, faculty members make decisions to either approve or deny the student's request.

Upon approval, the project is officially allocated to the student. Subsequently, the student gains access to a personalized dashboard tailored to the allocated project.

Within their dedicated dashboards, students actively contribute to project progression by uploading essential documents. These documents may include project proposals, research findings, and periodic progress reports. Students leverage their dashboards to stay informed about deadlines and receive valuable feedback from faculty members.

Faculty members, on the other hand, utilize the platform to monitor and assess student progress. They review documents submitted by students, offer constructive feedback, and closely track the overall development of each project.

In a collaborative twist, students are empowered to suggest new project ideas directly to faculty members through the platform. This feature contributes to an environment that nurtures collective ideation and innovation.

Faculty members, being central figures in project management, actively oversee the projects they have proposed. They have the capability to edit project details, monitor student progress, and provide ongoing guidance throughout the project lifecycle.

Lastly, the platform incorporates an admin oversight layer. The admin, possessing overarching control, manages all activities on the platform. This includes the ability to add or remove users, ensuring the smooth functioning and integrity of the "Project Link Hub."

4 **FEATURES**

- Project Idea Submission: Faculty members contribute project ideas, creating a diverse pool for students to choose from.
- Student Request System: Students can request specific projects, aligning their interests with available opportunities.
- Approval Workflow: Faculty members review and approve/deny student requests, ensuring a controlled and transparent project allocation process.
- Student Dashboard: Once a project is approved, students gain access to a dedicated dashboard for document uploads and progress tracking.
- Progress Monitoring: Faculty members can efficiently monitor student progress and evaluate document submissions through the platform.
- Idea Suggestion: Students have the ability to suggest new project ideas, fostering a collaborative environment for innovation.
- Admin Control: An admin login provides overarching control, allowing management of all activities and user permissions.

5 ARCHITECTURE

The architecture of the "Project Link Hub" is designed as a client-server model with a web-based interface.

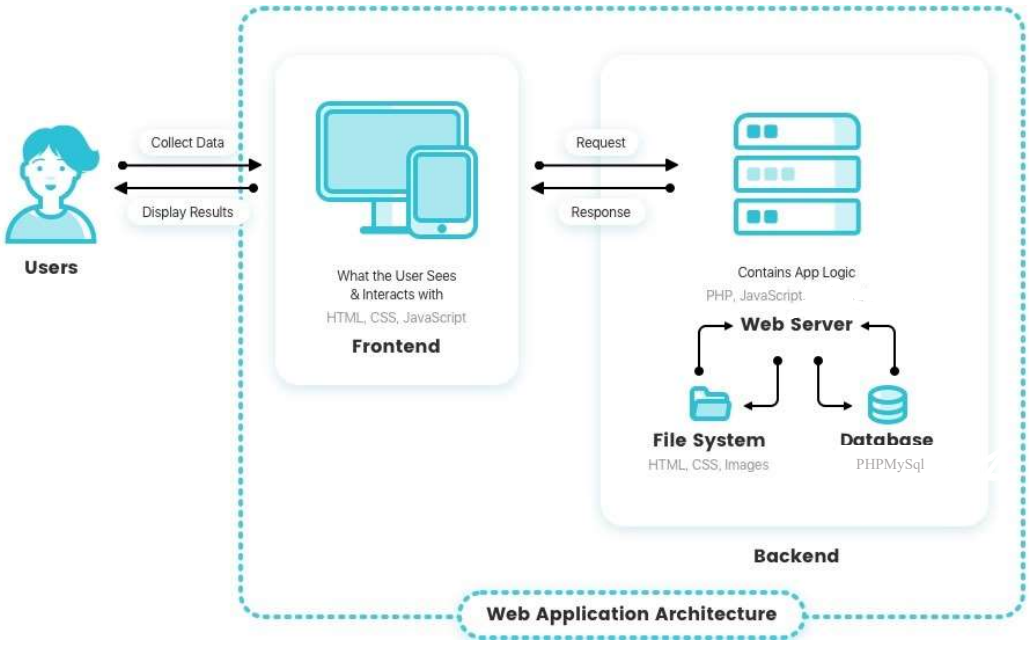

Fig 1.4
Client-Server Architecture Diagram

The front end is built using HTML, CSS, and Bootstrap for a responsive and user-friendly experience. The backend is implemented using PHP, ensuring dynamic content generation and seamless interactions. The system's database, managed through MySQL, stores project details, user information, and progress tracking data.

CHAPTER 2

Literature Review

In the dynamic landscape of education, the transformative power of digital platforms cannot be overstated. These platforms have evolved into indispensable tools that not only facilitate collaboration but also serve as catalysts for innovative project ideation and management, fostering a seamless connection between students and faculty members. A comprehensive exploration of existing research highlights the compelling positive impact these platforms have on project outcomes and student engagement.

Efficiency and transparency, perennial concerns in the realm of project management, have found a promising solution in the form of the "Project Link Hub." This innovative hub acts as a centralized hub for project ideation, submission, and approval processes, aligning seamlessly with institutional goals. By addressing these crucial aspects, the "Project Link Hub" emerges as a beacon of streamlined project management in the educational sphere.

The significance of fostering collaboration between students and faculty cannot be overstated. Research consistently demonstrates that collaborative projects not only enhance interpersonal interactions but also contribute to improved learning outcomes. The "Project Link Hub" strategically capitalizes on this finding by promoting and facilitating meaningful collaboration through its advanced digital platform.

As technology continues to weave its way into the fabric of education, the "Project Link Hub" stands out as a prime example of leveraging cutting-edge tools. By employing HTML, CSS, PHP, and Bootstrap, this hub exemplifies the fusion of technology and education, creating a user-friendly environment that enhances the overall educational experience.

In essence, the "Project Link Hub" not only aligns with but also propels forward the current trends in educational technology. This review underscores the hub's relevance and potential impact by providing an efficient, transparent, and collaborative project management system tailored for educational institutions. As we navigate the ever-evolving landscape of education, the "Project Link Hub" emerges as a pivotal player, poised to shape the future of collaborative learning.

CHAPTER-3

SYSTEM REQUIREMENTS AND SPECIFICATION

3.1 Purpose

The "Project Link Hub" is a web-based platform designed to facilitate the sharing, approval, and management of project ideas for students and faculty members within an educational institution.

3.2 Scope

3.2.1 In-Scope

- User registration and authentication.
- Students can view available project ideas.
- Students can propose project ideas.
- Students can check the status of their proposed projects.
- Faculty members can add, edit, or delete project ideas.
- Faculty members can approve or reject student project proposals.
- Faculty members can mark projects as unavailable.

3.2.2 Out-of-Scope

- Advanced project collaboration features (e.g., team formation).
- Financial transactions.
- Integration with external systems.

3.3 Definitions, Acronyms, and Abbreviations

- SRS: Software Requirements Specification
- HTML: HyperText Markup Language
- CSS: Cascading Style Sheet

- PHP: Hypertext Preprocessor
- Bootstrap: A front-end framework for web development

3.4 System Overview

3.4.1 System Architecture

The system will consist of a front-end developed using HTML, CSS, and Bootstrap. The back end will use PHP for server-side processing and interact with a MySQL database for data storage.

