COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY COCHIN UNIVERSITY COLLEGE OF ENGINEERING KUTTANADU



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PROJECT REPORT ON

ONLINE CODE COLLABORATION PLATFORM

Submitted on partial fulfilment of the requirement for the award of the degree in Master of Computer Applications from Cochin University of Science and Technology

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CERTIFICATE

This is to certify that this project report entitled "ONLINE CODE COLLABORATION PLATFORM" is a bonafide record on partial fulfilment for the Degree of the Master of Computer Applications to the Cochin University of Science and Technology through Department of Computer Applications, Cochin University College of Engineering Kuttanadu. Alappuzha done by AMRUTHA AJAYAN TR TR(Reg.NO:38222115), ANANDU S(Reg.NO:38222117), DINSHA S(Reg.NO:38222125), SUHAS MB(Reg.NO:38222161) in the year 2023.

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DECLARATION

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fulfil	ment of the	he require	ments i	for the	e award of	Degree in	Master Of C	omputer
Appl	ications i	is a recor	d of or	iginal	work done	by me	under the gui	dance of
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ABSTRACT

This code collaboration platform is designed to provide a robust online environment for efficient project management and collaborative coding. Users can upload, manage, and update project documents directly on the website, fostering seamless collaboration. The platform supports multiple programming languages, enabling users to write, compile, and run code within the integrated development environment.

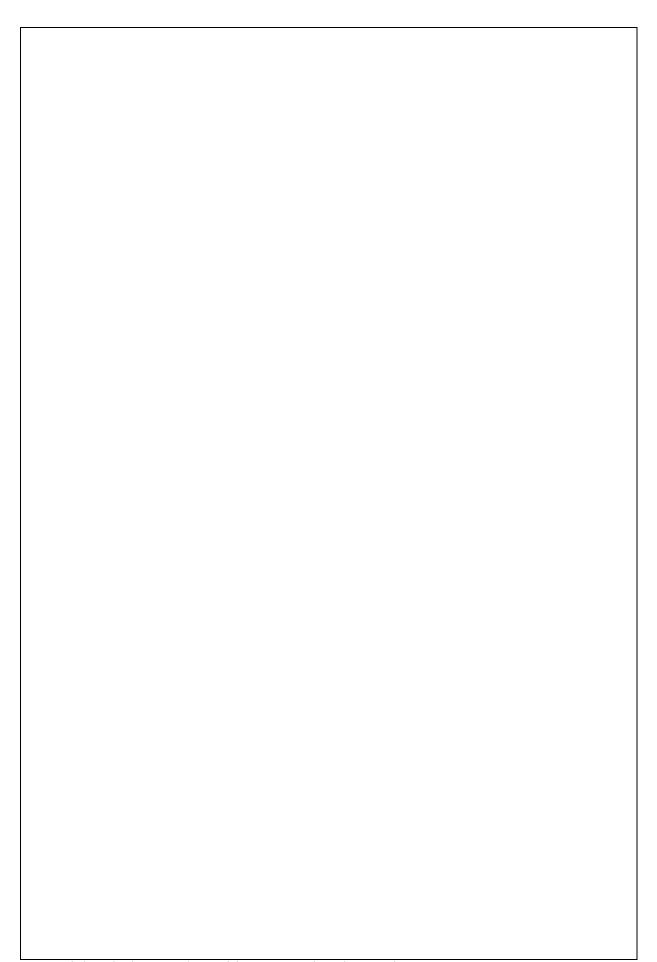
The communication aspect is enhanced through a messaging system, facilitating direct interaction between students and guides. User authentication ensures a secure environment where students and guides can log in and engage in real-time discussions, share insights, and provide guidance. This multifaceted platform aims to streamline the collaborative coding experience, fostering teamwork and effective project development.

