Palestine Technical University – Kadoorie

College of Engineering and Technology

Department of Computer Systems Engineering

Course name:

Software Engineering

Project title:

Developing Graduation Projects Hub Website

By:

Ayat Hamada -202010377

Falastin Bawaqna – 202110016

Iman Mahfouth - 202110263

Supervisor:

Dr. Nael Salman

Tulkarm, Palestine

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Chapter 1 :Introduction

Embarking on a graduation project is a pivotal moment for students, yet students struggle with lack of resources, guidance, and collaboration opportunities and guidance. To address this, we decided to create a website to facilitate graduation project improvement. Our platform enables users to access and share ideas, fostering innovation and collaboration for enhanced project outcomes.

1.1 Purpose:

The purpose of this document is to define the requirements for the Graduation Project Improvement Platform. This platform aims to provide students with resources, guidance, and collaboration opportunities to enhance their graduation projects.

1.2 Project Scope:

This document covers the functional and non-functional requirements of the platform, which will allow users to access and share project ideas, collaborate with peers, and receive guidance from mentors

1.3 Intended Audience:

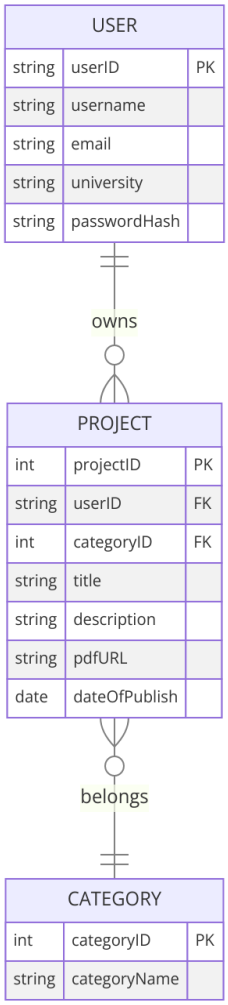
This document is intended for project managers, developers, testers, stakeholders, UX/UI designers, and system administrators. It aims to provide project managers with a comprehensive understanding of the project scope, deliver detailed specifications for developers, offer a basis for testers to develop test plans, engage stakeholders to ensure their needs are met, assist UX/UI designers in creating a user-friendly interface, and outline the operational requirements for system administrators to ensure effective deployment and maintenance of the platform.

Chapter 2 :Overall Description:

2.1 Product Perspective:

The GPI Platform is a web-based application that facilitates the sharing of project ideas and collaboration among students and mentors. It will be accessible via modern web browsers and designed to be user-friendly.

2.2 Product Features(ER diagram) :



2.3 User Classes and Characteristics:

- *Students*: Primary users who submit and browse project ideas, collaborate with peers, and seek guidance from mentors.
- *Mentors*: Experienced individuals who provide feedback and guidance on student projects.
- *Administrators*: Manage user accounts, maintain the resource library, and oversee platform operations.

2.4 Operating Environment:

- Web-based application accessible via internet browsers
- Compatible with major browsers (Chrome, Firefox, Safari, Edge)
- Responsive design for mobile and desktop devices

2.5 Design and Implementation Constraints :

- Compliance with data privacy laws (e.g., GDPR)
- Secure user authentication and data storage
- Scalability to handle a growing number of users

2.6 Assumption Dependencies:

The platform assumes users will have stable internet access and use modern web browsers, with basic computer literacy. It relies on sufficient hardware and software resources, and compliance with data protection regulations. The project depends on the chosen technological stack, third-party services for features like authentication and email notifications, and support from educational institutions. Active participation from students and mentors is crucial, along with robust security measures and the availability of a skilled development team to ensure successful implementation and maintenance.

Chapter 3: System Features:

3.1 Description and Priority:

The platform assumes that users will have stable internet access and modern browsers, with basic computer literacy, and will submit content in compatible formats. It relies on sufficient hardware and software resources and compliance with data protection regulations. Critical dependencies include the availability of the chosen technological stack, third-party services for features like authentication and notifications, and institutional support. Active participation from students and mentors is essential, alongside robust security measures and a skilled development team to meet the project's timeline and quality standards.

3.2 Stimulus / Response sequences:

The Graduation Project Improvement Platform aims to address the common challenges students face during their graduation projects, such as lack of resources, guidance, and collaboration opportunities. By providing a centralized platform where users can access and share project ideas, collaborate with peers, and receive mentorship from experienced individuals, the platform fosters innovation and enhances project outcomes. The need for such a platform is driven by the growing demand for improved educational tools that facilitate effective project management, promote peer learning, and provide structured guidance, ultimately helping students achieve better academic and professional results.

3.3 Functional Requirements :

a. User Registration and Profile Creation:

Students should be able to register on the platform and create a profile, providing essential details such as their name, academic institution, field of study, and project category.

b. Project Listing and Search Functionality:

Students should be able to list their graduation projects on the platform, including project details, objectives, and progress. Additionally, they should be able to search for projects based on the category of the project.

c. Messaging System:

A messaging system will be implemented as a contact form to facilitate communication between students and project owners. This allows students to inquire about project details and seek clarification.

CLIENT/SERVER SYSTEM:

The term client/server refers primarily to an architecture or logical division of responsibilities, the client is the application (also known as the front-end), and the server is the DBMS (also known as the back-end).

A client/server system is a distributed system in which,

- Some sites are client sites and others are server sites.
- All the data resides at the server sites.
- All applications execute at the client sites.

Chapter 4: EXTERNAL INTERFACE REQUIREMENTS:

4.1 USER INTERFACES :

- Front-end software: HTML & CSS.JS.
- Back-end software: Oracle SQL.

4.2 HARDWARE INTERFACES :

- Windows.
- A browser which supports HTML & CSS.

4.3 SOFTWARE INTERFACES :

Following are the software used for the online shopping website. <Include the software details as per your project>

Software used	Description
Operating system	We have chosen the Windows operating system for its best support and user-friendliness.
Database	save the order records, customer and seller records we have chosen oracle database.
HTML & CSS	To implement the project we have chosen HTML & CSS languages for its more interactive interface of website

4.4 COMMUNICATION INTERFACES :

This project supports all types of web browsers. We are using simple electronic forms for the order forms etc.

Chapter 5 : NONFUNCTIONAL REQUIREMENTS

5.1 PERFORMANCE REQUIREMENTS

The steps involved to perform the implementation of online database are as listed below:

E-R DIAGRAM:

The E-R Diagram constitutes a technique for representing the logical structure of a database in a pictorial manner. This analysis is then used to organize data as a relation, normalizing relation and finally obtaining a relation database.