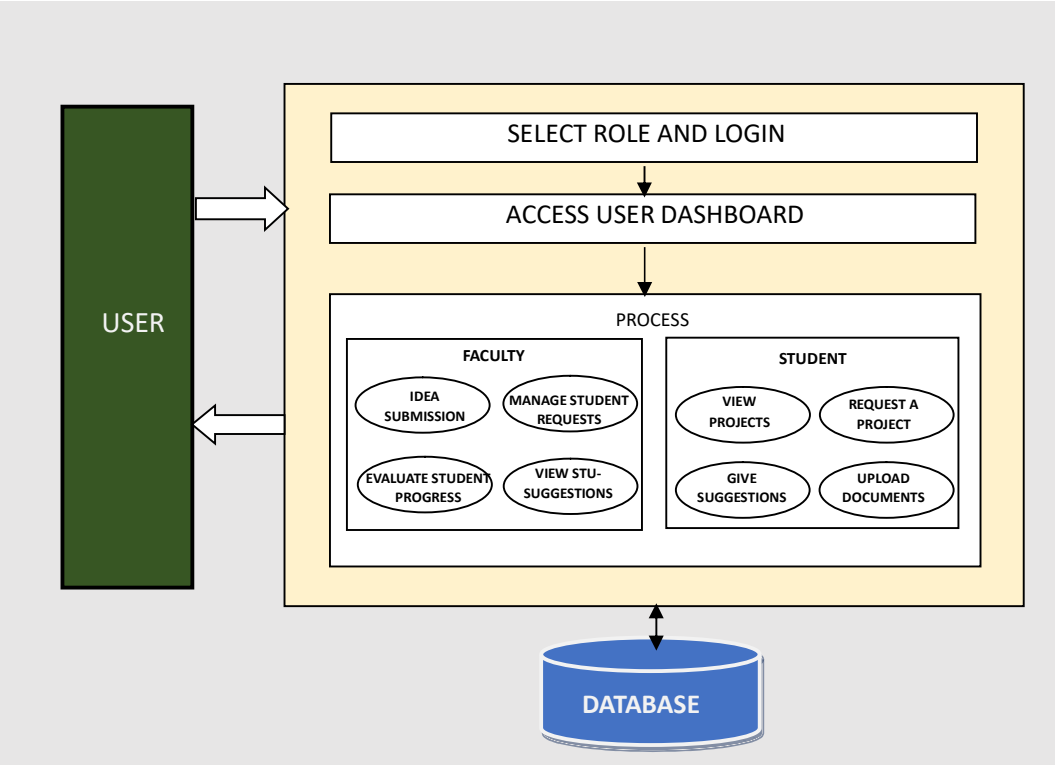

Fig 3.1
System Architecture

3.4.2 Users

- **Students:** Users who can browse, propose, and track project ideas.
- **Faculty Members:** Users with additional privileges to manage project ideas and approve student proposals.

3.5 Functional Requirements

3.5.1 User Registration and Authentication

- Users must register with their name, email, and password.
- Passwords should be securely hashed and stored.
- Registered users must log in to access the system.

3.5.2 Student Features

3.5.2.1 View Available Projects

- Students can view a list of available project ideas.
- Projects should display the title, description, faculty member, a request button and status (available or unavailable).

3.5.2.2 Propose a Project

- Students can select an available project and propose it.
- The request will be sent to corresponding faculty member for their approval.

3.5.2.3 Check Proposal Status

- Students can check the status of their project proposals (approved, rejected, or pending).
- Feedback or comments from faculty members should be visible for rejected proposals.

3.5.3 Faculty Member Features

3.5.3.1 Add Project Ideas

- Faculty members can add new project ideas, including a title, description, and status (available).

3.5.3.2 Approve/Reject Student Proposals

- Faculty members can review and approve or reject student project proposals.
- They can provide feedback or comments when rejecting proposals.

3.5.3.3 Mark Projects as Unavailable

- Faculty members can mark approved projects as unavailable.
- Unavailable projects should no longer be visible to students.

3.6 Non-Functional Requirements

3.6.1 Performance

The system should handle a large number of concurrent users without significant performance degradation.

Response times should be within acceptable limits.

3.6.2 Security

- User data, especially passwords, should be stored securely and transmitted over HTTPS.
- Authentication and authorization mechanisms should be robust to prevent unauthorized access.

3.6.3 Usability

- The user interface should be intuitive and responsive, compatible with different devices and browsers.

3.7 Constraints

- The project must adhere to all relevant data protection and privacy regulations.
- Development should use HTML, CSS, PHP, Bootstrap, and MySQL as specified.

3.8. Project Timeline

30th Jan 2024

3.9 Conclusion

This Software Requirements Specification outlines the essential features and functionality of the "Project Link Hub" project. It will serve as a foundation for the development team to design and implement the system according to the specified requirements.

CHAPTER-4

ANALYSIS

Systems analysis is the process by which an individual studies a system such that an information system can be analyzed, modelled, and a logical alternative can be chosen. Systems analysis projects are initiated for three reasons: problems, opportunities, and directives.

4.1 Requirement Gathering

The success of the "Project Link Hub" platform relies on a comprehensive understanding of user needs and system functionalities. Requirements gathering involves extensive communication with stakeholders to identify and document key features and specifications. The following categories of requirements were identified:

4.1.1 User Requirements

- **User Registration:** The system must allow students and faculty members to register securely, providing unique user credentials.
- **Project Proposal Submission:** Students should be able to submit detailed project proposals, including objectives, documentation, and any supporting materials.
- **Proposal Review**: Faculty members need the ability to review submitted proposals, providing feedback to students for refinement.
- **Approval/Rejection**: The system should facilitate a straightforward process for faculty members to approve or reject project proposals based on predefined criteria.
- **Project Management**: Faculty members must be able to manage approved projects efficiently, with functionalities for addition, editing, and deletion.

4.1.2 Functional Requirements

- **Collaboration Hub**: The platform should offer a centralized space for effective collaboration among students and faculty members, promoting communication and idea exchange.

- **Approval Workflow:** A streamlined workflow should be implemented to facilitate efficient project proposal review and approval processes.
- **User-Friendly Interface**: The system's interface must be intuitive and user-friendly, accessible to both students and faculty members, promoting ease of use and engagement.

4.1.3 Non-Functional Requirements

- **Security Measures**: Robust security measures should be implemented to ensure the confidentiality of user data, preventing unauthorized access and safeguarding sensitive information.
- **Performance Optimization**: The system must be optimized to handle a substantial number of concurrent users without compromising response times, ensuring a seamless user experience.
- **Compliance with Development Technologies**: Adherence to specified development technologies, including HTML, CSS, PHP, Bootstrap, and MySQL, is crucial for consistency and compatibility.

4.2 SYSTEM DESIGN

The system design encompasses the architectural structure, system flow, and technology stack detailed in Chapter 2. It involves the creation of wireframes and mock-ups for the user interface, defining data models for the database, and outlining the interactions between different system components.

4.3 DATA MODELING

The data model for the "Project Link Hub" platform involves the creation of database tables to store user information, project details, feedback, and other relevant data. Relationships between tables are established to ensure data integrity.

4.4 MOCKUPS AND PROTOTYPES

Mock-ups and prototypes of the user interface are developed to visually represent the system's look and feel. These visual aids serve as a reference for developers and provide stakeholders with a tangible understanding of the platform's design.

4.5 FEASIBILITY ANALYSIS

A feasibility analysis is conducted to assess the viability of the "Project Link Hub" platform in terms of technical, operational, and economic factors. This involves evaluating the technical capabilities of the chosen technologies, assessing operational requirements, and estimating the overall cost of development and maintenance.

This chapter outlines the process of requirements gathering, system design, data modelling, and feasibility analysis for the "Project Link Hub" platform. The subsequent chapters will delve into the implementation, testing, and deployment phases, providing a comprehensive overview of the system's development lifecycle.

CHAPTER-5

SYSTEM DESIGN

5.1 Introduction

The design of the "Project Link Hub" is meticulously crafted to address the dynamic and collaborative nature of academic project management. This section provides a comprehensive overview of the system architecture, modules, data flow, and user interface, emphasizing the underlying principles driving the design decisions.

5.2 System Architecture

The "Project Link Hub" adopts a robust client-server architecture to ensure scalability, responsiveness, and efficient data management. The detailed architecture can be shown in the below diagram.

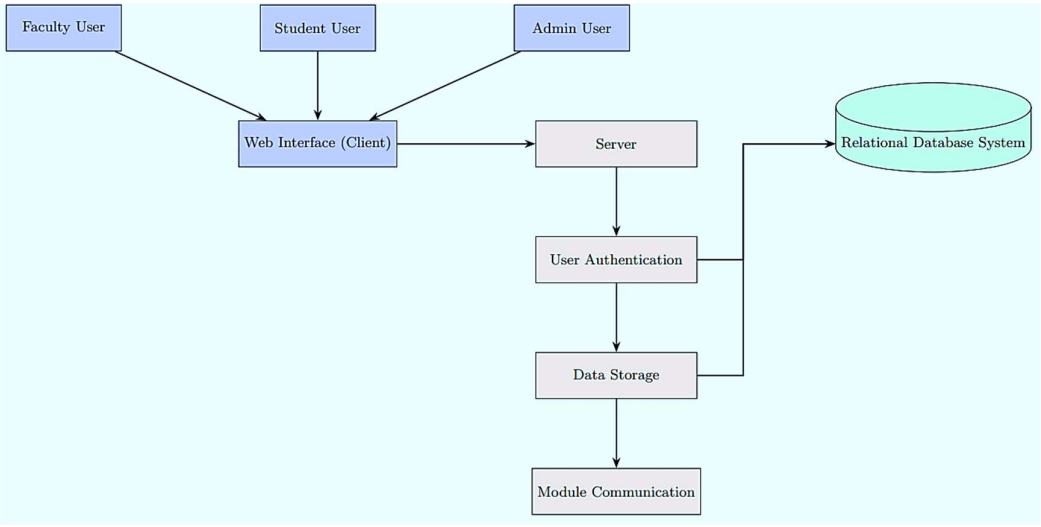

Fig 5.1
System Architecture Diagram

The client-side comprises the web interface accessible to faculty, students, and the admin. The server-side handles the backend processes, including user authentication,

project data storage, and communication between different modules. A relational database system is employed to store and retrieve project-related information efficiently.

