PROJECT REPORT

ON

"Project Community"

BY

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SAVITRIBAI PHULE PUNE UNIVERSITY

MASTER IN COMPUTER APPLICATION

MAHARASHTRA EDUCATION SOCIETY's

INSTITUTE OF MANAGEMENT AND CAREER COURSES

(IMCC), PUNE-411038

2023-24

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Ref. No. MES IMCC / 399/ 2023 – 24/ **Date:13/04/2024**

CERTIFICATE

This is to certify that the Project Report entitled

"Project Community"

is prepared by

Sairaj Shirish Lumpatki

M.C.A. Semester IV Course for the Academic Year 2023-24 at M.E. Society's Institute of Management & Career Courses (IMCC), Pune - 411038.
M.C.A Course is affiliated to Savitribai Phule Pune University.

To the best of our knowledge, this is original study done by the said student and important sources used by him/her have been duly acknowledged in this report.

The report is submitted in partial fulfillment of M.C.A Course for the Academic Year 2023-224 as per the rules and prescribed guidelines of Savitribai Phule Pune University.

Dr. Ravikant Zirmite
Head, Dept of MCA
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Internal Examiner

External Examiner

CERTIFICATE

This is to certify that the student Sairaj Shirish Lumpatki has completed the project work entitled "*Project Community*" under my guidance. The report is submitted in partial fulfillment of M.C.A. Course for the Academic Year 2023-2024 as per the rules & prescribed guidelines of Savitribai Phule Pune University. His work is found to be satisfactory and complete in all respects.

Mrs. Darshana Yadav
(Internal Project Guide)

Acknowledgement

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Thank you all for your unwavering support and belief in my abilities.

Sincerely,

Sairaj Shirish Lumpatki

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1.1 Institute Profile:

Institute of Management and Career Courses (IMCC) is a premier Management Institute, established in 1983 by Maharashtra Education Society (MES) for providing quality education and technical expertise at the Post Graduation Level in the Fields of Computers and Management. The Institute is recognized by SPPU under Section 46 of Pune University Act, 1974 and Section 85 of Maharashtra University Act, 1994 and Approved by AICTE New Delhi to conduct MCA and MBA programmers. The Institute is Located at 131, Mayur Colony, Kothrud, Pune-411038 having 30,000 sq. ft-built area & totally independent campus. IMCC is recognized as a Ph.D. Research Centre under the Faculty of Management, SPPU. IMCC has 38 years standing & it is well- known for its conducive educational atmosphere. IMCC focuses on the all-round development of its students. Thus, apart from excellence in academics, students develop their inner potential by way of active participation in co-curricular & extracurricular activities. IMCC has developed excellent rapport with Industry by way of Guest Lectures, Seminars, Workshops, Industrial Visits & Placements. The main motto of the Institute is to instill the concepts of total personality development in the students. The emphasis is laid on 'Teacher Disciple Relationship' in place of 'Boss Subordinate' relationship at their assignments. The preamble of IMCC ``FACTANON-VERBA" lucidly means that the Institute produces the new breed of professionals, who's only deeds will speak. The zooming enthusiastic, rational, and excellent external endeavors are being imbibed in the students to prove their mettle. The conducive milieu of the Institute melds the budding managers to reveal in managing flexibility, integration, change and transformation. These 'would be' professionals are channelized in such a way to 'orchestrate' and deploy business and technological management skills in a synergistic manner to grab the tangible success. The faculty members put their relentless efforts in educating the students to synthesize business management acumen and technology insights in a creative manner.

1.2 Abstract:

1.Project Title: ”Project Community”

2.Key technologies: HTML, CSS, JavaScript and its Frameworks- Node, Express, Firebase Database.

3.Core Features:

a. User Authentication

b. Effective Payment Interface for Transactions

c. Validated Fields for Security Concern

d. Upload of multiple Project Works

1.3 Existing System:

Before the development of "Project Community," the process of buying and selling intellectual property lacked a centralized and efficient platform. Creators often relied on individual websites, forums, or marketplaces, each with its
limitations and drawbacks.

There are few existing systems like Project Community like,

1. Etsy: While focused on handmade and vintage items, Etsy also hosts a significant number of digital downloads, including art prints, patterns, and digital tools, providing a platform for creators to monetize their digital creations.

1. Fiverr: Fiverr is a freelance marketplace where individuals offer services, including digital services such as graphic design, writing, programming, and more, allowing creators to sell their skills and expertise.

Codecanyon: Codecanyon is part of the Envato Market network and specializes in selling scripts and plugins for websites and applications, providing developers with a platform to sell their code.

Need for the system:

The need for the "Project Community" system arises from several key factors:

1. Centralized Marketplace: There is a lack of a centralized platform specifically dedicated to the buying and selling of intellectual property such as project documentation, research papers, and code files. Creators and buyers often struggle to find a single platform that caters to their needs efficiently.
2. Monetization Opportunities: Many creators produce valuable intellectual property but struggle to monetize it effectively. Existing platforms may offer limited monetization options or take a significant cut of the profits, making it challenging for creators to earn fair compensation for their work.
3. Secure Transactions: Without a dedicated platform, creators and buyers may resort to using unsecured channels for transactions, exposing themselves to risks such as copyright infringement, unauthorized distribution, and payment fraud. A secure platform is needed to ensure trust and protect the interests of both parties.
4. Streamlined Processes: Existing methods for buying and selling intellectual property may involve cumbersome processes, such as manual negotiations, file transfers, and payment handling. A dedicated platform can streamline these processes, making it easier for creators to showcase their work and for buyers to discover and purchase relevant content.
5. Community Building: A centralized platform fosters a sense of community among creators and buyers, facilitating collaboration, knowledge sharing, and networking opportunities. By bringing

together like-minded individuals, the "Project Community" system can encourage innovation and creativity within the Intellectual property ecosystem Overall, the "Project Community" system addresses the need for a secure, efficient, and centralized platform that enables creators to monetize their intellectual property while providing buyers with easy access to valuable content.

1.4 Scope of the System:

The scope of the "Project Community" system is broad, encompassing a range of functionalities tailored to meet the needs of creators and buyers within the intellectual property marketplace. Firstly, the system facilitates user registration and authentication processes, ensuring secure access to its features. Once registered, creators can upload various forms of intellectual property, such as project documentation, research papers, and code files, showcasing their work for potential buyers. Conversely, buyers can easily search, discover, and access relevant content based on their interests, keywords, or categories. Central to the system is the seamless management of transactions, enabling secure payments, digital rights management, and transaction tracking. Moreover, communication and collaboration are encouraged through features like messaging, discussion forums, and social sharing options, fostering a sense of community among users. Monetization options are diverse, allowing creators to set prices, offer subscription plans, or implement pay-per-download models. To ensure trust and security, the system implements robust measures for data protection, copyright enforcement, and regulatory compliance. Additionally, administrators have access to analytics and reporting tools to monitor platform usage, track performance metrics, and make informed decisions for optimization. Overall, the scope of the "Project Community" system is comprehensive, aiming to provide a user-friendly and secure platform that supports innovation, collaboration, and the exchange of intellectual property.

1.5 Operating Environment Hardware & Software:

Hardware Requirements:

Any modern computer, laptop, tablet, or smartphone with a web browser and internet connectivity.

Software Requirements:

Operating System with any modern web browser such as Google Chrome, Mozilla Firefox, Safari, or Microsoft Edge.

1.6 Brief description of Technology used:

1.Operating Systems used:

a. The system is designed to be agnostic to operating systems such as Windows, Linux, etc.

b. This ensures inclusivity & accessibility for users regardless of their preferred operating system.

2. NoSQL used for Database:

a. Firebase has been chosen as the database management solution for the “Project Community” project, aligning with the project's goal of efficiently managing diverse waste-related data and ensuring a seamless user experience.

b. Firebase offers a comprehensive set of features that perfectly suit the dynamic and collaborative nature of the waste management ecosystem.

c. Key Advantages

1. Real-time Data Sync
2. Scalability
3. NoSQL
4. Authentication & Security
5. Serverless Architecture

2.1 Study of Similar Systems:

GitHub:

GitHub is a popular platform for hosting and collaborating on software development projects. It allows users to upload, share, and collaborate on code repositories, making it a valuable resource for developers. Studying GitHub can provide insights into features such as version control, collaboration tools, and community engagement.

Envato Market:

Envato Market is a marketplace for digital assets, including website themes, templates, graphics, and more. It provides a platform for creators to sell their digital products to a global audience. Studying Envato Market can offer insights into monetization strategies, user interface design, and marketplace dynamics.

Amazon Kindle Direct Publishing (KDP):

Amazon KDP enables authors and publishers to self-publish and distribute their books and e-books through the Amazon platform. It offers authors a way to monetize their written content and reach a wide audience of readers. Studying Amazon KDP can provide insights into content distribution, royalty structures, and user feedback mechanisms.

Etsy:

Etsy is an e-commerce platform focused on handmade and vintage items, but it also hosts a significant number of digital downloads, including art prints, patterns, and digital tools. It provides creators with a platform to sell their digital creations directly to consumers. Studying Etsy can offer insights into product discovery, seller tools, and community building.

2.2 Feasibility Study:

1. Introduction

The purpose of this feasibility study is to assess the viability and practicality of developing a project community website aimed at facilitating the buyers and sellers of different intellectual properties. This study will evaluate various aspects, including technical, financial, operational, legal, regulatory, and market feasibility.

1. Technical Feasibility

a. Software Requirements: The portal will require development using modern programming languages such as Javascript, Node, Express. Integration with Firebase for authentication, real-

time database, and cloud storage is feasible.
b. Hardware Requirements: The hardware infrastructure needed to support the app includes servers for hosting the backend, storage for data, and network equipment for connectivity.
c. Integration: Razorpay API is integrated for transaction purpose.
d. Scalability: The website can handle big size projects and can make transactions smoothly.

2. Financial Feasibility:

Evaluating revenue streams, costs, and profitability to ensure the platform can sustainably generate income and cover expenses. This involves analyzing potential sources of revenue such as transaction fees and subscriptions, while also considering operational costs like hosting, development, and marketing expenses. The goal is to ensure that the platform can achieve profitability and financial viability in the long term.