- **ENTITIES**: Which specify distinct real-world items in an application.
- **PROPERTIES/ATTRIBUTES**: Which specify properties of an entity and relationships.
- **RELATIONSHIPS**: Which connect entities and represent meaningful dependencies between them

5.2 SAFETY REQUIREMENTS:

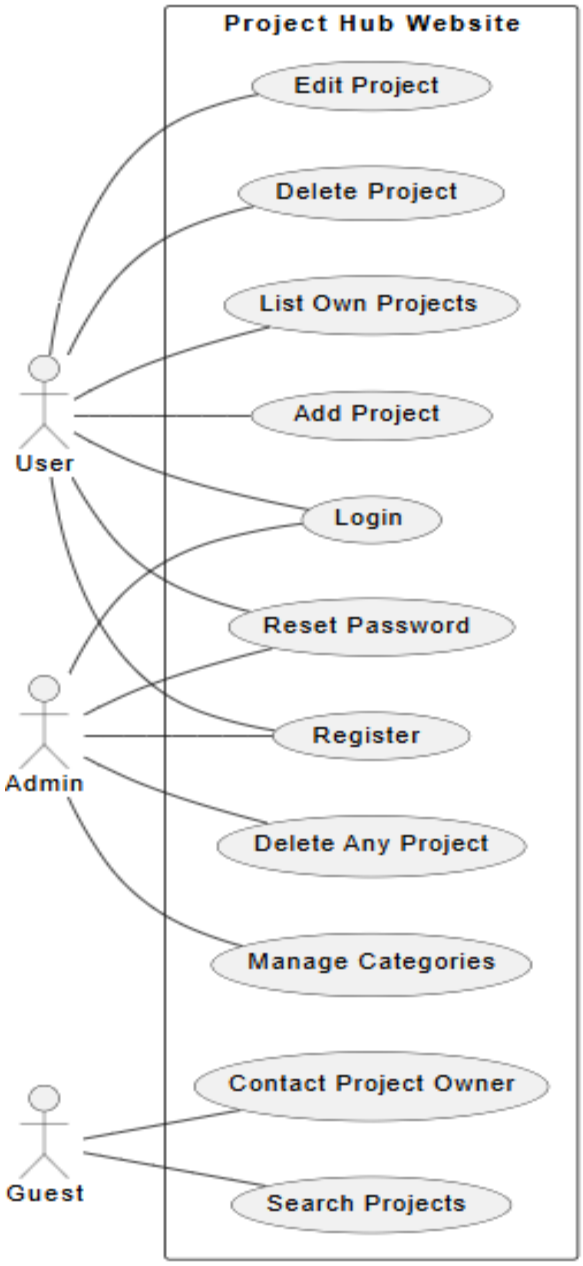
The Graduation Project Improvement Platform must ensure the highest level of data security and user privacy. This includes implementing robust encryption for data storage and transmission, secure authentication mechanisms such as multi-factor authentication, and regular security audits to identify and address vulnerabilities. Access controls must be strictly enforced to ensure that only authorized users can access sensitive information. Additionally, compliance with relevant data protection regulations like GDPR is mandatory to safeguard user data and maintain trust. These measures are critical to protect the platform from data breaches, unauthorized access, and other security threats.

5.3 SECURITY REQUIREMENTS:

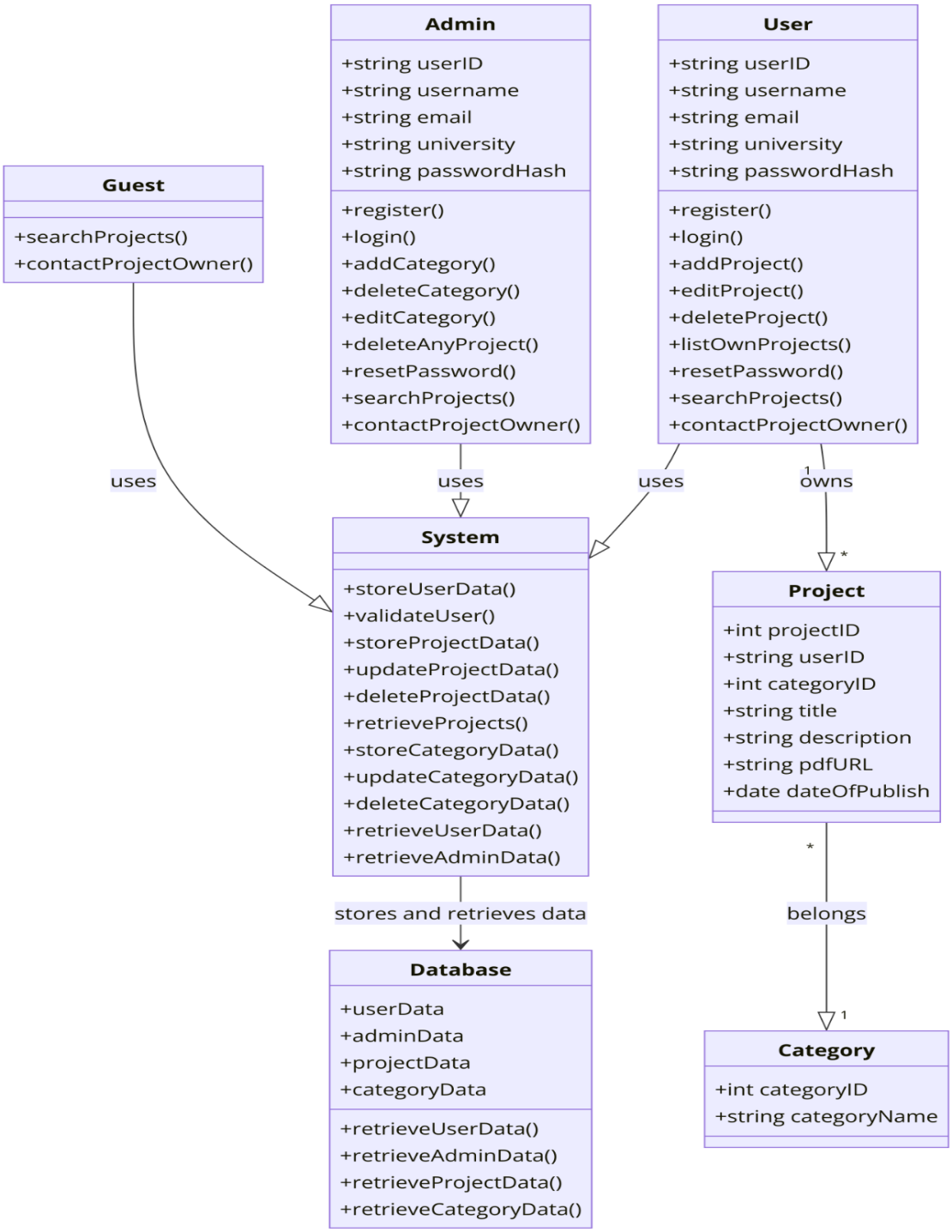
The platform must ensure robust security by encrypting data, implementing multi-factor authentication, and enforcing role-based access control. Compliance with GDPR, regular security audits, secure coding practices, and penetration testing are essential. Additionally, an incident response plan, routine data backups, and continuous monitoring are necessary to maintain a secure and reliable platform for all users.