5.3 Modules

In the overall design of the "Project Link Hub," the system is organized into several interconnected modules, each serving a specific purpose to facilitate seamless project management within an educational environment. These modules include the User Authentication module, responsible for secure user access; the Project Management module, encompassing functionalities for project idea submissions, student requests, and project allocation; the Progress Monitoring module, allowing faculty members to review student progress and provide constructive feedback; the Ideation and Innovation module, empowering students to propose new project ideas; the Faculty Management module, providing centralized oversight for faculty members; and the Admin Control module, offering overarching control to manage all system activities. The interaction and collaboration between these modules form the backbone of the system, creating an integrated platform that enhances communication, transparency, and efficiency in academic project endeavours.

5.3.1 User Authentication Module

This module employs secure authentication mechanisms, including hashed passwords and session management, to ensure that users (faculty, students, and admin) have authenticated access to the system. Role-based access control is implemented to determine the level of authorization for each user.

5.3.2 Project Management Module

5.3.2.1 Project Idea Submission: Faculty members engage in a user-friendly interface to submit detailed project ideas. The submission process includes fields such as project title, objectives, methodologies, and anticipated outcomes. These submissions are securely stored in the database.

5.3.2.2 Student Project Request: Students explore a diverse range of project ideas presented by faculty members. They meticulously select projects of interest and submit formal requests. This initiates an evaluation process by faculty members.

5.3.2.3 Project Allocation: Upon faculty approval, the system officially allocates the project to the student. This triggers the creation of a dedicated dashboard for the student, linking the project to their account.

5.3.2.4 Student Dashboard*:* Students access a personalized dashboard that serves as a central hub for project-related activities. It facilitates document uploads, progress tracking, and communication with faculty.

5.3.2.5 Document Management*:* This sub-module ensures secure and organized storage of project-related documents. It allows students to upload project proposals,

research findings, and periodic progress reports, fostering collaborative feedback exchange.

5.3.3 **Progress Monitoring Module**

This module provides faculty members with tools to actively monitor and assess student progress. It includes:

5.3.3.1 Document Review: Faculty members can review and provide constructive feedback on documents submitted by students, fostering a continuous feedback loop.

5.3.3.2 Progress Tracking: This sub-module offers tools to track the overall development of each project, ensuring accountability and timely intervention if necessary.

5.3.4 Ideation and Innovation Module

This module aims to promote collaboration beyond project-specific interactions:

5.3.4.1 Idea Suggestion*:* Students are empowered to propose new project ideas directly to faculty members through the platform. This feature contributes to an environment that nurtures collective ideation and innovation.

5.3.5 Faculty Management Module

Centralized administrative functions for faculty members include:

5.3.5.1 Project Oversight: Faculty members have the capability to edit project details, monitor student progress, and provide ongoing guidance throughout the project lifecycle.

5.3.6 Admin Control Module

This module provides the admin with overarching control:

5.3.6.1 User Management: The admin can add or remove users, ensuring the smooth functioning and integrity of the entire system. This includes managing faculty, students, and other administrative roles.

5.4 Data Flow

The data flow within the "Project Link Hub" follows a logical sequence, ensuring efficient and secure transmission:

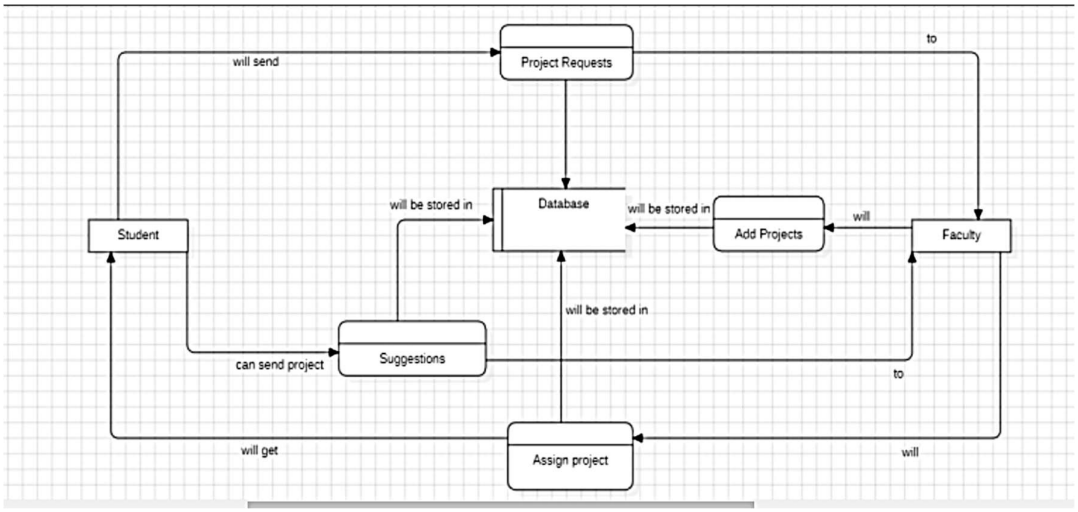

Fig 5.2
Data Flow Diagram

- User authentication initiates access to the appropriate modules based on the user's role.
- Project data flows seamlessly from the Project Management Module to the Progress Monitoring Module, enabling continuous evaluation and feedback.
- Ideation and innovation suggestions from students flow into the Faculty Management Module, fostering a collaborative environment.

5.5 **User Interface**

The user interface is designed with a focus on user experience, intuitiveness, and visual appeal. Faculty and students navigate through dedicated dashboards that present project-related information in a structured and accessible manner. Responsive design principles are incorporated to ensure accessibility across various devices.

5.6 **Use Cases**

The use case diagram illustrates the various interactions and scenarios between actors (Faculty, Student, Admin) and the "Project Link Hub" system. It provides a visual representation of how each user interacts with the system, outlining essential functionalities such as logging in, submitting project ideas, managing project progress, and overseeing system activities. The use case diagram serves as a valuable tool for understanding the system's functionality from a user-centric perspective.