3. Operational Feasibility

Assessing the platform's ability to function effectively and efficiently in practical terms. This includes evaluating the technical infrastructure to ensure it can handle user traffic
and data management, as well as considering user experience factors like ease of use, content moderation capabilities, and customer support. Operational feasibility also involves planning for scalability, reliability, and responsiveness to ensure smooth operations and user satisfaction.

4. Legal and Regulatory Feasibility

Ensuring compliance with relevant laws and regulations governing intellectual property rights, data protection, and online transactions. This involves understanding and adhering to copyright laws to protect the rights of creators and buyers, implementing robust data protection measures to safeguard user privacy, and drafting legal agreements such as terms of service and user agreements to mitigate legal risks and liabilities.

5. Market Feasibility

Conducting market research to assess the demand for the platform and its potential for success in the marketplace. This includes analyzing competitors, identifying target audiences, understanding

user preferences and behaviors, and evaluating potential growth opportunities. Market feasibility also involves identifying unique selling points and competitive advantages that differentiate the platform from existing solutions and attract users.

2.3 Objectives of Proposed System:

1. Facilitate Exchange of Intellectual Property:

Provide a centralized platform where creators can upload and showcase their intellectual property, including project documentation, research papers, code files, etc., and buyers can easily discover, access, and purchase relevant content.

2. Enable Monetization for Creators:

Offer creators various monetization options, such as setting prices for their intellectual property, offering subscription plans, or implementing pay-per-download models, allowing them to earn fair compensation for their work.

3. Ensure Secure Transactions:

Implement robust security measures to protect users' data, prevent unauthorized access, and enforce copyright protection for uploaded
intellectual property, ensuring trust and security for both creators and buyers.

4. Promote Community Engagement:

Foster a sense of community among users through features like user profiles, ratings, reviews, and social sharing functionalities, encouraging collaboration, knowledge sharing, and networking opportunities.

5. Provide Seamless User Experience:
Deliver a seamless and intuitive user experience through a user-friendly interface, clear navigation, and responsive design, making it easy for users to upload, discover, purchase, and interact with intellectual property on the platform.

6.Support Legal Compliance:
Ensure compliance with relevant laws and regulations governing intellectual property rights, data protection, online transactions, and consumer protection, mitigating legal risks and liabilities for the platform and its users.

7. Facilitate Growth and Scalability:
Build a scalable and flexible platform capable of handling a growing number of users, uploads, and transactions while maintaining optimal performance, reliability, and responsiveness.

8. Provide Analytics and Insights:
Offer administrators access to analytics and reporting tools to monitor platform usage, track performance metrics, and gather insights for decision-making and optimization, enabling continuous improvement
and innovation.

9. Enhance Discoverability and Engagement:
Implement features to enhance content discoverability, such as advanced search functionalities, personalized recommendations, and curated collections, driving user engagement and retention on the platform.

10. Empower Innovation and Creativity:
Create a dynamic and vibrant ecosystem that empowers creators to showcase their work, explore new ideas, and collaborate with others, fostering innovation, creativity, and growth within the intellectual property community.

2.4 Users of the System:

1. Creators:

•Creators are individuals or organizations who upload and showcase their intellectual property on the platform. This group includes:

•Authors: Writers, researchers, and academics who upload research papers, articles, essays, and other written content.

•Developers: Programmers, software engineers, and coders who upload code files, scripts, applications, and software projects.

•Designers: Graphic designers, artists, and creatives who upload design files, illustrations, templates, and visual assets.

•Other Content Creators: Individuals or organizations who produce digital content in various formats, such as audio, video, presentations, and multimedia projects.

•Creators may use the platform to monetize their work, gain exposure, receive feedback, collaborate with others, and connect with potential buyers or collaborators.

2. Buyers:

•Buyers are individuals or organizations who browse, discover, and
purchase intellectual property on the platform. This group includes:

•Researchers and Academics: Individuals or institutions seeking access to research papers, scholarly articles, and academic publications.

•Developers and Programmers: Professionals or hobbyists looking for code snippets, libraries, frameworks, or solutions to use in their projects.

•Businesses and Enterprises: Companies or organizations in need of digital assets, templates, tools, or resources for their projects or initiatives.

•Creative Designers: Individuals or agencies searching for design assets, graphics, templates, or multimedia content for their creative projects.

•Other Professionals: Individuals from various industries seeking specialized knowledge, tools, or resources to support their work or projects.

•Buyers may use the platform to discover new content, access high-quality resources, support creators, and find solutions to their specific needs or challenges.

Both creators and buyers play integral roles in the "Project Community" ecosystem, contributing to the platform's growth, diversity, and vibrancy. The platform aims to serve the needs of both groups effectively, providing value-added features, seamless user experiences, and opportunities for collaboration and engagement.

3.1 System Requirement:

Functional Requirements:

1. User Authentication and Authorization:

•Users should be able to register, log in, and manage their accounts.

•Differentiate between roles such as creators and buyers, with appropriate access levels and permissions.

2. Content Management:

•Creators should be able to upload, edit, and manage their intellectual property listings.

•Buyers should be able to search, browse, and filter content based on various criteria such as category, tags, or keywords.

3. Transaction Management:

•Enable secure payment processing for purchases made on the platform.

•Provide functionality for buyers to add items to a shopping cart, proceed to checkout, and complete transactions.

4. Communication and Collaboration:

•Users should be able to communicate with each other through messaging or discussion forums.

•Enable collaboration features such as sharing, commenting, and reviewing on intellectual property listings.

5. Monetization Options:

•Allow creators to set prices, offer subscription plans, or implement pay-per-download models for their content.

•Facilitate revenue sharing between creators and the platform through transaction fees or commissions.

6. Content Moderation and Quality Assurance:

•Implement mechanisms for content moderation to ensure the legality, quality, and appropriateness of uploaded content.

•Enable user feedback and reporting features to flag inappropriate or infringing content.

7. User Profile and Social Features:

•Provide user profiles with options for customization, displaying uploaded content, ratings, reviews, and social interactions.

•Enable social sharing functionalities to promote content and engage with external communities.

Non-Functional Requirement:

1. Performance:

•Ensure fast response times and minimal latency for browsing, searching, and accessing content.

•Handle concurrent user sessions and spikes in traffic effectively without degradation in performance.

2. Scalability:

•Design the system to scale horizontally to accommodate a growing user base and increasing volume of content.

•Implement load balancing, caching, and distributed architectures to handle increased demand.

3. Security:

•Implement robust security measures to protect user data, including encryption of sensitive information and secure communication protocols.

•Ensure compliance with data protection regulations such as GDPR and CCPA.

4. Reliability:

•Ensure high availability and uptime of the platform through redundancy, failover mechanisms, and disaster recovery plans.

•Regularly backup data and implement monitoring and alerting systems to detect and respond to issues promptly.

5. Usability:

•Design a user-friendly interface with intuitive navigation, clear instructions, and consistent layout and design elements.

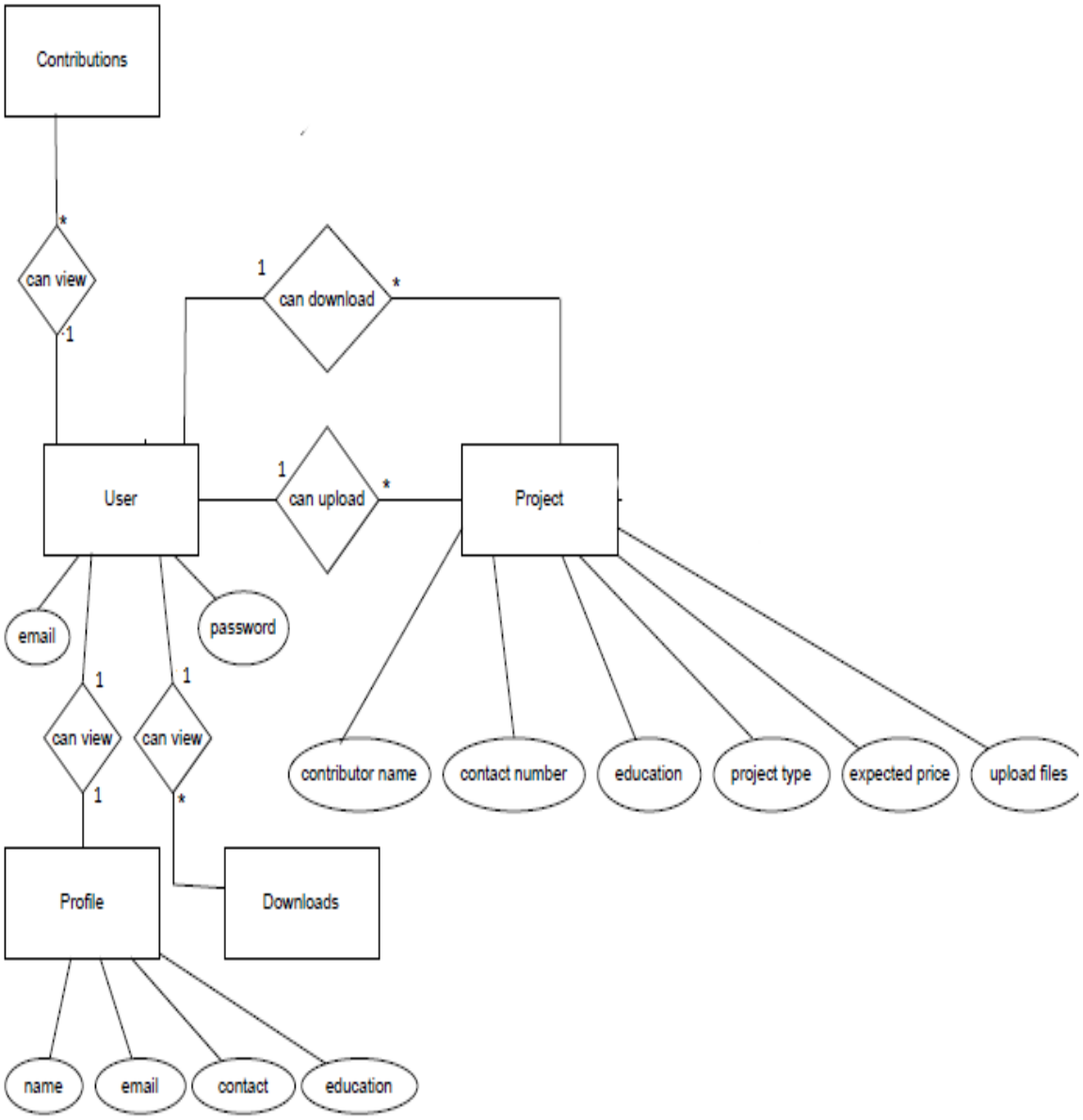
•Conduct usability testing and gather user feedback to iterate and improve the user experience iteratively.