CHAPTER 6 : SYSTEM MODELS

6.1 Use-case Diagrams:

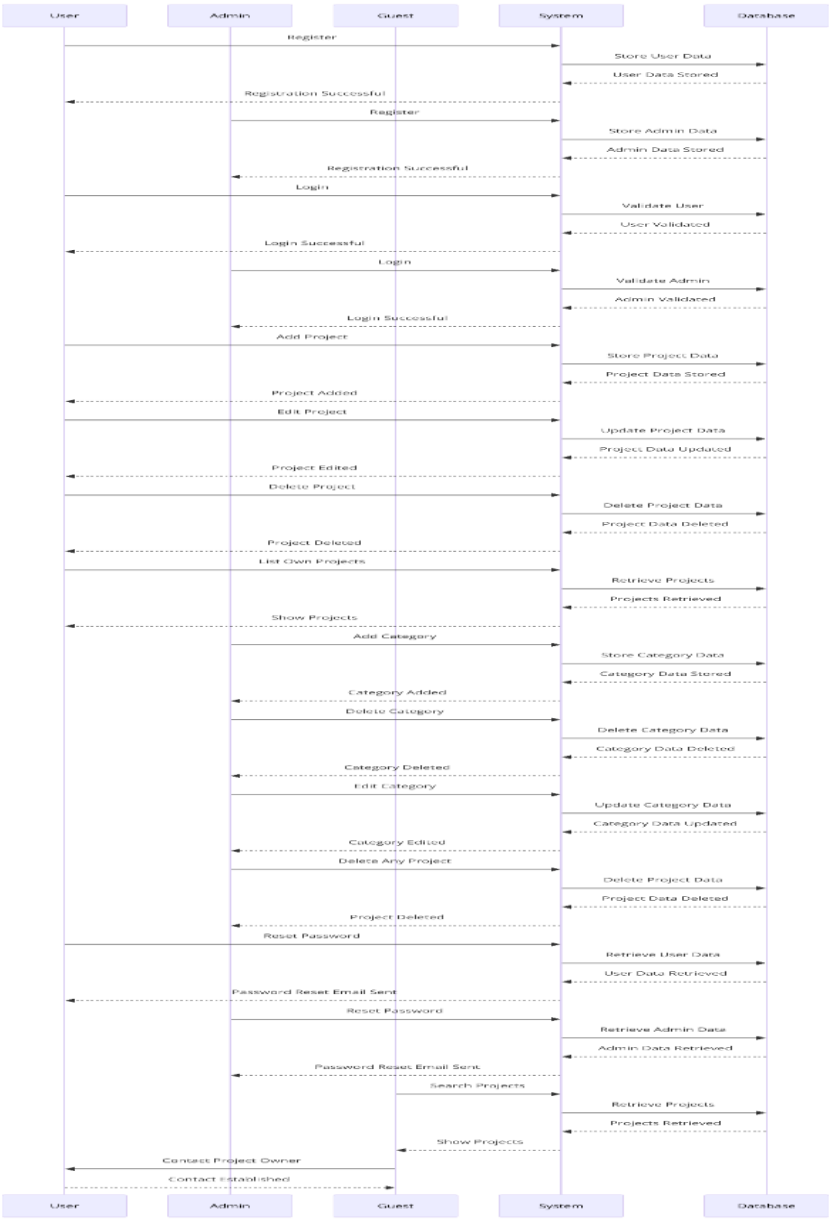


6.2 Class Diagram:



6.3 Sequence Diagram:

https://drive.google.com/file/d/1eX32gEExQiVwR24bf_H8Y5eCzHZGeNZa/view?usp=sharing



Chapter 7 : Implementation:

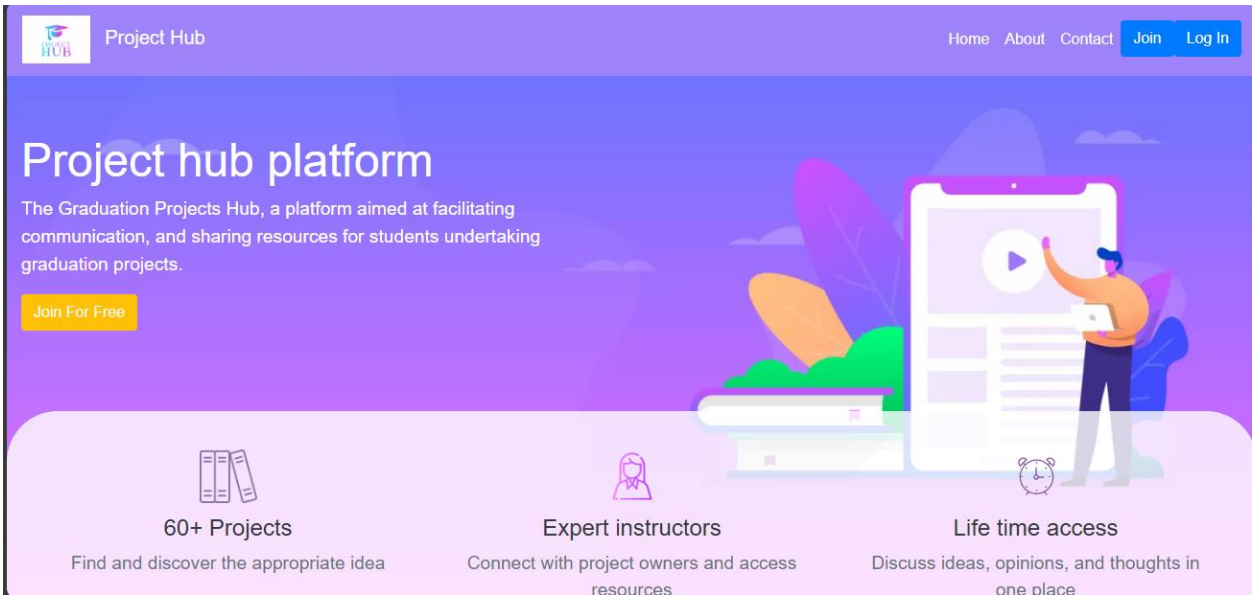
7.1 back-end Implementation :

[SoftwareProject/MCV.net at master · flesten-ali/SoftwareProject (github.com)]

7.2 front-end Implementation :

https://github.com/Iman-Mahfouth/SoftwareProject.git

Fig 8.1 main page design (the Project Hup platform) :