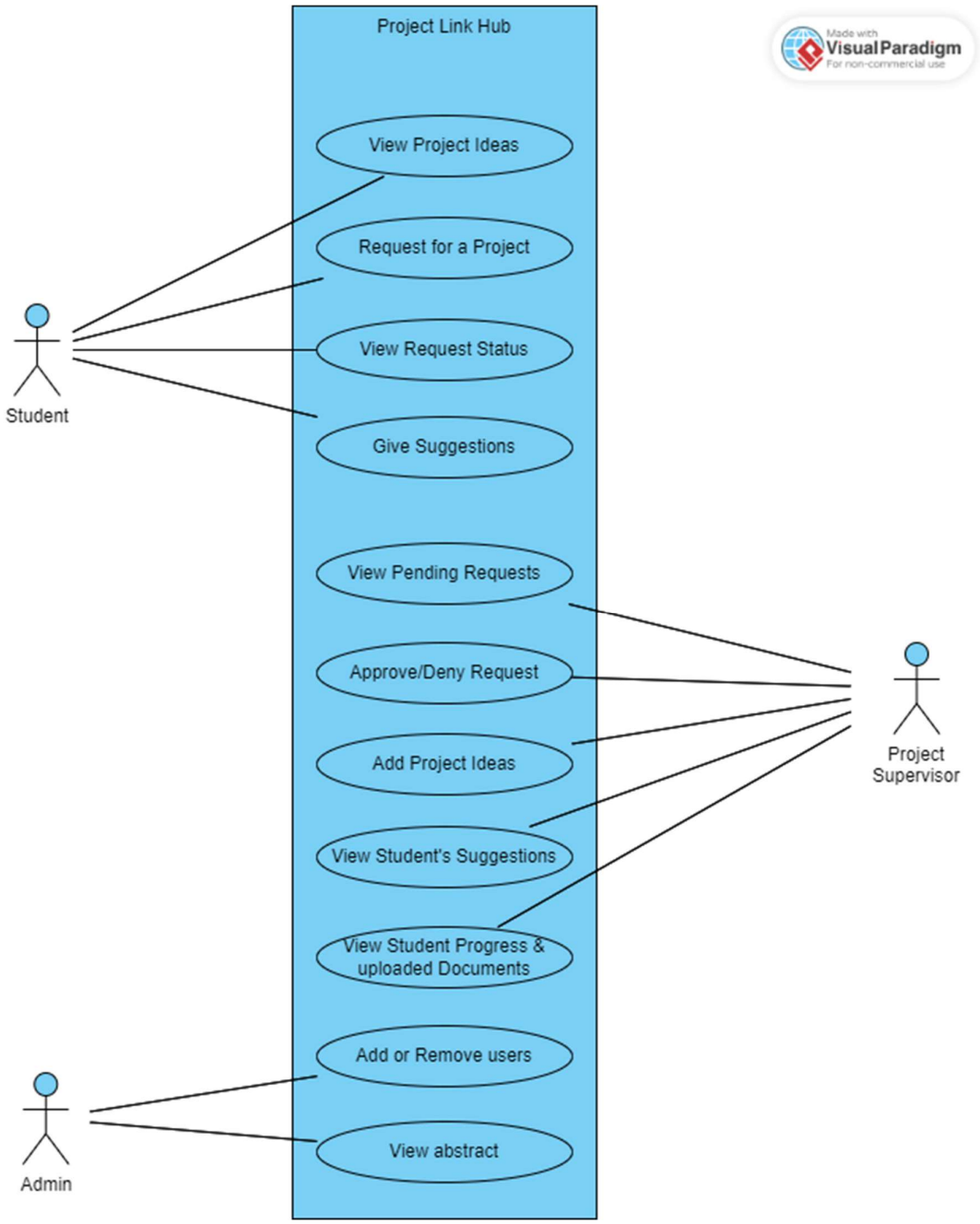

Fig 5.3
System Use Case Diagram

5.6.1 **Student Use Case:**

- **Logging In:**
    - Students log into the system using their credentials.
    - Upon successful authentication, students are directed to their personalized dashboards.
- **View Project Ideas:**
    - Students explore the array of available project ideas submitted by faculty members.
    - They meticulously select a project of interest.
- **Request for a Project:**
    - Students formally submit requests to work on chosen projects.
    - The system notifies faculty members of project requests.
- **Upload Documents:**
    - Students contribute to project progression by uploading essential documents within their dedicated dashboards.

5.6.2 **Faculty Use Case:**

- **Logging In:**
    - Faculty members log into the system using their credentials.
    - Successful authentication grants access to the faculty management dashboard.
- **Project Idea Submissions:**
    - Faculty members submit diverse project ideas, including project title, objectives, methodologies, and anticipated outcomes.
- **Reviewing Student Requests:**
    - Faculty members receive and review student requests, considering factors like qualifications and project fit.
- **Evaluating Progress:**
    - Faculty members actively monitor and assess student progress by reviewing uploaded documents and providing feedback.

5.6.3 **Admin Use Case:**

- **Logging In:**

- Admin logs into the system with administrative credentials.
- Authentication provides access to the admin control dashboard.

- **User Management:**
  - Admin manages user accounts, adding or removing faculty, students, and other administrative roles.
- **System Oversight:**
  - Admin oversees the entire system's functionality, ensuring smooth operation and integrity.

5.7 Flow Chart

The flowchart for the "Project Link Hub" depicts a structured sequence of actions users undertake within the system. It initiates with users accessing the platform through a login interface, where they input their credentials. Subsequently, the system verifies and authenticates the provided credentials to determine the user's role—either Faculty or Student.

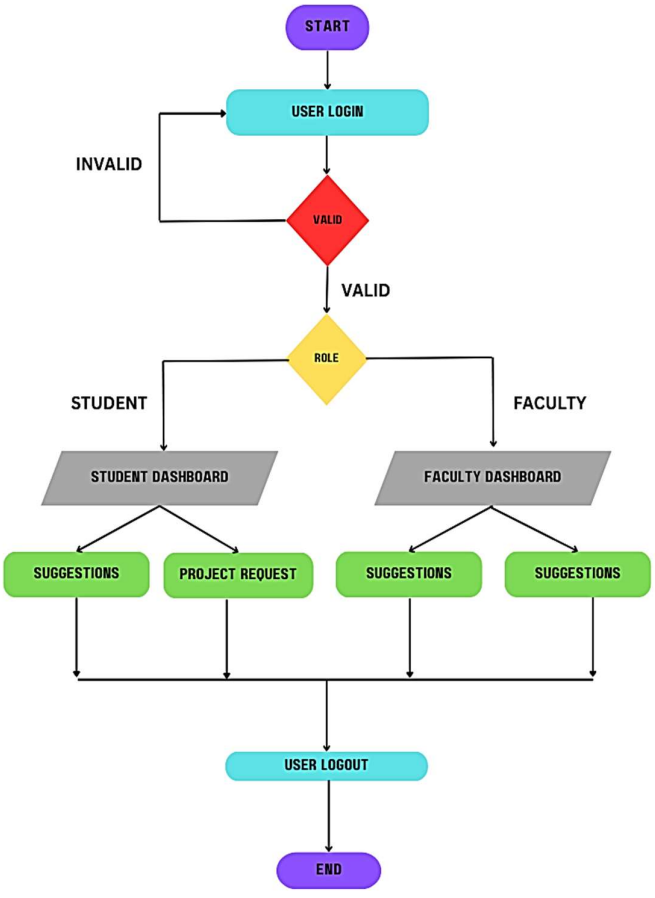

Fig 5.4
System Flow Chart

For Faculty members, the flowchart illustrates a pathway granting access to specific modules tailored to their roles and responsibilities. These modules include functionalities such as adding projects, reviewing project proposal requests submitted by students, approving or rejecting these requests, evaluating student progress, and performing administrative tasks essential for project management.

Conversely, for Students, the flowchart delineates an alternative pathway, allowing access to modules suited to their roles and needs. These modules empower students to request projects, suggest new project ideas, view available projects, and monitor their project progress, fostering active participation and engagement in academic endeavors.

Following the completion of tasks within their respective modules, users have the option to logout from the system. This action terminates the current session, ensuring security and privacy, and redirects users back to the login interface, ready for subsequent interactions with the "Project Link Hub."

In essence, the flowchart offers a visual representation of the user journey within the "Project Link Hub," elucidating the systematic process by which users navigate through the platform's functionalities based on their roles and objectives. Through this structured approach, users can efficiently engage with the system to manage projects, collaborate with peers, and contribute to academic excellence.

5.8 System Diagram

The system architecture is visually represented through a comprehensive diagram, illustrating the flow of information between modules. This visual aid enhances the understanding of the intricate relationships between modules and their interactions

Fig 5.5
System Module Relationship Diagram

Above mentioned a visual representation of the system modules, providing a comprehensive overview of their relationships and interactions.

5.9 Conclusion

The design of the "Project Link Hub" reflects a commitment to fostering collaboration, transparency, and innovation within the academic project management space. By integrating key modules and employing robust architectural principles, the system provides a cohesive and effective platform for faculty and students alike. The use cases offer insights into the working dynamics of each actor, ensuring a user-centric and efficient project management solution. The visual representation in the form of a system diagram enhances the understanding of the intricate relationships between modules, reinforcing the commitment to a user-centric and efficient project management solution.