6. Compatibility:

•Ensure compatibility with a wide range of devices, browsers, and screen sizes to provide a seamless experience for users on different platforms.

•Test and optimize performance on various operating systems and devices to ensure consistency and reliability.

3.2 Entity Relationship Diagram (ERD):



3.3 Table Structure:

Add Project:

Field Name	Data Type	Constraints	Description
project_title	VARCHAR(100)	PRIMARY KEY	title of the project
project_type	VARCHAR(30)	NOT NULL	type of the project

expected_price	VARCHAR(10)	NOT NULL	expected price of the project
upload_file	FILE	NOT NULL	actual project file
enable_download	BOOLEAN	NOT NULL	download permissions
contact	DOUBLE(10)	NOT NULL	contact number of contributor

Profile:

Field Name	Data Type	Constraints	Description
email	VARCHAR(20)	PRIMARY KEY	email of user
name	VARCHAR(20)	NOT NULL	name of te user

My Downloads:

Field Name	Data Type	Constraints	Description
project_title	VARCHAR(50)	PRIMARY KEY	title of the project
project_type	VARCHAR(50)	NOT NULL	type of project
contributer_name	VARCHAR(50)	NOT NULL	name of the project contributor
project_file	FILE(1)	NOT NULL	project file downloaded by user

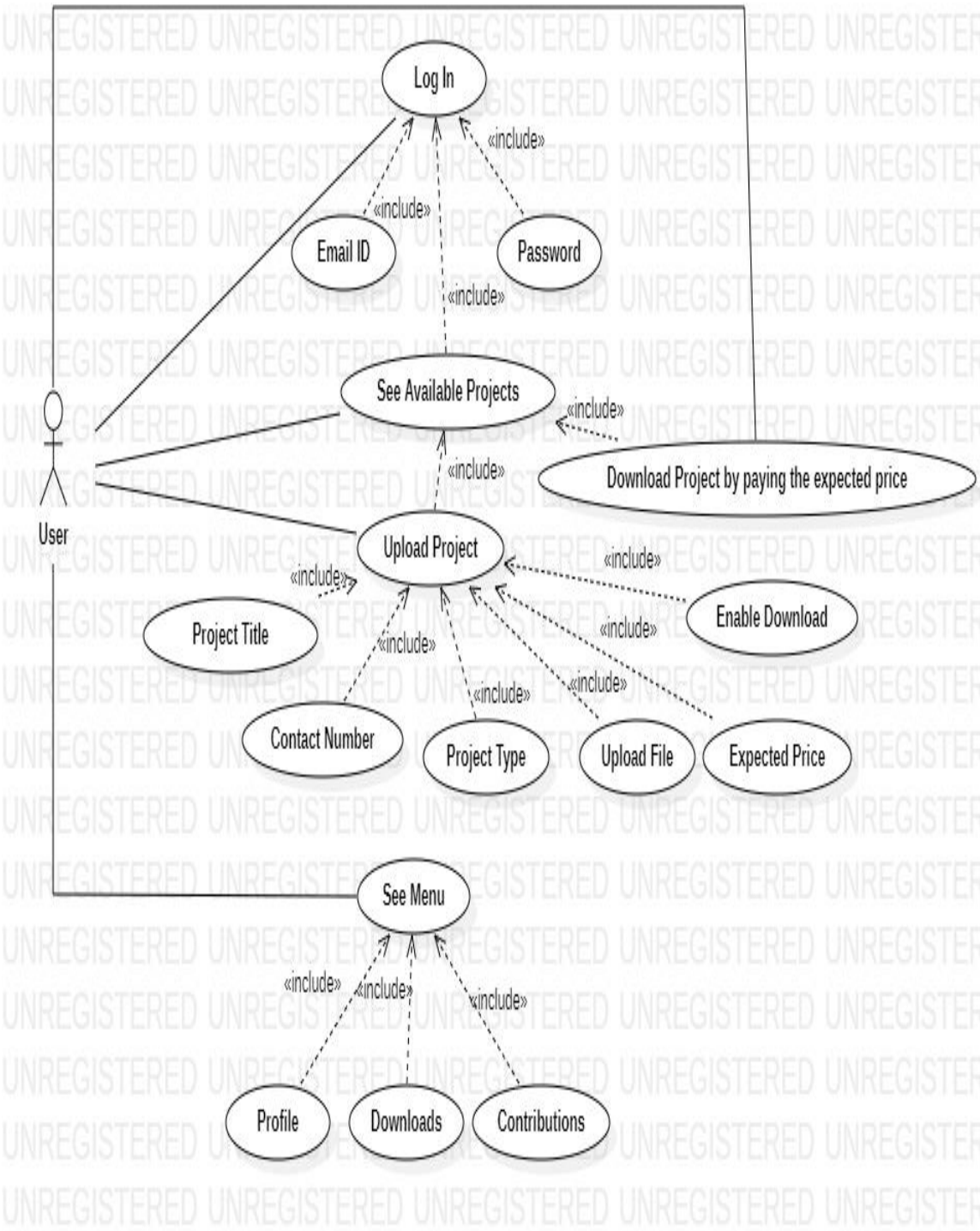
My Contributions:

Field Name	Data Type	Constraints	Description
contact	VARCHAR(10)	PRIMARY KEY	contact number of project owner
project_title	VARCHAR(30)	NOT NULL	title of the project
project_type	VARCHAR(20)	NOT NULL	type of project
expected_price	VARCHAR(10)	NOT NULL	expected price of the project uploaded

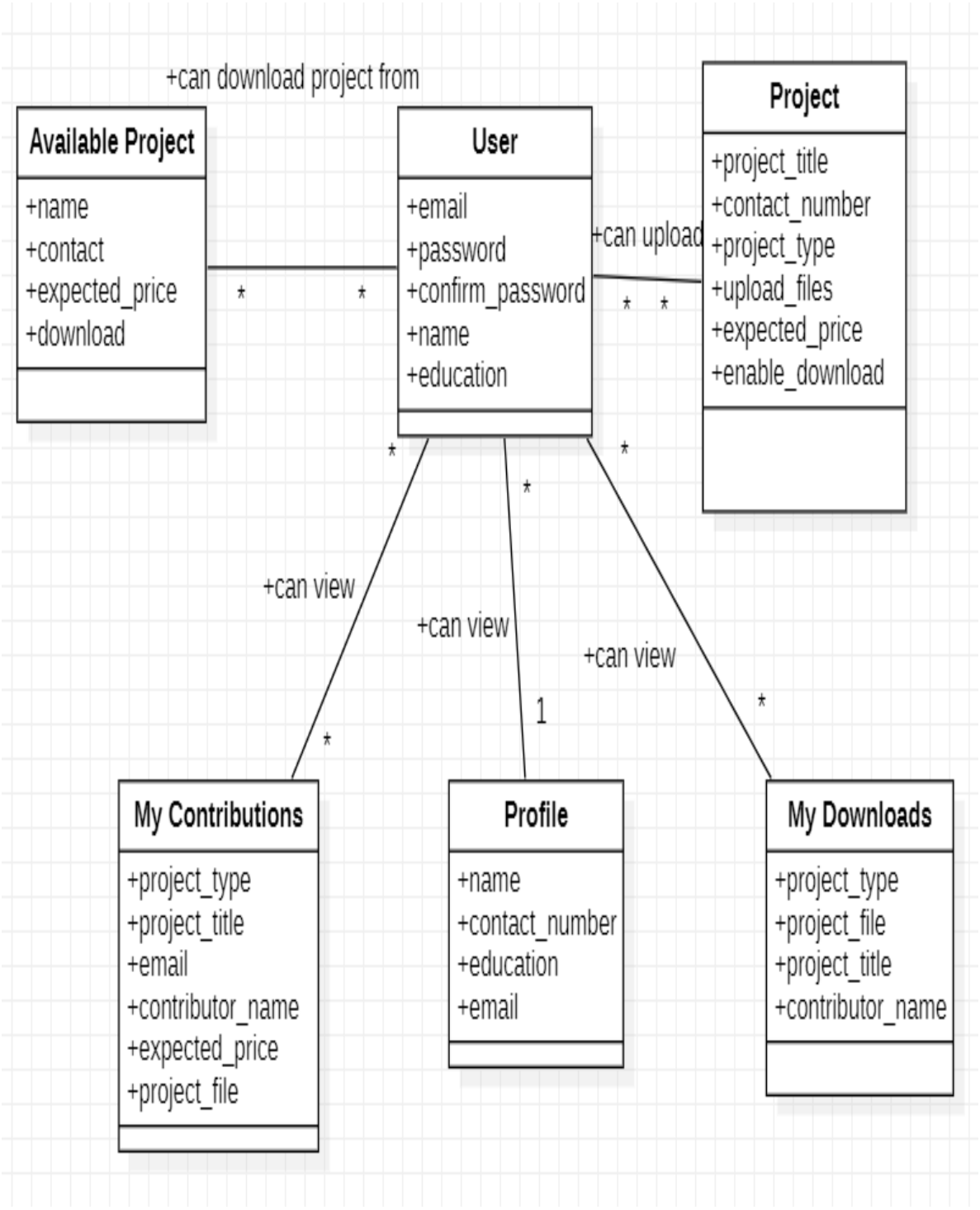
Registration:

Field Name	Data Type	Constraints	Description
email_id	VARCHAR(25)	PRIMARY KEY	E mail ID of of the user
name	VARCHAR(30)	NOT NULL	Name of the user
eduction	VARCHAR(10)	NOT NULL	educational qualification of user
password	VARCHAR(20)	NOT NULL	password given by user
confirm_password	VARCHAR(20)	NOT NULL	confirmation of password

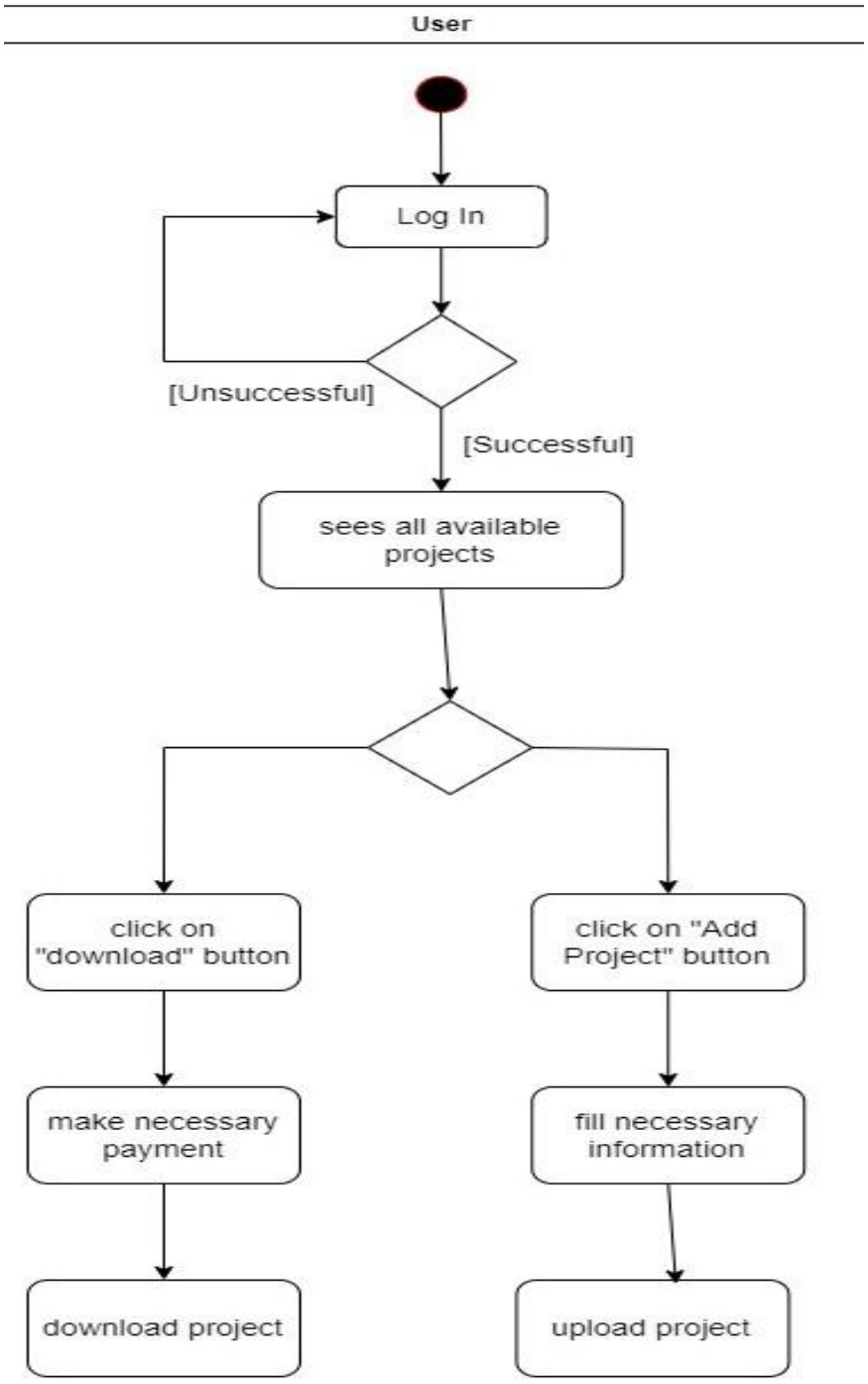
3.4 Use Case Diagram:



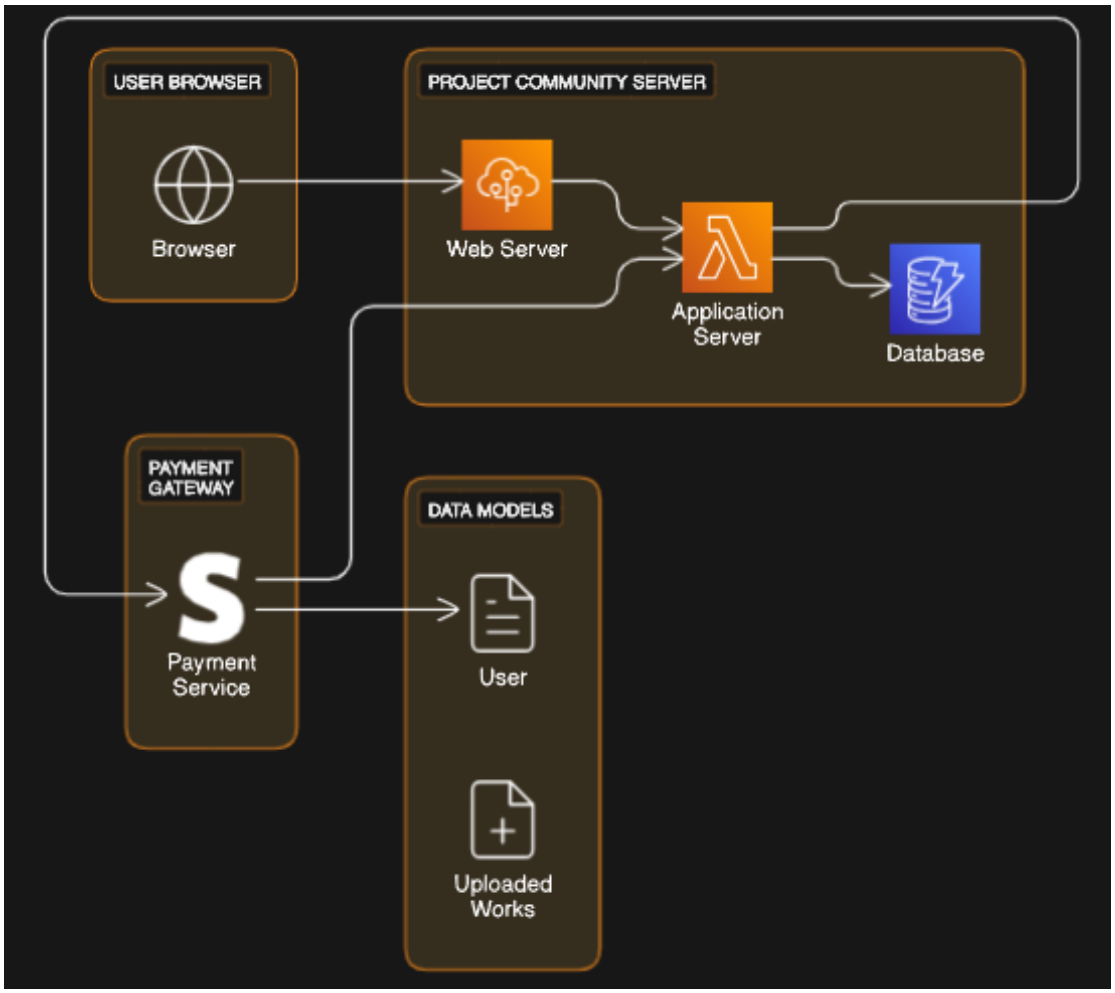
3.5 Class Diagram:



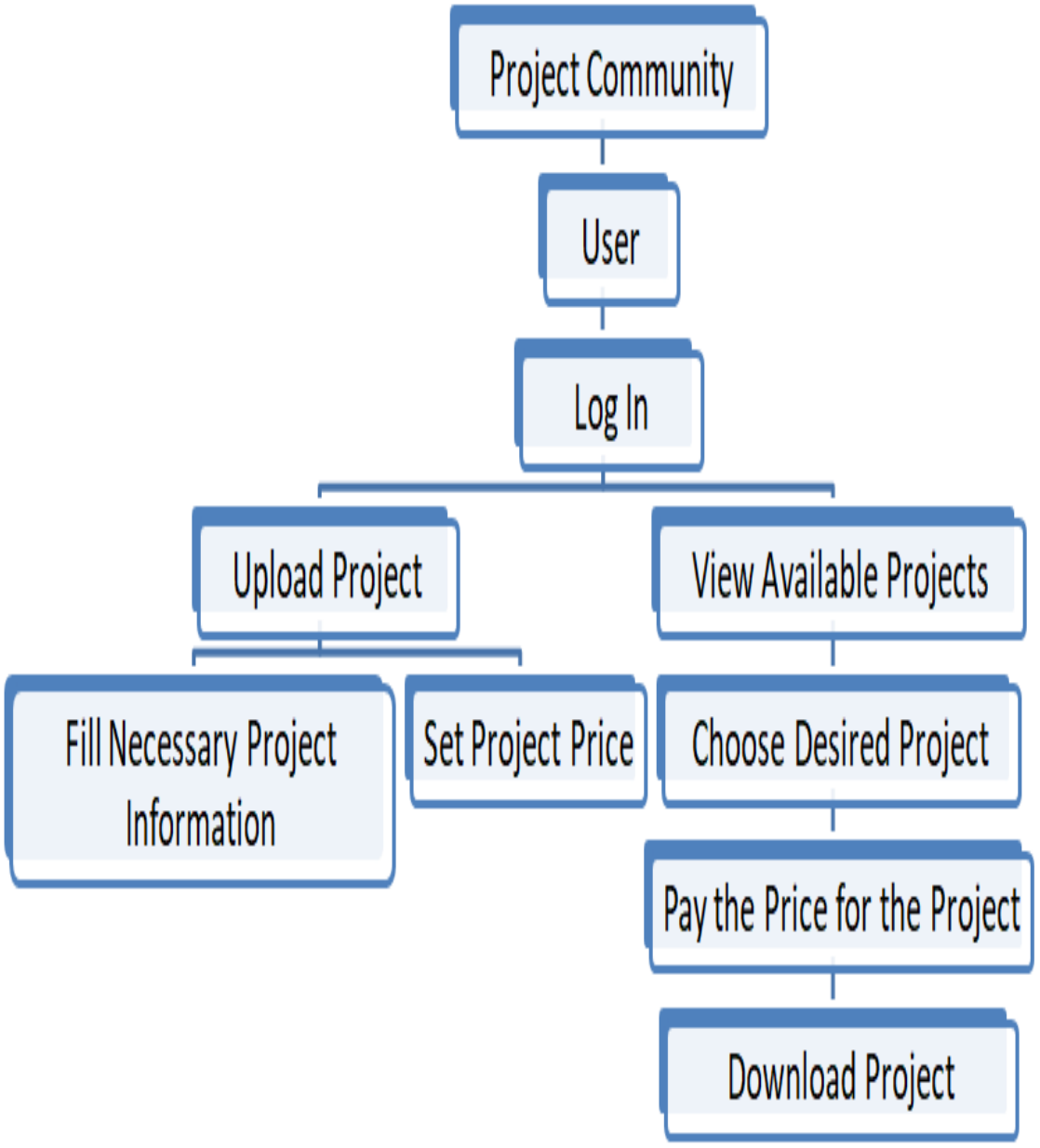
3.6 Activity Diagram:



3.7 Deployment Diagram:

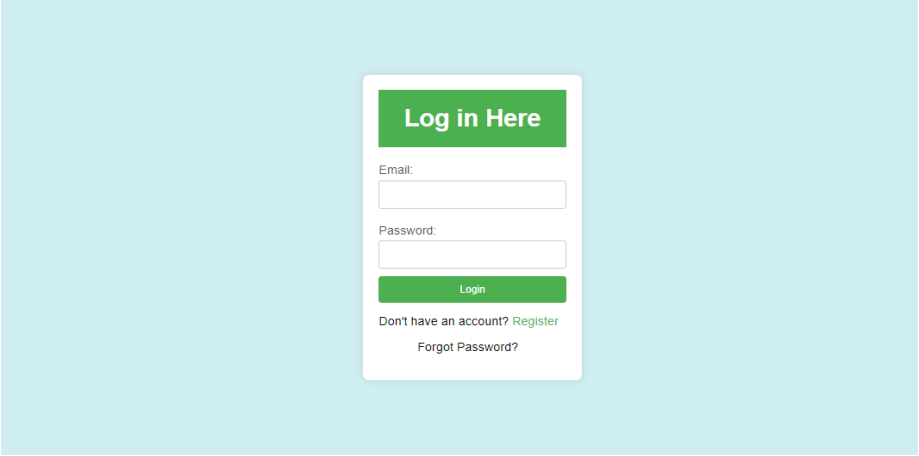


3.8 Module Hierarchy Diagram:

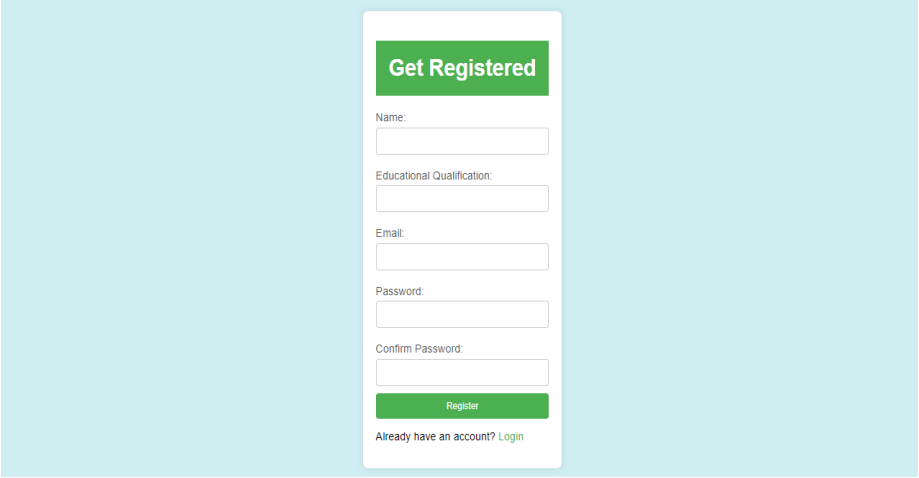


3.9 Sample Input & Output Screens:

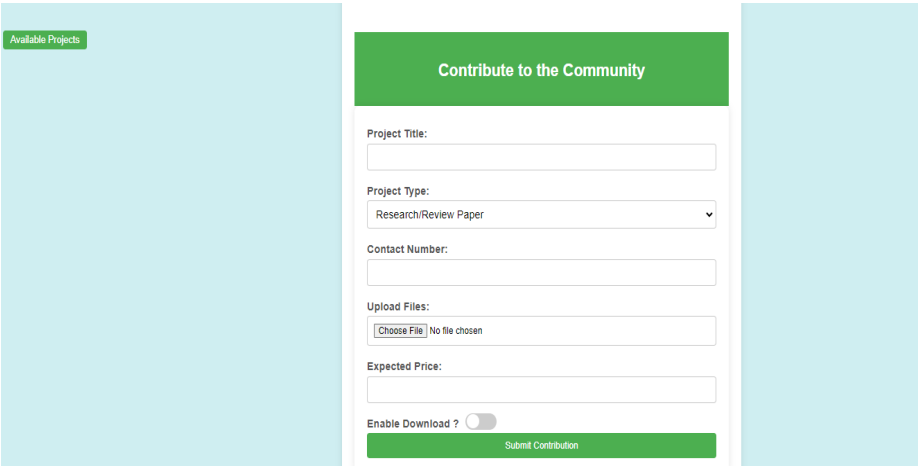
Login Page:



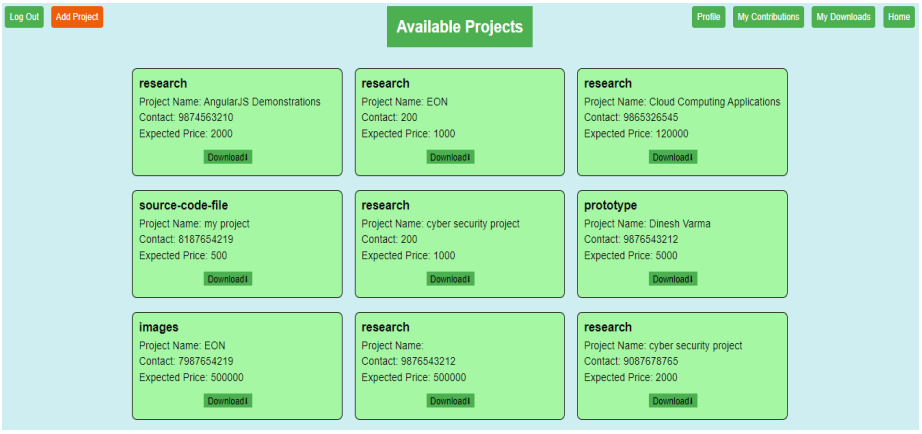
Registration Page:



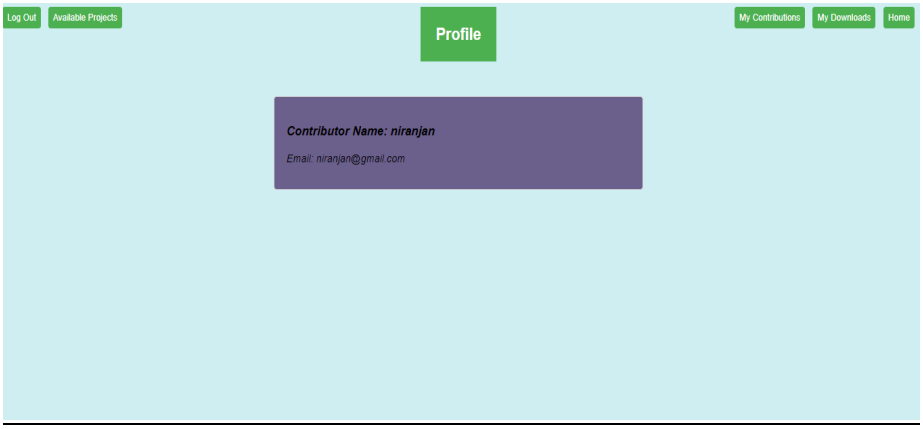
Upload project page:



Available Projects page:

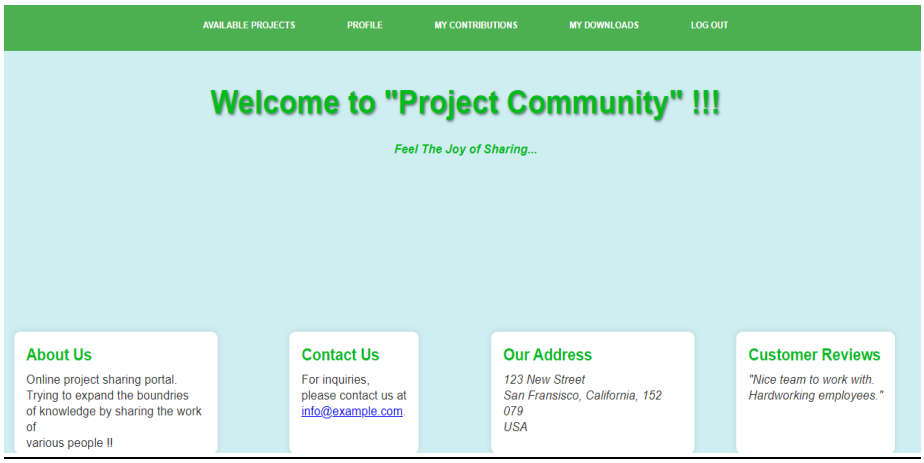


Profile Page:



My Contributions page:

Welcome Page:



4.1 Code Snippets:

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<link rel="stylesheet" href="css/style.css">
```