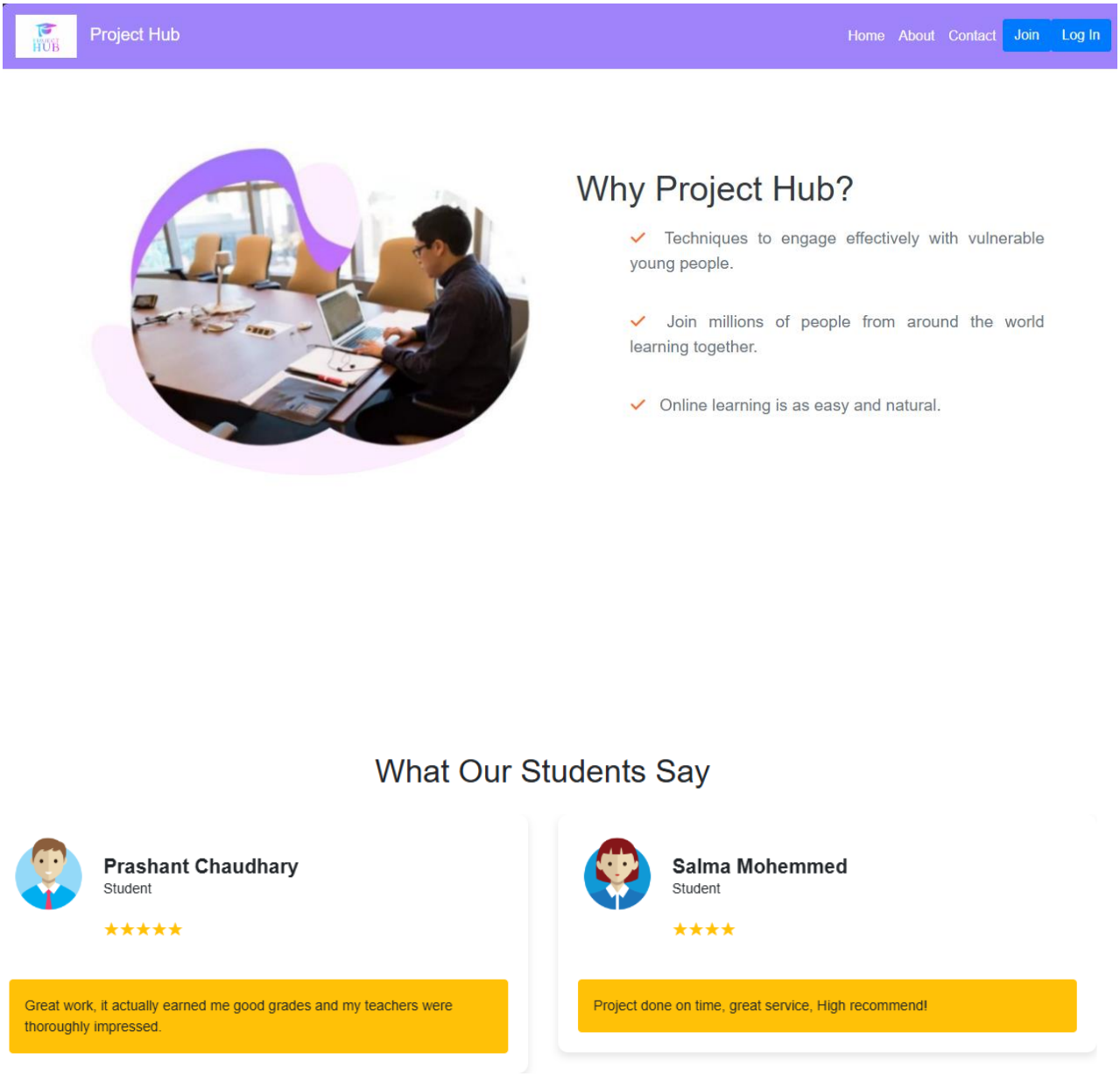


Fig 8.2 Sign up (Register) :

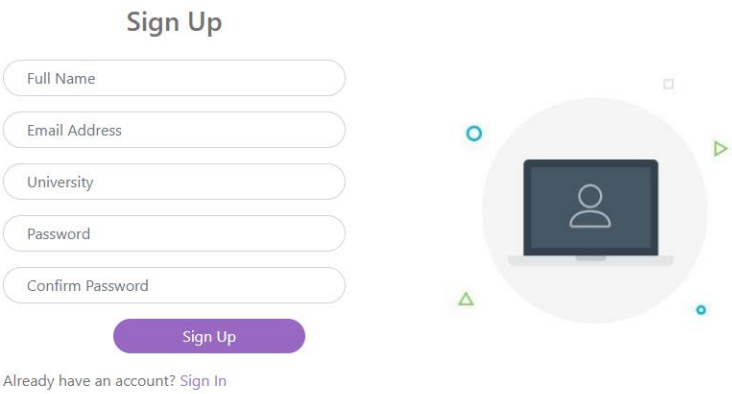

Sign Up
Full Name
Email Address
University
Password
Confirm Password
Sign Up
Already have an account? Sign In

Fig 8.3 Log in:

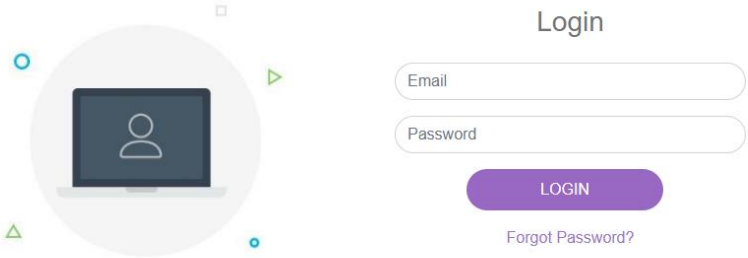

Login
Email
Password
LOGIN
Forgot Password?

Fig 8.4 contact us model :

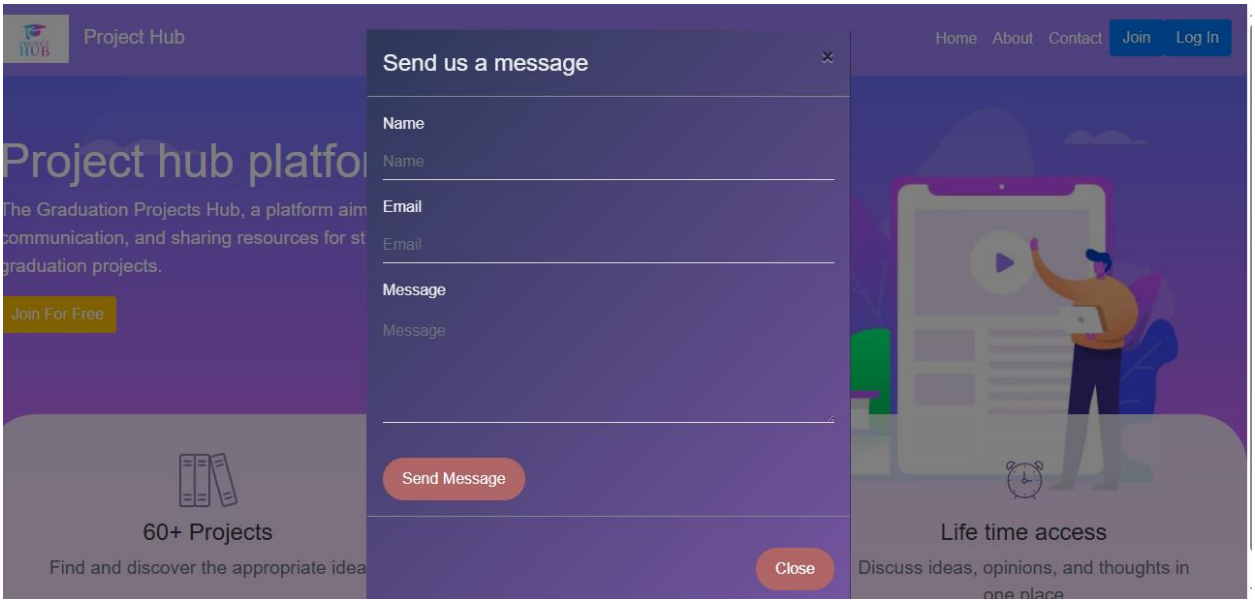


Fig 8.5 Join Us page (the Project Hub Welcome Page) :