CHAPTER-6

IMPLEMENTATION

6.1 User Interface

6.1.1 Home Page

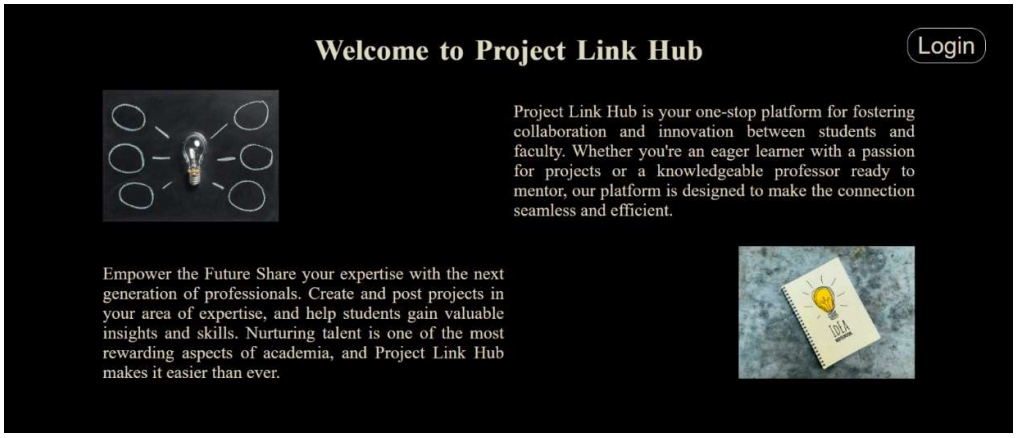

Fig 6.1
Home Page

6.1.2 Login Page

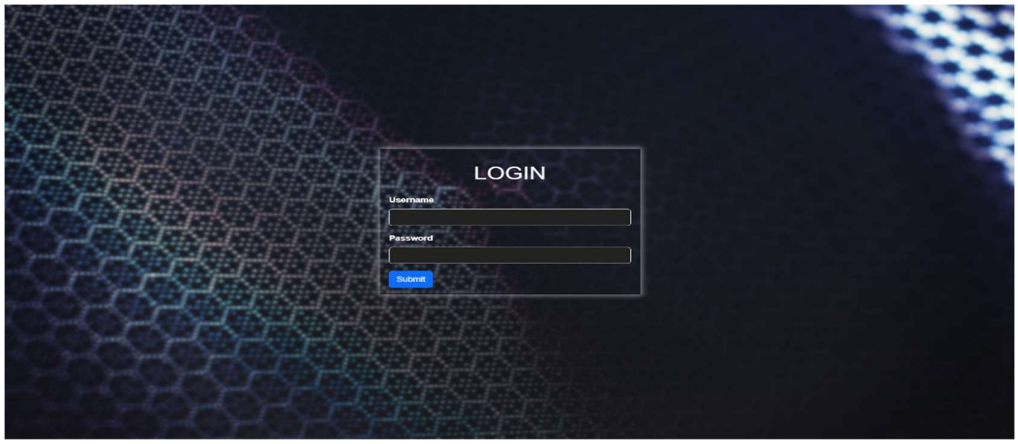

Fig 6.2
Login Page

6.1.3 Faculty Dashboard

6.1.3.1 Home Page

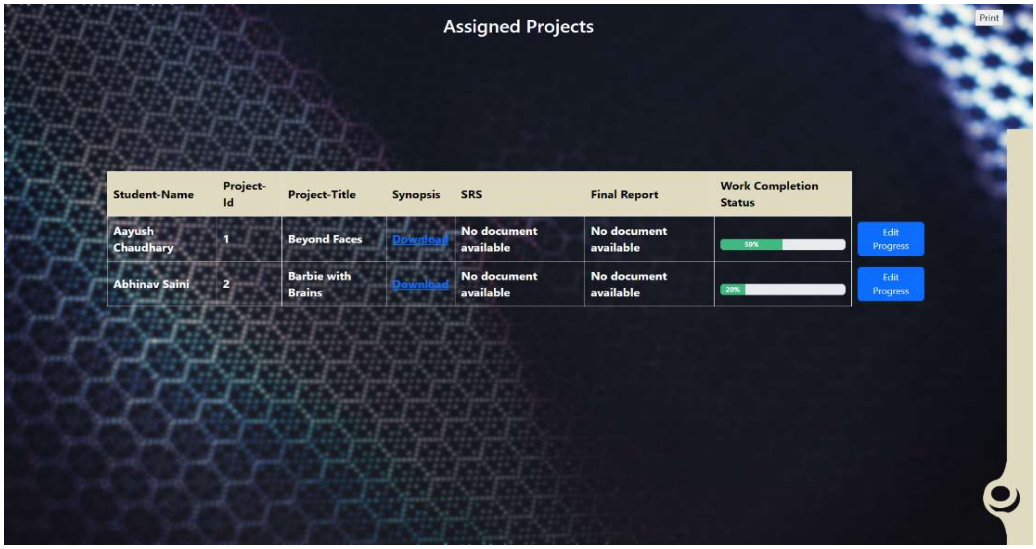

Fig 6.3
Faculty Dashboard

6.1.3.2 Suggestions

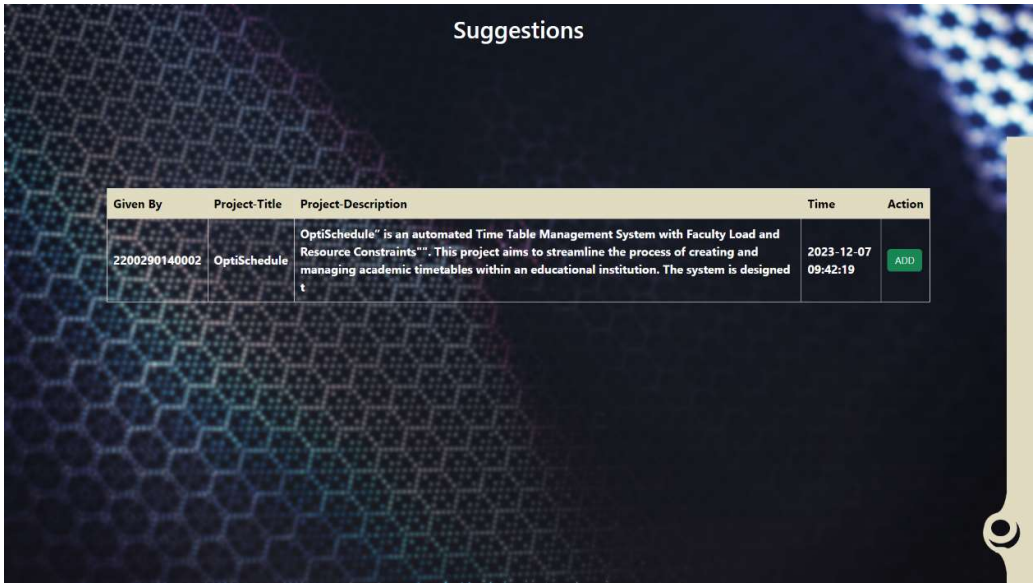

Fig 6.4
Suggestion Received

6.1.3.3 Add Project

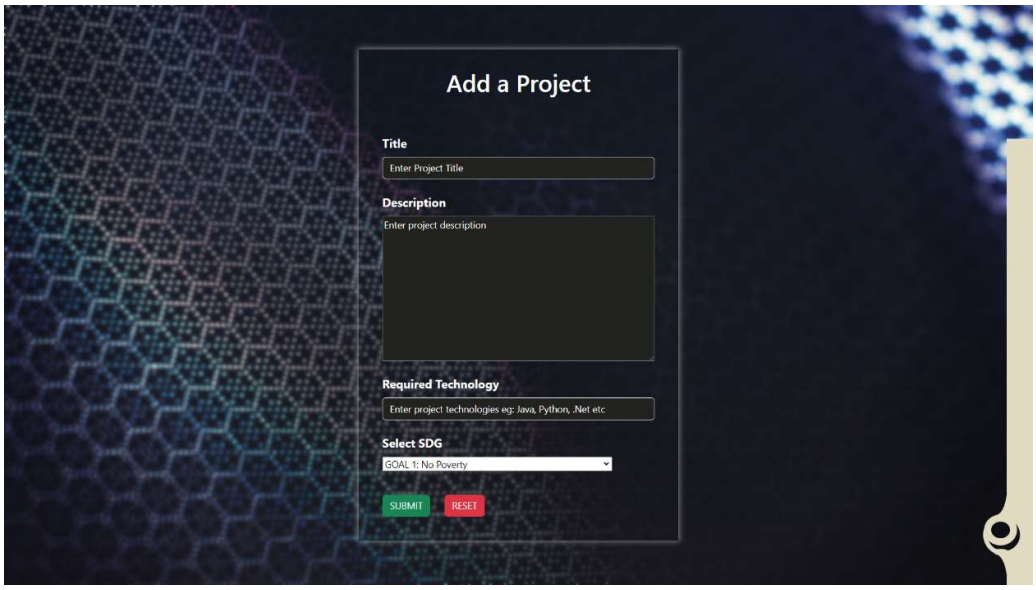

Fig 6.5
Add Project Page

6.1.3.4 Pending Requests

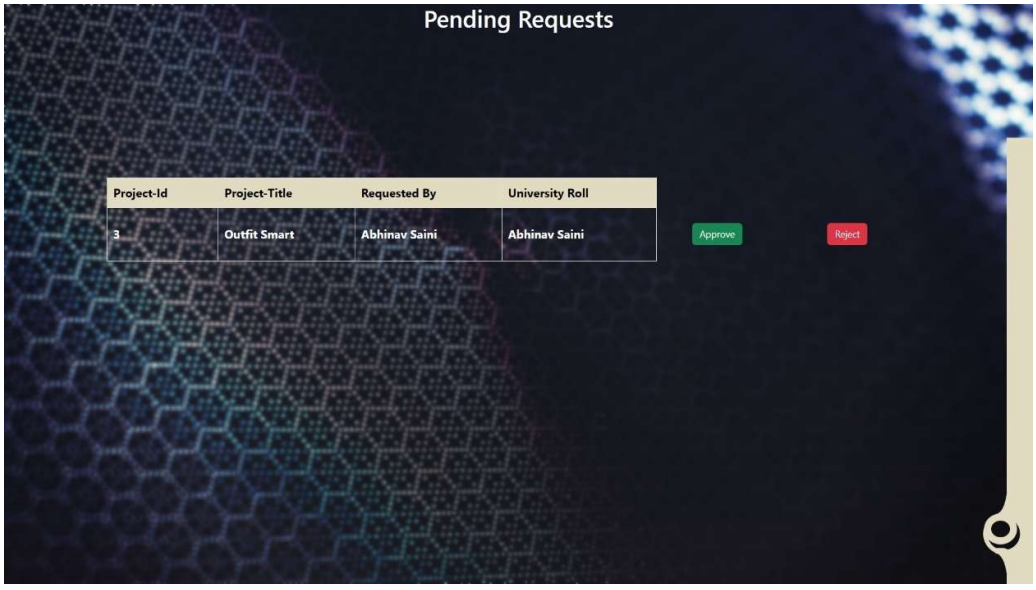

Fig 6.6
Pending Requests Page

6.1.4 Student Dashboard

6.1.4.1 Home Page

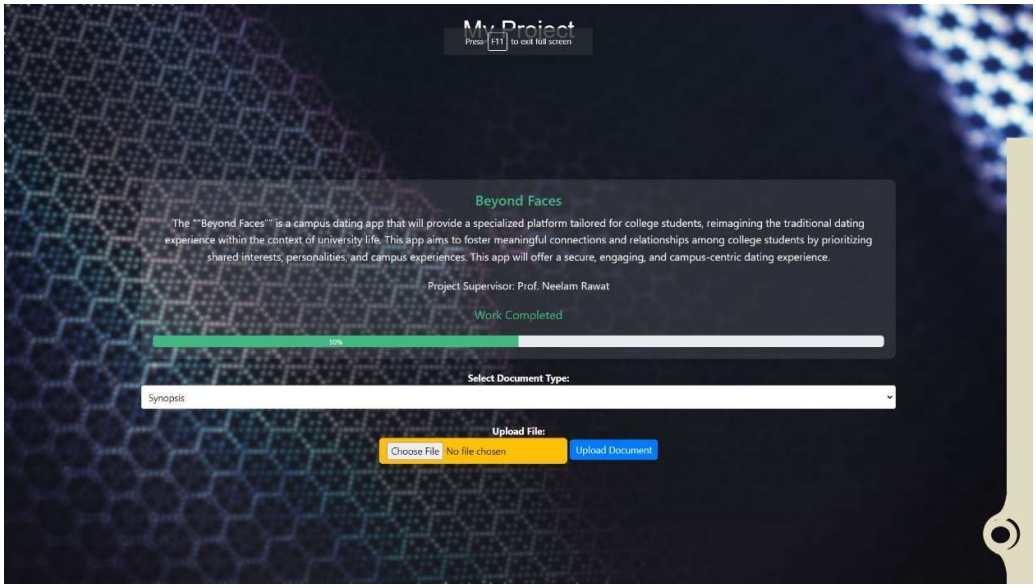

Fig 6.7
Student Dashboard

6.1.4.2 Projects

			prioritizing shared interests, personalities, and campus experiences. This app will offer a secure, engaging, and campus-centric dating experience.			
Prof. Neelam Rawat	2	Barbie with Brains	"Barbie with Brains" presents an innovative solution to enhance safety and convenience for individuals who need to interact with text-based information while engaged in activities such as driving or being in public spaces. This project introduces an automated text-to-voice conversion tool that leverages advanced technologies to transform written content into audible speech, enabling users to access information without the need to read. In scenarios where reading texts is impractical, unsafe, or not feasible, ""Barbie with Brains"" serves as a reliable companion that can convert text content, such as notifications, messages, directions, and announcements, into spoken words. The system incorporates natural language processing (NLP) and speech synthesis techniques to deliver a seamless and user-friendly experience.	GOAL 9: Industry, Innovation and Infrastructure	Unavailable	Request
Prof. Neelam Rawat	3	Outfit Smart	OutfitSmart"" is a groundbreaking application that transforms the process of outfit selection for various events and occasions into a seamless and enjoyable experience. By utilizing a combination of user input, color analysis, and smart algorithms, this app provides users with personalized outfit recommendations tailored to the occasion's dress code, color preferences, and time constraints. ""OutfitSmart"" aims to simplify outfit decisions while helping users look their best for every event.	GOAL 9: Industry, Innovation and Infrastructure	Available	Request
Prof. Neelam	4	MentorEase	The ""MentorEase app is a transformative solution designed to provide comprehensive mentoring and counseling support for MCA students. Rooted in the principles of personal growth and well-being, this application offers a secure and user-friendly	GOAL 4: Quality Education	Available	Request