```
<title>Registration</title>
<script>
function registerUser() {
const email = document.getElementById('email').value;
const password = document.getElementById('password').value;
const name = document.getElementById('name').value;
const qualification = document.getElementById('education').value;
const confirmPassword = document.getElementById('confirmPassword').value;
if (password !== confirmPassword) {
alert("Passwords do not match.");
return;
}
fetch('http://127.0.0.1:3000/auth/register', {
method: 'POST',
headers: {
'Content-Type': 'application/json',
},
body: JSON.stringify({ name, email, password, qualification }),
})
.then(response => response.json())
.then(data => {
if (data.success) {
alert("Registration successful. Redirecting to login page.");
window.location.href = "login.html";
} else {
alert("Registration failed. " + data.message);
}
})
.catch(error => {
console.error('Error during registration:', error);
alert('Error during registration. Please try again.');
});
```

```
}
   </script>
<style>
h1{
background-color: #4CAF50;
color: white;
padding: 20px;
}
body {
background-color: #cfeef1;
}
</style>
</head>
<body>
<form id="registrationForm" onsubmit="registerUser(); return false;">
<h1>Get Registered</h1>
<label for="name">Name:</label>
<input type="text" id="name" name="name" required>
<label for="education">Educational Qualification:</label>
<input type="text" id="education" name="education" required>
<label for="email">Email:</label>
<input type="email" id="email" name="email" required>
<label for="password">Password:</label>
<input type="password" id="password" name="password"
pattern="^(?=.*[a-z])(?=.*[A-Z])(?=.*\d)(?=.*[@$!%*?&])[A-Za-z\d@$!%*?&]{8,}$"
title="Password must contain at least one uppercase letter, one lowercase letter, one numeric,
and one special character. Minimum length is 8 characters."
required>
<label for="confirmPassword">Confirm Password:</label>
<input type="password" id="confirmPassword" name="confirmPassword" required>
<button type="submit">Register</button>
<p>Already have an account? <a href="login.html">Login</a></p>
```

```
</form>
</body>
</html>
```

2 Login.html

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<link rel="stylesheet" href="css/style.css">
<title>Login</title>
<style>
body {
background-color: #cfeef1;
}
#forgotPassword {
text-align: center;
color: black;
margin-left: 50px;
}
h1{
background-color: #4CAF50;
color: white;
padding: 20px;
margin-top: 0%;
}
</style>
</head>
<body>
<form id="loginForm">
```

```
<h1>Log in Here</h1>
<label for="email">Email:</label>
<input type="email" id="email" name="email" required>
<label for="password">Password:</label>
<input type="password" id="password" name="password" required>
<button type="submit">Login</button>
<p>Don't have an account? <a href="register.html">Register</a></p>
<p><a href="#" id="forgotPassword">Forgot Password?</a></p>
</form>
<script>
document.getElementById('loginForm').addEventListener('submit', loginUser);
document.getElementById('forgotPassword').
addEventListener('click', showForgotPassword);
if(JSON.parse(localStorage.getItem("data")).value){
window.location.href = "welcome.html";
}
function loginUser(event) {
event.preventDefault();
const email = document.getElementById('email').value;
const password = document.getElementById('password').value;
fetch('http://127.0.0.1:3000/auth/login', {
method: 'POST',
headers: {
'Content-Type': 'application/json',
},
body: JSON.stringify({ email, password }),
})
.then(response => response.json())
.then(data => {
if (data.success) {
// JSON.parse(localStorage.getItem("data"))
let obj={value:true}
```

```
localStorage.setItem("data",JSON.stringify(obj))
alert('Logged in successfully');
window.location.href = "welcome.html";
} else {
alert("Login failed. " + data.message);
}
})
.catch(error => {
console.error('Error during login:', error);
alert('Error during login. Please try again.');
});
}
function showForgotPassword() {
const email = document.getElementById('email').value;
if (email) {
fetch('http://127.0.0.1:3000/auth/forgot-password', {
method: 'POST',
headers: {
'Content-Type': 'application/json',
                    },
body: JSON.stringify({ email }),
})
.then(response => response.json())
.then(data => {
if (data.success) {
alert('Password reset instructions sent to your email.');
} else {
alert('Failed to initiate password reset. ' + data.message);
}
})
.catch(error => {
console.error('Error during forgot password:', error);
```

```
alert('Error during forgot password. Please try again.');
});
} else {
alert('Please enter your email to initiate password reset.');
}
}
</script>
</body>
</html>
```

5.1Test Strategy:

A Test Strategy for “Project Community” typically includes various aspects to ensure the system’s functionality, usability, security and performance. Here is a comprehensive test strategy for “Project Community” portal:

1. Requirement Analysis:

a. Understand the functional and non-functional requirements of the “Project Community” system.

b. Identify the key features, user roles, and system interactions

c. Define acceptance criteria for each requirement

2. Test Planning:

a. Define the test objectives, scope and deliverables

b. Identify the testing types to be performed (eg. Functional, usability, security, performance, etc.)

c. Determine the testing approach (eg. Manual, automated)

d. Allocate resources and define rules and responsibilities

e. Create a test schedule and timeline

3. Test Environment Setup:

a. Establish a test environment that closely resembles the production environment

b. Install the necessary hardware, software and network configurations.

c. Ensure the availability of test data and test databases.

4. Test Case Design:

a. Create test cases based on the requirements and acceptance criteria

b. Include positive and negative test scenarios, boundary value tests and error handling tests

c. Define test data for various scenarios, including valid and invalid inputs.

Remember to adapt the test strategy to the specific requirements and constraints of the system. Additionally, consider involving domain experts and real users during the testing process to gather valuable insights and improve the system's quality.

5.2Unit Test Plan:

Unit testing for the system typically focuses on testing individual units or components of the system in isolation. It ensures that each unit functions correctly and performs its intended functionality.

Below are some key aspects to consider when performing unit testing for the said system:

1. Identify Units: Break down the system into smaller units or components that can be tested independently. Units could include modules, classes, functions, or methods within the system.

2. Test Coverage: Aim for comprehensive coverage by creating unit tests for each unit in the system. Each test should exercise a specific behavior or functionality of the unit.

3. Test Framework: Select a suitable unit testing framework for your programming language or technology stack. Examples include JUnit for Java, pytest for Python.

4. Test Execution:

a. Execute the unit tests using the selected testing framework.

b. Automate the execution of unit tests to ensure consistent and efficient testing.

c. Integrate the unit tests into a continuous integration or build system to run them automatically on code changes.

5.3 Acceptance Testing:

Acceptance testing for the said system focuses on evaluating whether the system meets the

requirements and expectations of its end-users. It is typically performed towards the end of the development cycle and involves real users or representatives from the target audience.

Below are some of the key steps to perform acceptance testing for a “Project Community” system:

1. Define Acceptance Criteria:

a. Clearly establish the criteria that the system must meet to be considered acceptable.

b. These criteria should be derived from the system's functional and non-functional requirements, user expectations, and business objectives.

2. Test Planning:

a. Identify the target user groups and stakeholders who will participate in acceptance testing.

b. Determine the scope of the acceptance testing, including the specific features or scenarios to be tested

c. Define the testing approach, such as manual testing, user acceptance testing (UAT) sessions, or a combination of both.

d. Allocate resources and define roles and responsibilities for the acceptance testing phase.

3. Test Environment Setup:

a. Set up a dedicated test environment that closely resembles the production environment of the “Project Community” system.

b. Ensure that all necessary hardware, software, and configurations are in place for the acceptance testing activities.

c. Populate the test environment with representative data and simulate real-world scenarios.

User Acceptance Testing (UAT):

Conduct UAT sessions with real users or representatives from the target audience. Provide clear instructions and test scripts to guide users through the testing process. Encourage participants to perform typical tasks, such as creating an account, searching for jobs, applying for positions, and managing their profiles.

Observe and gather feedback on usability, functionality, and overall user experience.

Test Result Analysis:

a. Evaluate the results of acceptance testing against the defined acceptance criteria.

b. Identify any gaps between expected and actual system behavior or performance.

c. Analyze user feedback and bug reports to uncover patterns, common issues, and potential improvements.

5.4 Test Cases:

Test Case ID	Description	Action Taken	Expected Output	Actual Output
TC1	Launch the website	Website URL entered in browser and requested by the	The website should start normally & home page should be displayed	The website was launched without any errors and home page was loaded

		user		
TC2	Login	Tap on Go to Login button	The Login page should be displayed asking all the necessary details	The login page was loaded without any errors
TC3	Registration	Click on Register	Registration form should be loaded prompting all the details	Registration page displayed with all the fields as expected
TC4	Registration	Tap on Register button with	It should display the error	Kept the Name empty, the error message was displayed as

		keeping necessary fields empty	message near that particular field whose value is missing	expected.
TC5	Registration	Try to register with password less than 8 characters in length	It should display error message saying that th e password should be at least 8 character long	Error message was displayed as expected
TC6	Registration	Enter different passwords in Enter Password &	It should display an error message saying passwords do not match.	Prompt was displayed as expected.

		Confirmation on fields		
TC7	Registration	Try to use an email already registered on the system	It should display an error message saying that email is already in use by different account	Error prompt was displayed as expected
TC8	Login	Try to login with valid email & invalid password	It should give an error message saying wrong credentials	Error message was displayed as expected.
TC9	Login	Login with invalid email but correct password	Error should be displayed saying invalid credentials	Error message was displayed as expected

TC10	Upload Project	Try to submit keeping expected price empty	Error message should be displayed saying “all fields are mandetory”	Error message was displayed as expected
		for pickup	be selected	one day
TC11	Registration	Try to register with invalid phone number & all other correct data	It should give error saying please enter a valid 10-digit mobile number	Error message was displayed as expected
TC12	Registration	Try to register with keeping all the fields empty	It should give error that all the fields are mandatory	Error message was displayed as expected

TC13	Login	Tap on Login button without entering data in any of the fields	It should give error that Email & Password are mandatory	Error message was displayed as expected.