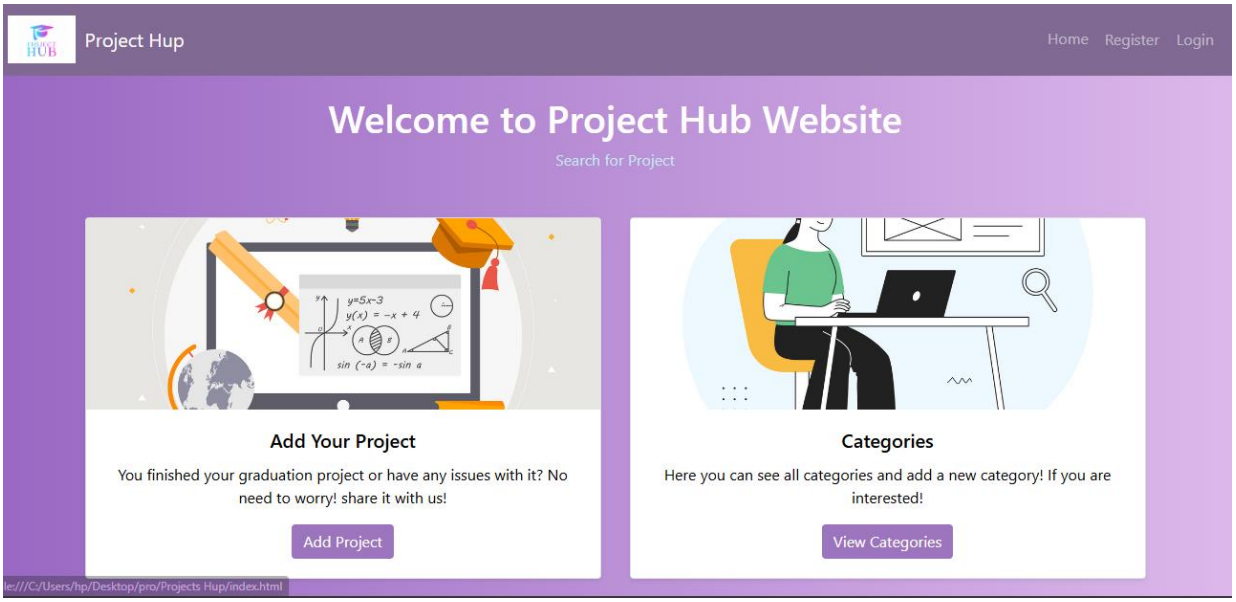


Fig 8.5 Projects Page(Create, Delete, Edit, Show projects details) :

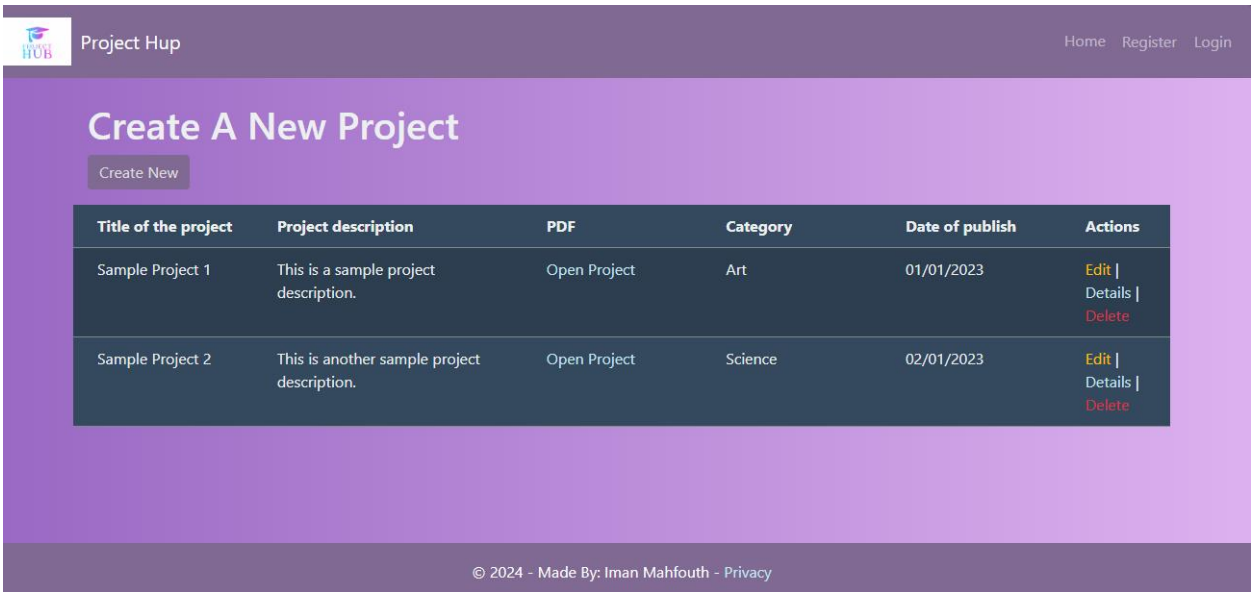


Fig 8.5.1 Edit Project:

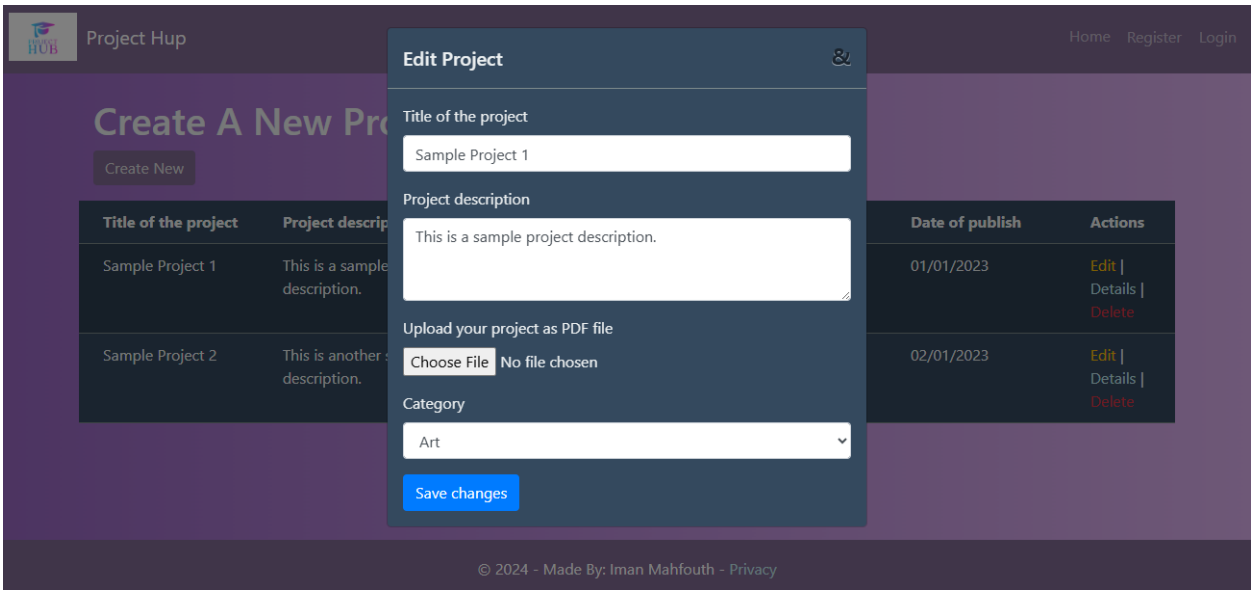


Fig 8.5.2 project details:

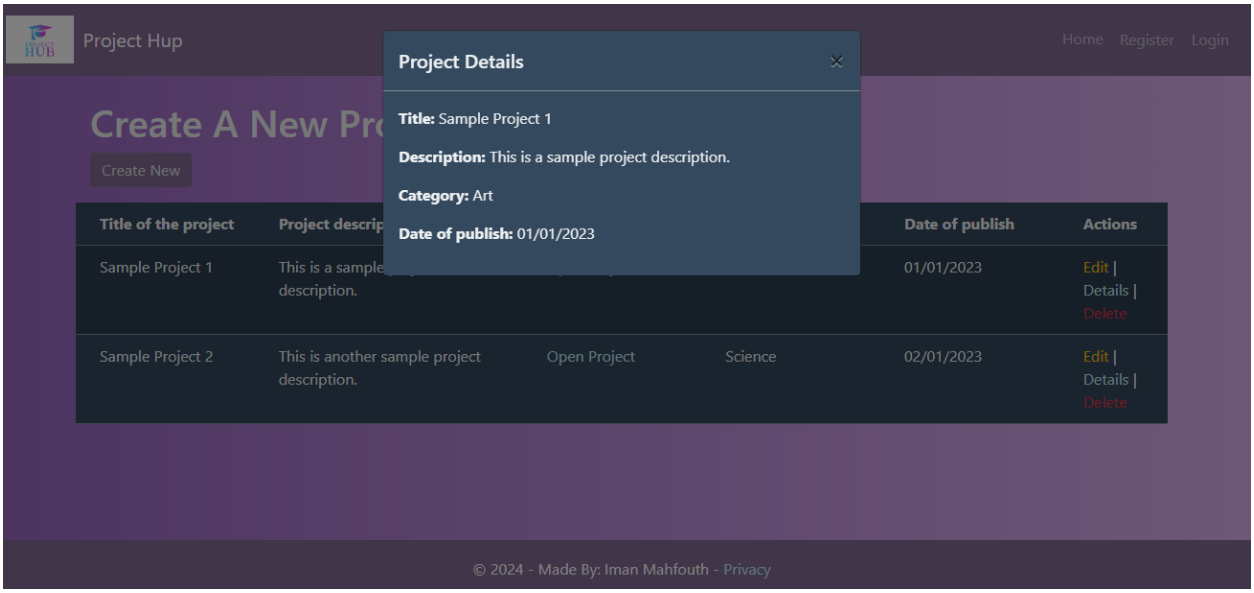
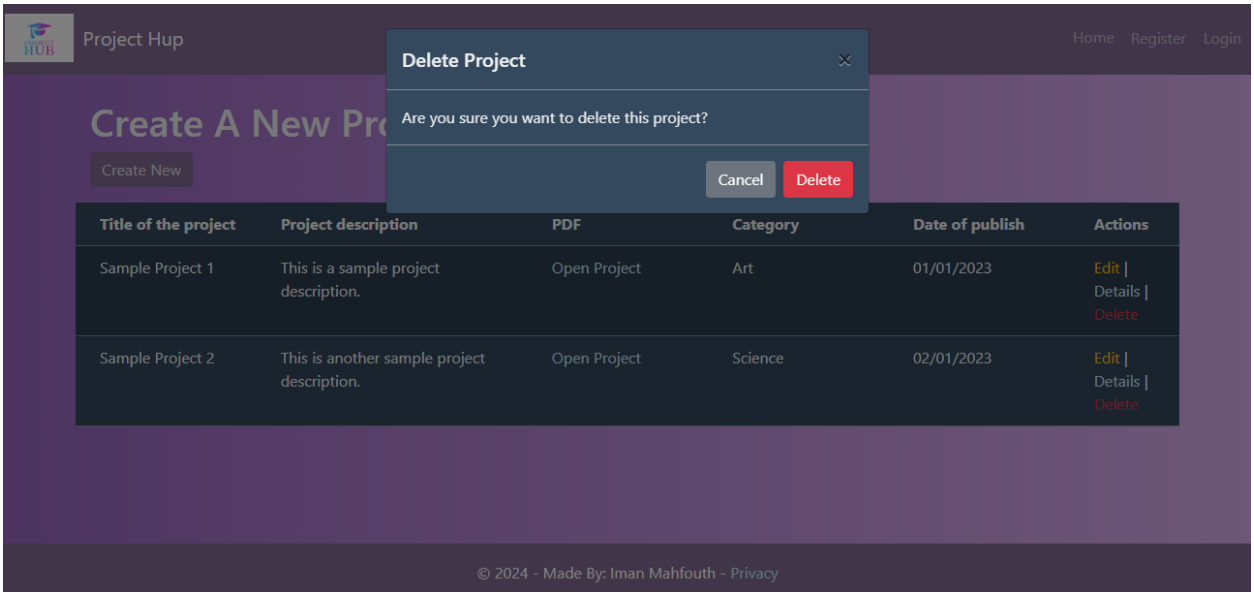
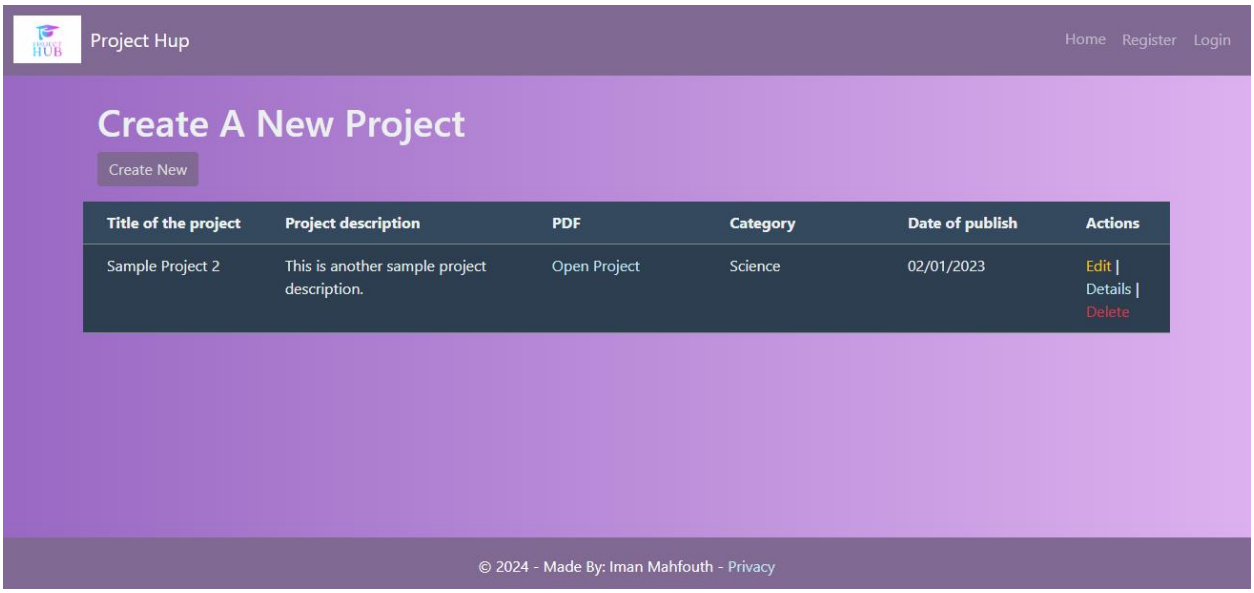