Fig 6.8
Project List Page

6.1.4.3 My Suggestions

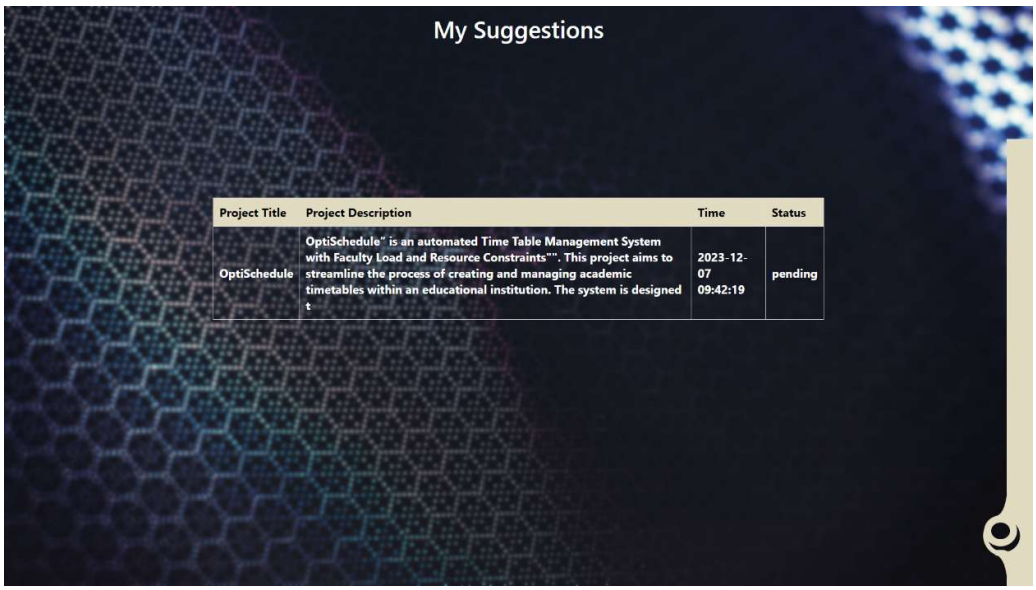

Fig 6.9
My Suggestions Page

6.1.4.4 Give Suggestions

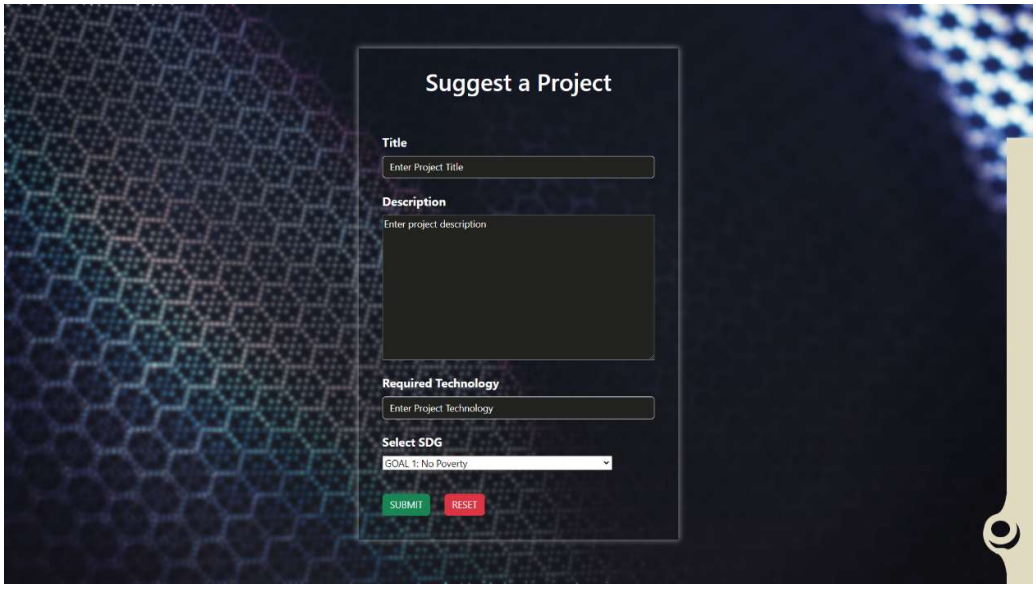

Fig 6.10
Give Suggestions Page

6.1.5 Change Password

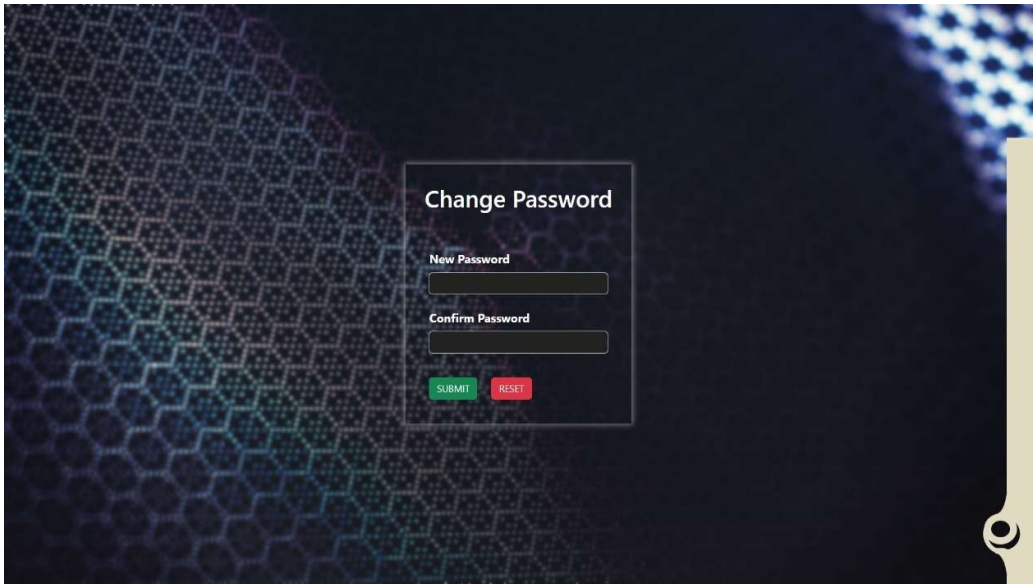

Fig 6.11
Change Password Page

6.1.5 Logout

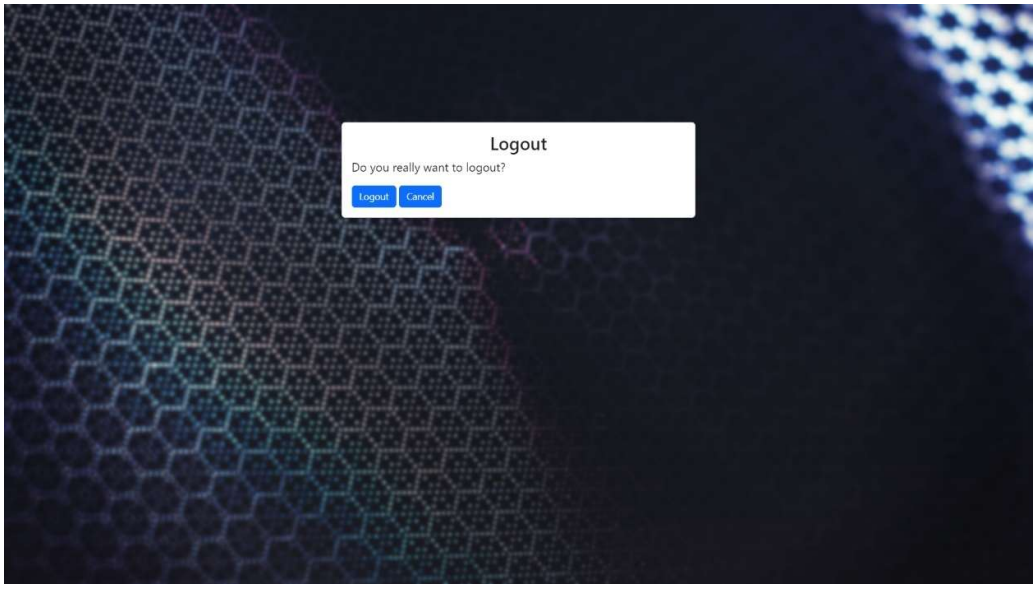

Fig 6.12
Logout Page

CHAPTER-7

TESTING

7.1 Introduction

The testing phase of the "Project Link Hub" plays a pivotal role in ensuring the system's functionality, reliability, and overall performance. The testing process is meticulously executed, encompassing various levels, including Unit Testing, Integration Testing, and System Testing. This chapter provides an elaborate insight into how each testing level is implemented to guarantee the robustness and effectiveness of the system.

7.2 Unit Testing

Unit Testing involves isolating individual components and verifying their correctness. Each module of the "Project Link Hub" underwent rigorous unit testing to ensure its functionality in isolation. For instance, the User Authentication module was subjected to tests for accurate user verification, secure session management, and proper role-based access control. The Project Management module underwent tests for seamless project idea submission, student request processing, and accurate project allocation.

7.3 Integration Testing

Integration Testing focuses on examining the interaction between different modules to ensure they work seamlessly together. In the "Project Link Hub," integration testing involved validating the communication and data flow between modules. For instance, the integration between the Project Management and Progress Monitoring modules was tested to confirm that project data is accurately transmitted, reviewed, and updated. Similarly, integration tests ensured that the User Authentication module effectively communicates with the Database for secure user access.

7.4 System Testing

System Testing assesses the entire system's behavior to ensure it meets specified requirements. The "Project Link Hub" underwent comprehensive system testing to evaluate end-to-end functionalities. This included testing user journeys such as logging in, submitting project ideas, reviewing progress, and suggesting new project ideas.

7.5 Manual Testing

In addition to automated testing processes, extensive manual testing was conducted to simulate real-world scenarios and user interactions. Test cases were designed to cover a range of inputs, including valid and invalid data, to validate the system's resilience an error handling capability. Manual testing also included exploratory testing to uncover any unforeseen issues and ensure a positive user experience. It includes following test cases:

7.5.1. Check Login Functionality there many possible test cases are:

- Test Case 1: Check results on entering valid User Id & Password
- Test Case 2: Check results on entering Invalid User ID & Password
- Test Case 3: Check response when a User ID is Empty & Login Button is pressed, and many more

Test Case ID	Test Case Description	Test Steps	Test Data	Expected Results	Actual Results	Pass/Fail
TU01	Check User Login with valid Data	1. Go to site localhost/GA03/login.php 2. Enter UserId 3. Enter Password 4. Click Submit	Userid = aditya2224 Password = kiet123	User should Login into an application	As Expected	Pass
TU02	Check User Login with invalid Data	1. Go to site localhost/GA03/login.php 2. Enter UserId 3. Enter Password 4. Click Submit	Userid = Aditya111 Password = kiet	User should not Login into an application	As Expected	Pass

7.5.2. Check project status before user press the request button:

- Test Case 1: Check results when project is available
- Test Case 2: Check results when project is unavailable

7.5.3. Check project fields before faculty add it to the database

- Test Case 1: Check results on entering valid project title, description, technology and SDG level
- Test Case 2: Check results on entering one of the fields is empty

7.5.4. Check project fields before user suggest it

- Test Case 1: Check results on entering valid project title, description, technology and SDG level
- Test Case 2: Check results on entering one of the fields is empty

7.6 User Acceptance Testing (UAT)

User Acceptance Testing involved collaboration with end-users, including students, faculty, and administrators, to validate that the system meets their needs and expectations. This phase allowed stakeholders to provide feedback on the user interface, functionality, and overall usability of the "Project Link Hub."