Limitations Of Proposed System:

Limited Content Quality Control:

Despite implementing content moderation mechanisms, ensuring the quality and accuracy of uploaded intellectual property may be challenging. The platform may still encounter issues with the presence of low-quality, inaccurate, or infringing content, which could affect user trust and satisfaction.

Dependency on User Engagement:

The success and vibrancy of the platform heavily rely on user engagement and participation. If users do not actively upload, purchase, or engage with content, the platform may struggle to maintain its relevance and momentum over time.

Legal and Copyright Risks:

Despite efforts to enforce copyright protection and compliance with intellectual property laws, the platform may still face legal challenges related to copyright infringement, licensing disputes, or user-generated content that violates intellectual property rights.

Security Vulnerabilities:

Despite implementing robust security measures, the platform may still be susceptible to security

vulnerabilities such as data breaches, hacking attempts, or unauthorized access, which could compromise user data and trust.

Monetization Challenges:

While the platform offers various monetization options for creators, generating sustainable revenue streams may be challenging, especially in the face of competition from existing platforms and changing market dynamics.

Scalability Concerns:

As the user base and volume of content grow, scaling the platform to accommodate increased demand may pose technical challenges. Ensuring seamless performance, reliability, and responsiveness at scale requires ongoing optimization and investment in infrastructure.

Market Competition:

The platform operates in a competitive landscape with existing platforms and marketplaces offering similar services. Differentiating the platform and attracting users may be challenging in a crowded market, requiring strategic positioning and marketing efforts.

Regulatory Compliance:

Adhering to evolving regulatory requirements and compliance standards, such as data protection regulations, consumer protection laws, and tax regulations, may pose additional challenges and administrative burdens for the platform.

Technological Obsolescence:

Rapid advancements in technology and changes in user preferences may render certain features or technologies obsolete over time. Continuous innovation and adaptation are necessary to stay competitive and meet evolving user needs.

User Adoption and Retention:

Convincing users to adopt the platform and retain their engagement over the long term may be challenging, requiring effective marketing, onboarding, and user retention strategies.

Proposed Enhancements:

Advanced Content Moderation: Implement AI-based content moderation tools to enhance accuracy and efficiency in detecting and removing low-quality or infringing content. This could include automated content analysis, image recognition, and natural language processing algorithms.

1. Community Governance Model:

Introduce a community-driven governance model where users can participate in content moderation, flagging inappropriate content, and providing feedback on reported items. This fosters a sense of ownership and accountability within the community.

2. Blockchain Integration for Copyright Protection:

Explore blockchain technology to provide immutable and transparent copyright protection for uploaded intellectual property. Smart contracts can automate licensing agreements, royalty payments, and dispute resolution, enhancing trust and accountability.

3. Enhanced Security Measures:

Implement additional security measures such as two-factor authentication, IP whitelisting, and regular security audits to mitigate security risks and enhance user data protection.

4. Diversified Monetization Options:

Introduce new monetization options such as crowdfunding campaigns, sponsored content partnerships, or affiliate marketing programs to offer creators alternative revenue streams and incentivize user engagement.

5. Scalability Improvements:

Invest in infrastructure upgrades and cloud-based solutions to ensure seamless scalability and performance as the platform grows. This includes optimizing database architecture, implementing caching mechanisms, and adopting serverless computing technologies.

6. Personalized Recommendations:

Utilize machine learning algorithms to analyze user behavior, preferences, and past interactions to provide personalized content recommendations and improve user engagement and retention.

7. Social Features Expansion:

Enhance social features such as user profiles, community forums, and collaborative projects to foster deeper user engagement, networking, and collaboration opportunities among creators and buyers.

8. Localized Content and Multilingual Support:

Expand the platform's reach by offering localized content, language localization, and multilingual support to cater to diverse user demographics and global audiences.

9. APIs and Integrations:

Provide APIs and integration capabilities to enable third-party developers to build complementary applications, tools, and services that enhance the platform's functionality and ecosystem

Conclusion:

The "Project Community" platform presents a valuable opportunity to create a dynamic marketplace where creators and buyers of intellectual property can connect, collaborate, and exchange valuable resources. By addressing the limitations and challenges through proposed enhancements, the platform can further solidify its position as a trusted and innovative hub for knowledge sharing, monetization, and community building.

The proposed enhancements, including advanced content moderation, blockchain integration for copyright protection, and personalized recommendations, aim to elevate the platform's functionality, security, and user experience. Additionally, diversifying monetization options, expanding social features, and investing in scalability improvements can contribute to sustained growth, user engagement, and long-term success.

Ultimately, the success of the "Project Community" platform hinges on its ability to adapt to evolving user needs, market trends, and technological advancements. By prioritizing user feedback, fostering community involvement, and maintaining a commitment to quality and innovation, the platform can continue to thrive as a vibrant ecosystem for creators and buyers alike.

As the platform evolves, continuous evaluation, iteration, and collaboration will be essential to ensure that "Project Community" remains a valuable resource and catalyst for creativity, collaboration, and knowledge exchange in the ever-expanding landscape of intellectual property.

In addition to the outlined strategies and enhancements, fostering a culture of inclusivity, diversity, and accessibility within the "Project Community" platform is essential. By ensuring that the platform is accessible to users of diverse backgrounds, abilities, and languages, it can reach a broader audience and facilitate a richer exchange of ideas and perspectives.

Moreover, establishing partnerships with educational institutions, industry organizations, and content creators can further enrich the platform's content offerings and community engagement. Collaborating with academic institutions to showcase research papers and educational resources, partnering with industry organizations to offer specialized content and expertise, and supporting content creators through promotional opportunities and revenue-sharing initiatives can enhance the platform's value proposition and appeal to a wider audience.

9. Bibliography

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- *Note: Offers insights into design patterns that might have influenced the system architecture.*
- Walls, C. (2020). *Spring Boot in Action*. Manning Publications.
- *Note: Provides comprehensive guidance on developing applications with Spring Boot, useful for the backend development of Project Community.*

Articles

- **Online Resources**
  - **MDN Web Docs**

    https://developer.mozilla.org/en-US/
  - **Firebase Documentation**

    https://firebase.google.com/docs?gad_source=1&gclid=Cj0KCQjwIN6wBhCcARIsAKZvD5hAGE-

fAkiTOpoQd8sA7h854yJt9BKGhqH1E98AinGMnjHCakUS6IoaAmIE

EALw_wcB&gclsrc=aw.ds

Tools and Software

VS Code – An IDE for writing Node and Express programs.

Postman. – API Platform. Retrieved from https://www.postman.com/

10. User Manual:

1. *Welcome Screen:*

   This is the landing page of the website. There are navigation buttons to navigate to each screen of the portal.

2. *Login Screen:*

   User has to log in by inserting their credentials like, email and password.

3. *Registration Screen:*

User has to register here by using name, email, password and confirmed password.

4. *Add Project Screen:*

If user wants to upload the project, he or she can upload it on this screen by providing necessary information about project like project name, project type, expected price, etc.

5. *Available Projects:*

User can see all the available projects here , so that he or she can choose among them.

6. *My Contributions:*

User can see the projects uploaded by him or her on this screen.