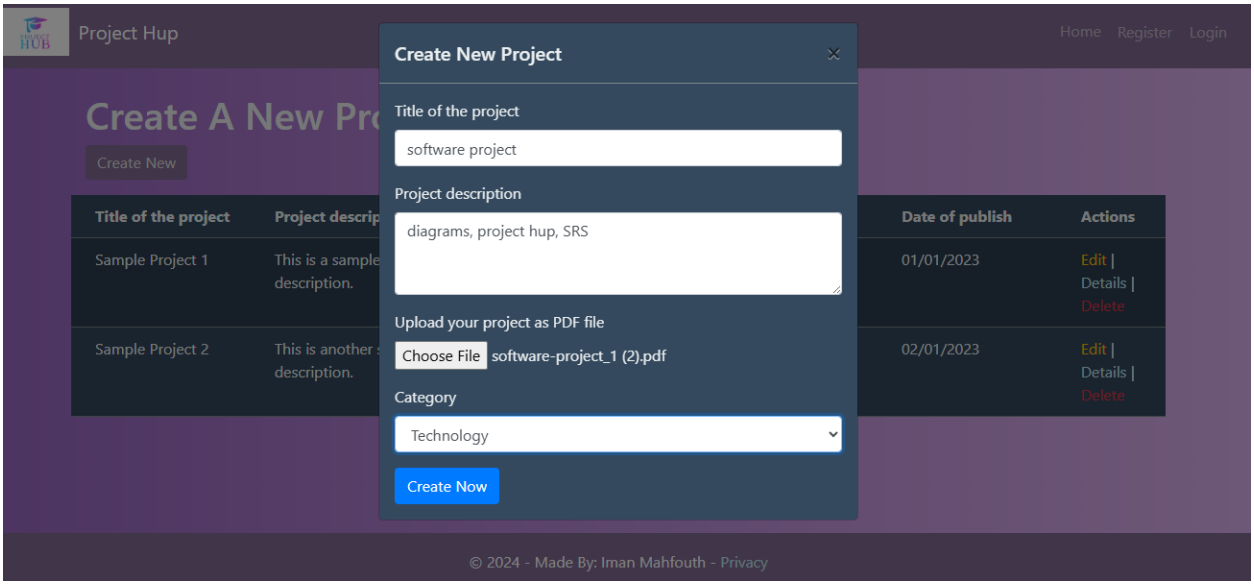
Fig 8.5.3 Delete Project:

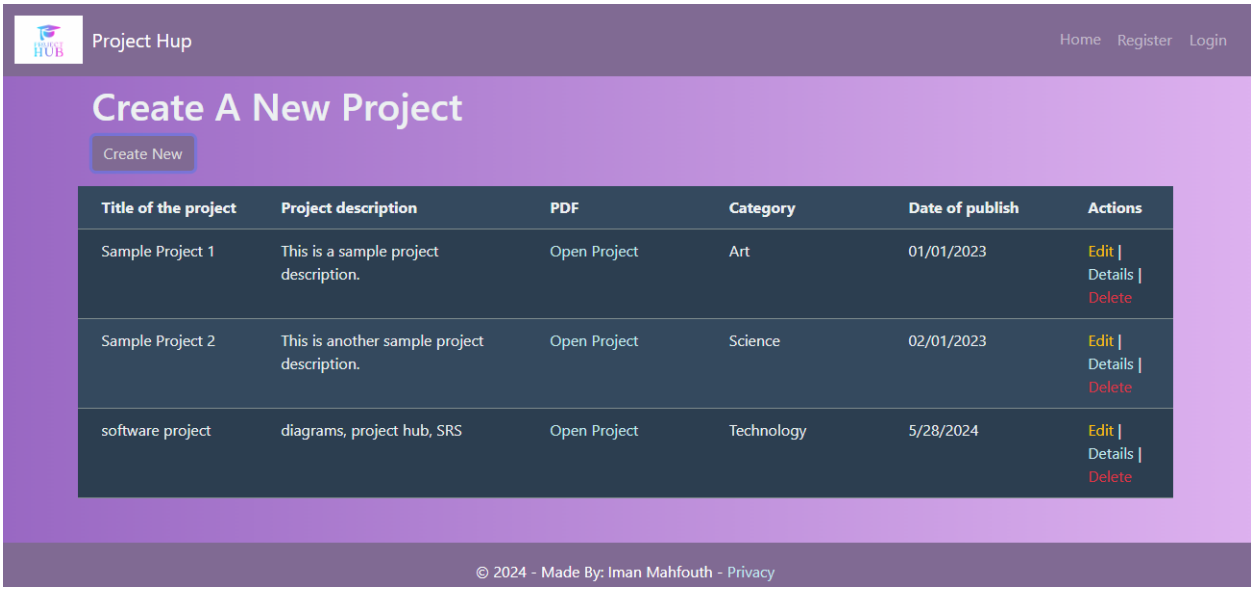




the project is successfuly deleted.

Fig 8.5.4 Create a new project:





the project is successfuly added.

Fig 8.6 Categories Page (Create, Delete, Edit, Show categories) :

Fig 8.6.1 Create New Category:

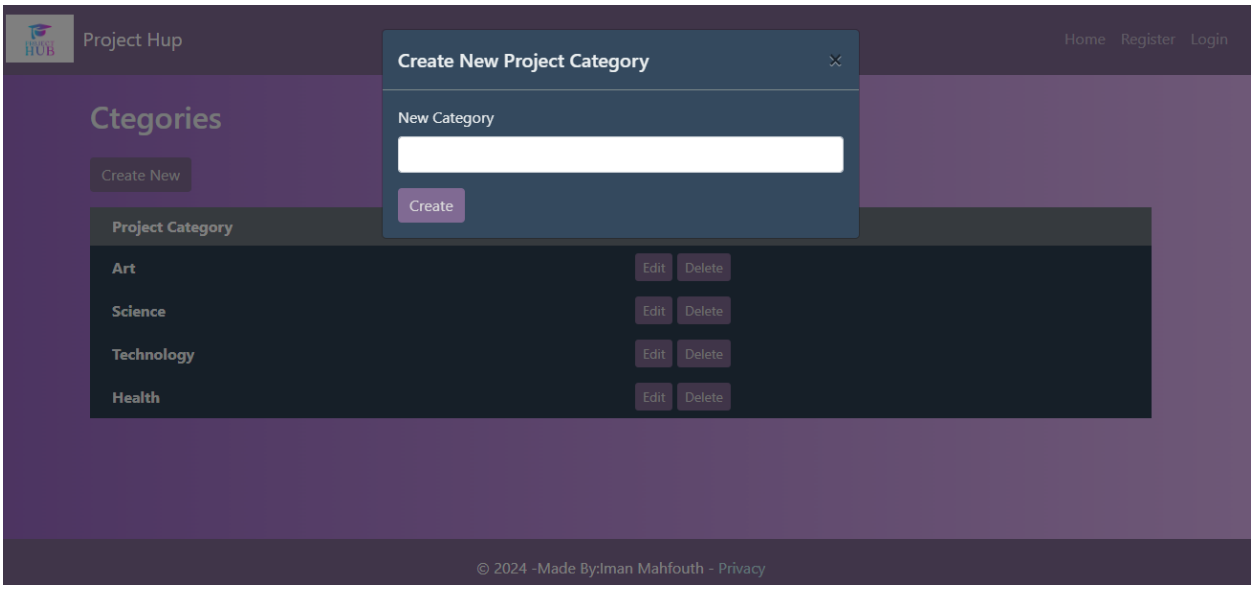


Fig 8.6.2 Edit Category Name:

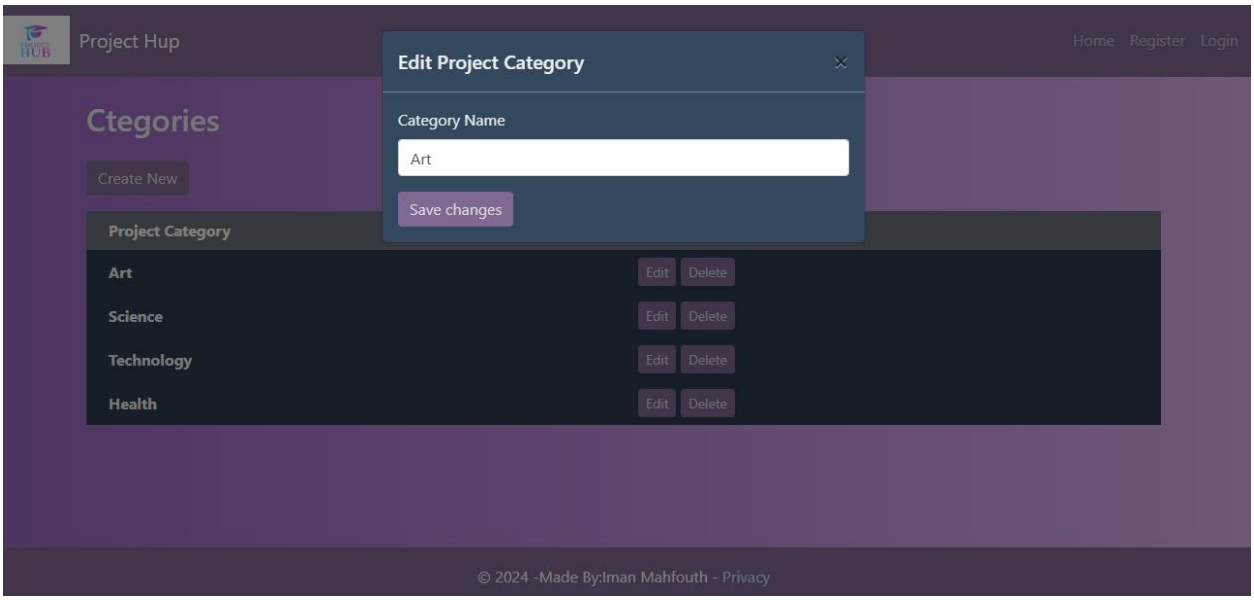


Fig 8.6.3 Delete Category:

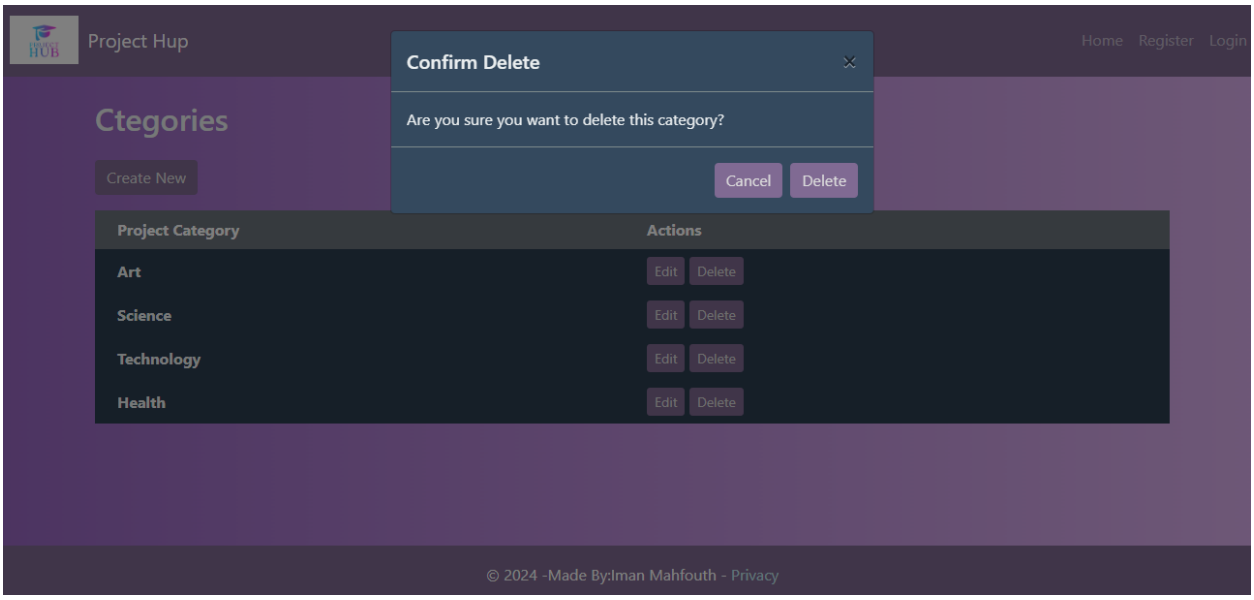
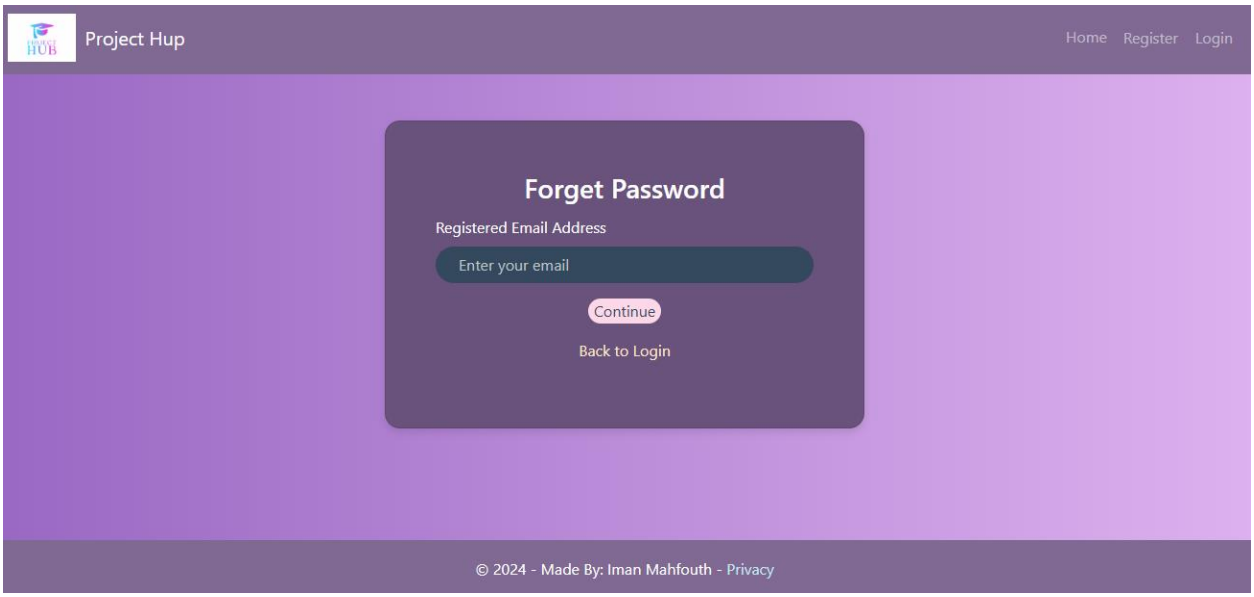


Fig 8.7 Forget Password :



Conclusion:

In summary, our project website addresses students' challenges by providing a platform for accessing resources, guidance, and collaboration opportunities. We prioritized software quality attributes to ensure reliability, performance, usability, and compliance. Our goal is to foster a culture of innovation and collaboration among students, empowering them to enhance their project outcomes. We're excited about the positive impact our website will have on students' academic and professional journeys.