7.7 Conclusion

The testing chapter demonstrates a comprehensive approach to ensuring the quality and reliability of the "Project Link Hub." Through unit testing, integration testing, system testing, manual testing, and user acceptance testing, the system's various facets were thoroughly examined. This meticulous testing process contributes to the confidence in the system's performance, functionality, and user satisfaction, making the "Project Link Hub" a robust and dependable platform for academic project management.

CHAPTER-8

PERFORMANCE ANALYSIS

8.1. User-Friendly Interface:

- **Performance Analysis:**
    - **Objective:** Develop an intuitive and user-friendly interface.
    - **Metrics:** Evaluate the responsiveness of the interface using tools like Google Lighthouse or browser developer tools.
    - **Optimization Actions:** Optimize client-side code, use asynchronous loading for resources, and ensure efficient CSS and JavaScript practices.

8.2. Collaboration Enhancement:

- **Performance Analysis:**
    - **Objective:** Promote effective collaboration among students and faculty members.
    - **Metrics:** Measure the time taken for collaborative features, such as sharing and reviewing project ideas.
    - **Optimization Actions:** Optimize server-side code to handle concurrent collaboration efficiently, minimizing delays in communication.

8.3. Streamlined Approval Processes:

- **Performance Analysis:**
    - **Objective:** Facilitate a streamlined process for faculty members to review, approve, or reject student project proposals.
    - **Metrics:** Monitor the time taken for faculty members to review and provide feedback.
    - **Optimization Actions:** Optimize server-side logic to ensure timely approval/rejection and constructive feedback.

8.4. Centralized Project Management:

- **Performance Analysis:**

- **Objective:** Establish a centralized system for managing project ideas.
- **Metrics:** Evaluate the response time for project management actions, such as adding, editing, or deleting projects.
- **Optimization Actions:** Optimize database queries and ensure efficient project management functionalities.

8.5. Robust Security Measures:

- **Performance Analysis:**
  - **Objective:** Implement robust security measures to safeguard user data.
  - **Metrics:** Assess the impact of security measures on system performance.
  - **Optimization Actions:** Regularly update security protocols and ensure that security measures do not introduce noticeable latency.

8.6. Performance Optimization:

- **Performance Analysis:**
  - **Objective:** Optimize system performance to handle a substantial number of concurrent users.
  - **Metrics:** Conduct load testing to identify performance bottlenecks.
  - **Optimization Actions:** Optimize code, use caching mechanisms, and consider scaling options (vertical or horizontal) for handling concurrent users.

8.7. Compliance with Development Technologies:

- **Performance Analysis:**
  - **Objective:** Adhere to specified development technologies for consistency.
  - **Metrics:** Confirm that HTML, CSS, PHP, Bootstrap, and MySQL are well-integrated.
  - **Optimization Actions:** Ensure smooth interactions and minimize compatibility issues by following the specified technology stack.

8.8. Adherence to Scope:

- **Performance Analysis:**
  - **Objective:** Define and adhere to the project scope to maintain focused development efforts.
  - **Metrics:** Prioritize in-scope functionalities related to user registration, project proposal, and approval.

- **Optimization Actions:** Prioritize optimization efforts based on in-scope functionalities, considering future enhancements for out-of-scope elements.

8.9. Overall Assessment:

- **Conclusion:** The performance analysis highlights specific areas for optimization, including user interface responsiveness, collaboration features, approval processes, project management efficiency, and security measures. Continuous monitoring and targeted optimizations during development are crucial to ensuring a seamless user experience for the "Project Link Hub" platform.

CHAPTER-9

CONCLUSION & FUTURE ENHANCEMENT

9.1 Conclusion

The "Project Link Hub" stands as a transformative platform that revolutionizes project management within the educational realm. Throughout its development and deployment, the project has successfully achieved its objectives of enhancing collaboration, streamlining approval processes, and providing centralized project management. The journey of creating the "Project Link Hub" has been marked by dedication, innovation, and collaboration among the development team, stakeholders, and end-users.

As we conclude this phase of the project, it's essential to reflect on the achievements and acknowledge the challenges overcome. The "Project Link Hub" has not only streamlined project ideation and management but has also fostered a culture of innovation and engagement within the academic community. By providing a user-friendly interface and robust features, the platform has empowered students and faculty members alike to contribute meaningfully to academic projects.

Moving forward, it's crucial to recognize that the journey does not end here. Continuous improvement and adaptation are key to ensuring the long-term success and relevance of the "Project Link Hub." Future iterations of the platform will focus on addressing user feedback, incorporating emerging technologies, and expanding functionalities to meet evolving needs.

9.2 Future Enhancements

9.2.1. Advanced Collaboration Features: Incorporate features such as real-time collaboration tools, discussion forums, and messaging systems to facilitate seamless communication and collaboration among users.

9.2.2. Enhanced Data Analytics: Integrate data analytics capabilities to provide insights into project trends, user engagement, and system usage, enabling informed decision-making and strategic planning.

9.2.3. Integration with Learning Management Systems (LMS): Explore integration with existing LMS platforms to streamline project management processes and enhance user experience by leveraging existing educational infrastructure.

9.2.4. Mobile Application Development: Develop mobile applications for iOS and Android platforms to provide users with on-the-go access to the "Project Link Hub," enhancing convenience and accessibility.

9.2.5. Gamification Elements: Implement gamification elements such as badges, leaderboards, and rewards to incentivize active participation and engagement among users, fostering a dynamic and motivating environment.

9.2.6. AI-powered Recommendation System: Introduce an AI-powered recommendation system to suggest project ideas based on user preferences, interests, and past engagements, facilitating personalized project discovery.

9.2.7. Expanded User Roles and Permissions: Enhance role-based access control to accommodate additional user roles and permissions, catering to diverse user groups such as mentors, evaluators, and external collaborators.

9.2.8. Accessibility and Inclusivity: Ensure the platform adheres to accessibility standards and guidelines, making it accessible to users with disabilities and diverse learning needs, thus fostering inclusivity and diversity.

9.2.9. Enhanced Security Measures: Continuously update and enhance security measures to safeguard user data, prevent unauthorized access, and mitigate potential security threats, ensuring the confidentiality and integrity of information.

9.2.10. Community Engagement Initiatives: Launch community engagement initiatives such as webinars, workshops, and user forums to foster a vibrant community of practice, encouraging knowledge sharing, collaboration, and continuous improvement.

By incorporating these future enhancements, the "Project Link Hub" will continue to evolve as a dynamic, user-centric platform that empowers the academic community to thrive in the digital age. Through ongoing collaboration, innovation, and adaptation, the platform will remain at the forefront of transforming project management practices within educational institutions, driving positive outcomes for students, faculty, and administrators alike.

Bibliography

Online Platforms

During the development of the "Project Link Hub," various online platforms were analyzed for inspiration and reference. These include:

- Moodle: An open-source learning management system widely used for creating and delivering online courses.
- GitHub: A popular platform for hosting and collaborating on software development projects using version control.
- Canvas: A learning management system designed to support teaching and learning in various educational settings.
- Google Classroom: A digital learning platform developed by Google for schools and educational institutions to manage assignments and communication.
- Blackboard: A leading learning management system used by educational institutions worldwide for course management and online learning.

YouTube Channels

The following YouTube channels were referenced for educational content related to programming and computer science:

- Jenny's Lectures CS IT: A YouTube channel offering lectures and tutorials on computer science and information technology topics.
- Gaurav Sen: A popular Indian programming teacher known for his informative videos on software engineering concepts and interview preparation.
- Apna College: A YouTube channel providing tutorials on programming languages and web development in Hindi.
- CodeWithHarry: A Hindi-language YouTube channel offering tutorials on programming languages like Python, Java, and C++.

Reference Books

The development of the "Project Link Hub" drew insights from various reference books related to web development, collaboration, and project management. These include:

- "Web Development with HTML, CSS, and JavaScript" by Jon Duckett
- "PHP and MySQL Web Development" by Luke Welling and Laura Thomson

- "Agile Project Management with Scrum" by Ken Schwaber and Mike Beedle
- "Collaborative Learning Techniques: A Handbook for College Faculty" by Elizabeth F. Barkley
- "Effective Project Management: Traditional, Agile, Extreme" by Robert K. Wysocki
- "Version Control with Git" by Jon Loeliger and Matthew McCullough

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2. Welling, L., & Thomson, L. "PHP and MySQL Web Development."
3. Schwaber, K., & Beedle, M. "Agile Project Management with Scrum."
4. Barkley, E. F. "Collaborative Learning Techniques: A Handbook for College Faculty."
5. Wysocki, R. K. "Effective Project Management: Traditional, Agile, Extreme."
6. Loeliger, J., & McCullough, M. "Version Control with Git."