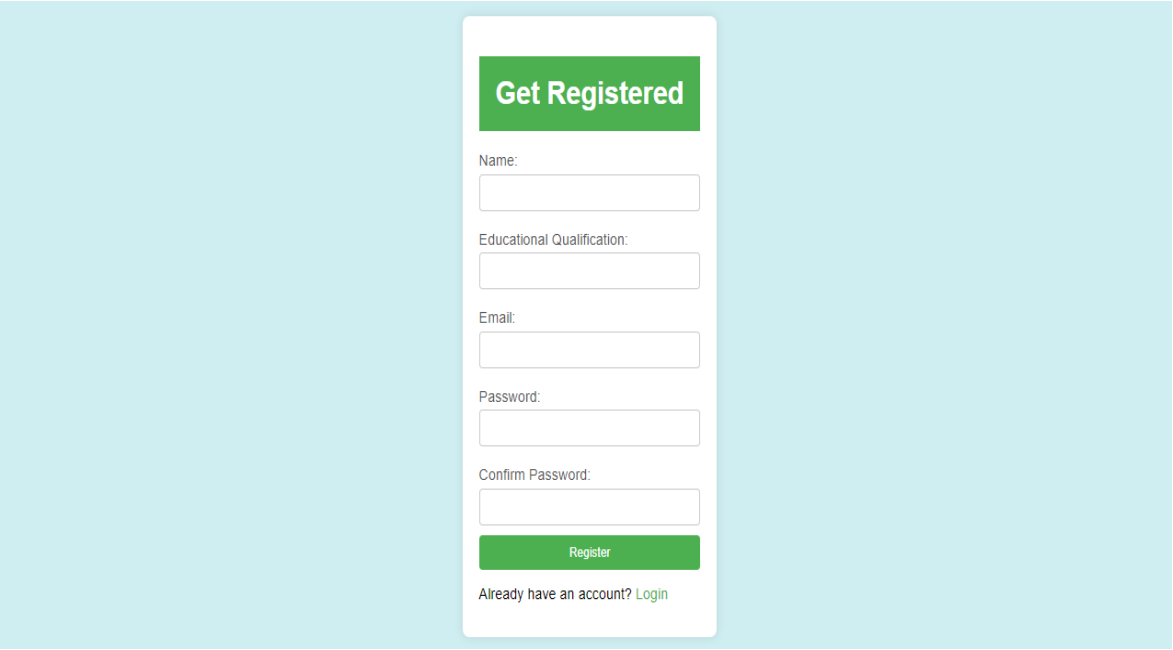
7. *Profile:*

This page shows profile of user consisting of name and Email ID

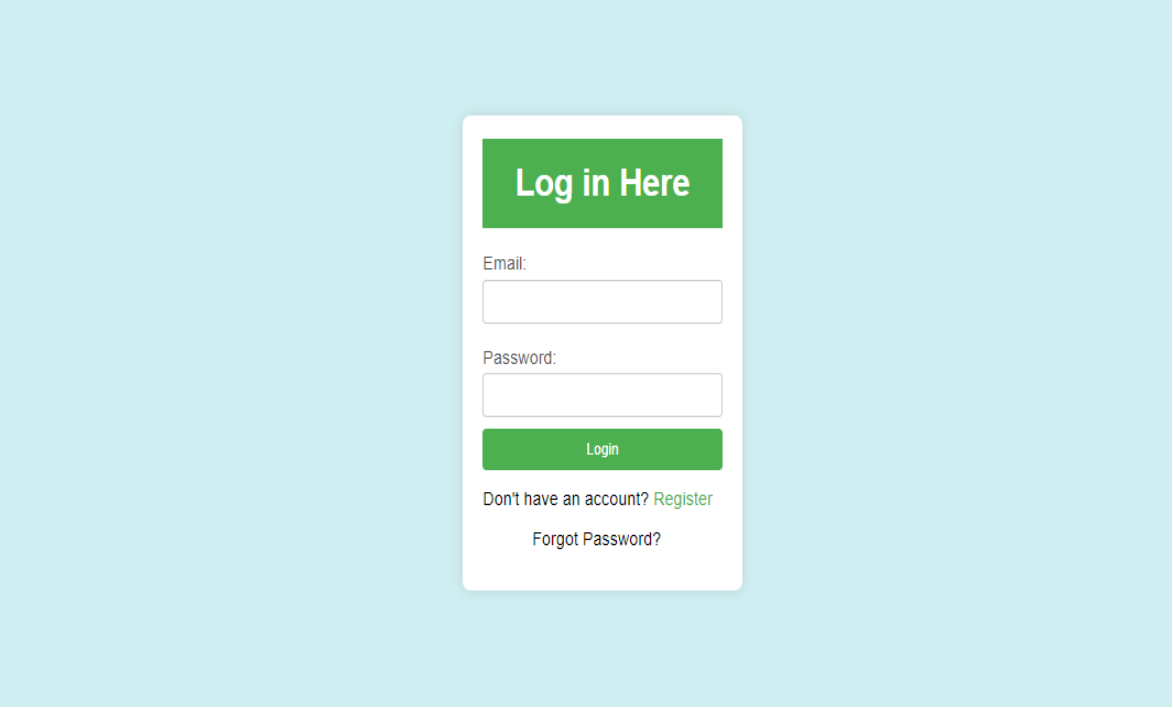
8. *My Downloads:*

User can view projects downloaded by him or her.

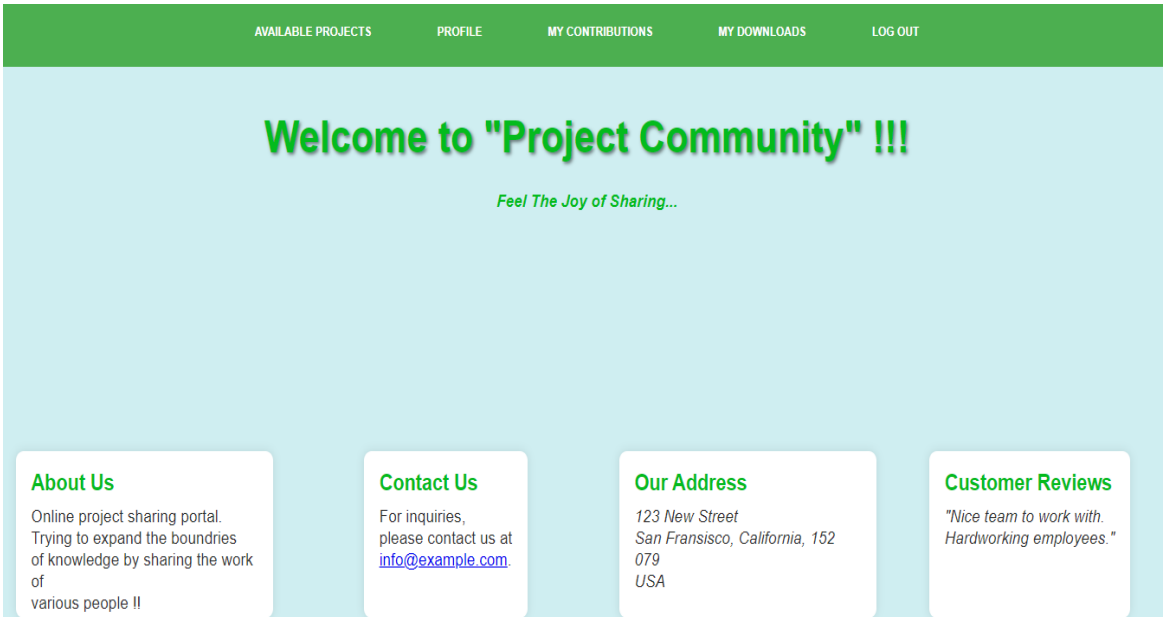
Registration Page:



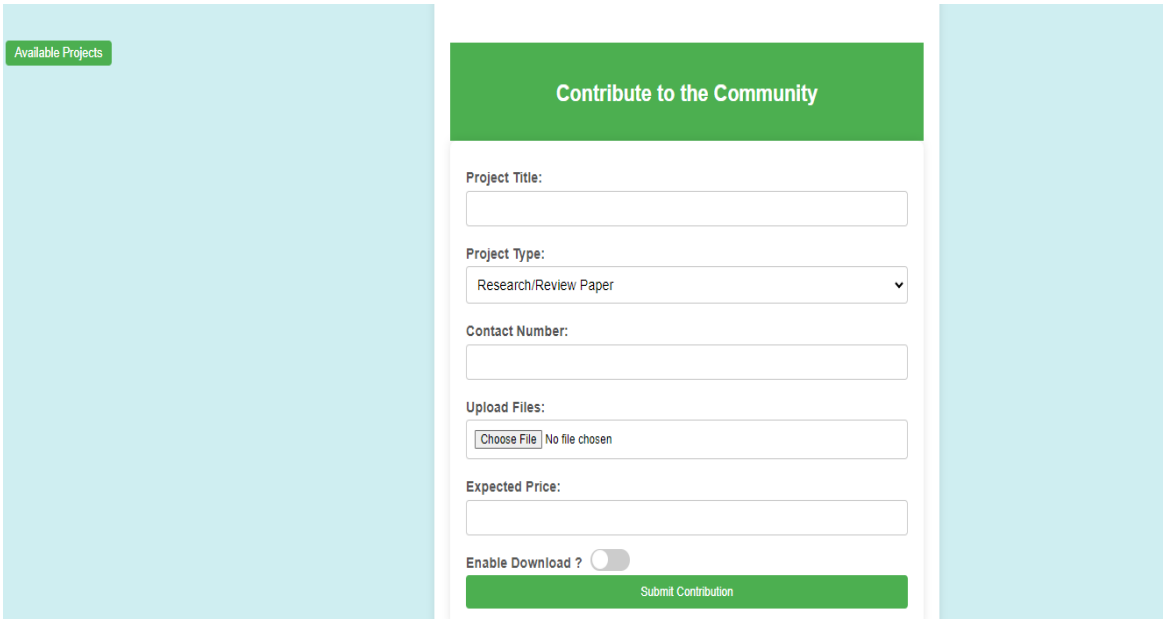
Log in Page



Welcome page



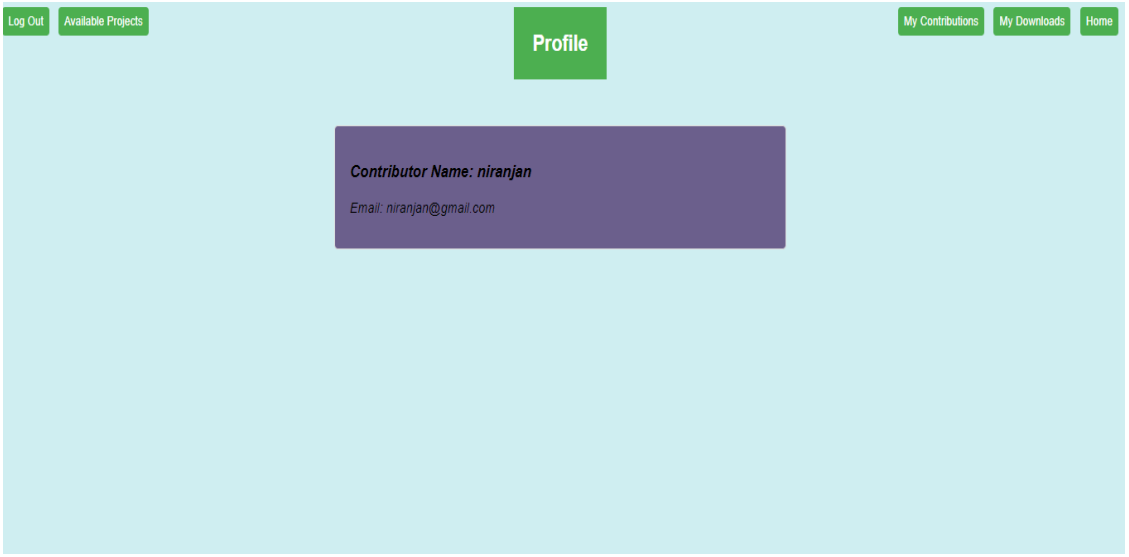
Add Project Screen



Available Project


Log Out
Add Project
Available Projects
Profile
My Contributions
My Downloads
Home
research
Project Name: AngularJS Demonstrations
Contact: 9874563210
Expected Price: 2000
Download
research
Project Name: EON
Contact: 200
Expected Price: 1000
Download
research
Project Name: Cloud Computing Applications
Contact: 9865326545
Expected Price: 120000
Download
source-code-file
Project Name: my project
Contact: 8187654219
Expected Price: 500
Download
research
Project Name: cyber security project
Contact: 200
Expected Price: 1000
Download
prototype
Project Name: Dinesh Varma
Contact: 9876543212
Expected Price: 5000
Download
images
Project Name: EON
Contact: 7987654219
Expected Price: 500000
Download
research
Project Name:
Contact: 9876543212
Expected Price: 500000
Download
research
Project Name: cyber security project
Contact: 9087678765
Expected Price: 2000
Download

Profile


Log Out
Available Projects
Profile
My Contributions
My Downloads
Home
Contributor Name: niranjan
Email: niranjan@gmail.com