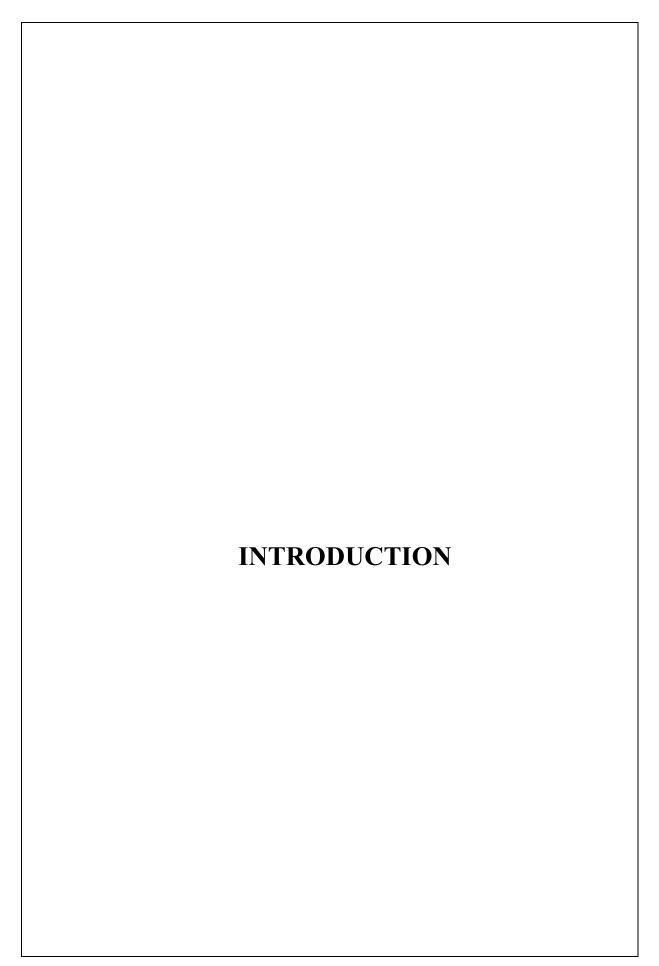
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1.1 ABOUT THE PROJECT

The code collaboration platform aims to provide a centralized environment for seamless collaboration among students and guides. The platform encompasses features such as document management, code viewing and updating, multi-language code compilation and execution, and a messaging system.

1.2 OBJECTIVE & SCOPE OF THE PROJECT

The objective of the described code collaboration platform is to provide a robust and seamless online environment for efficient project management and collaborative coding. It aims to facilitate easy uploading, management, and updating of project documents directly on the website. The platform supports multiple programming languages, enabling users to write, compile, and run code within an integrated development environment. The communication aspect is enhanced through a messaging system, fostering direct interaction between students and guides. User authentication ensures a secure environment, allowing students and guides to engage in real-time discussions, share insights, and provide guidance.

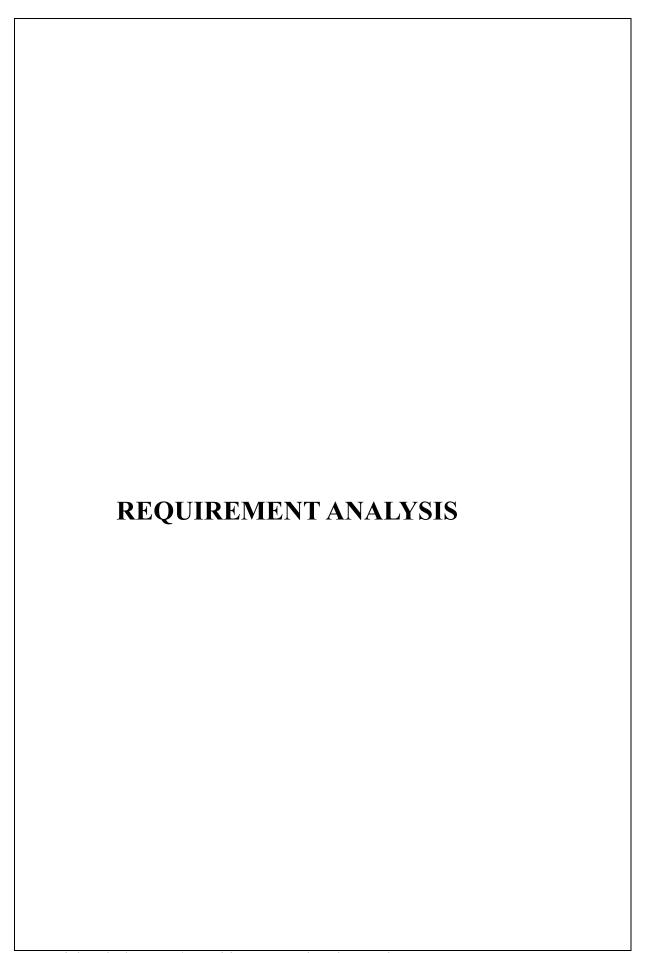
The objective and goals of the proposed system are:

- 1. Advanced Collaboration Features: Integrate more advanced collaborative tools such as real-time collaborative coding, version control, and code review capabilities.
- 2. Integration with External Tools: Explore integration with popular third-party tools and services to enhance functionality, such as integrating with cloud services, project management tools, or additional IDE features.

- **3.** Mobile Accessibility: Develop mobile applications or optimize the platform for mobile accessibility, allowing users to collaborate on projects using smartphones or tablets.
- **4.** User Interface/User Experience (UI/UX) Improvements: Regularly update and improve the platform's user interface and user experience based on user feedback, making it more intuitive and user-friendly.
- **5.** Scalability: Ensure the platform is scalable to accommodate a growing user base and increasing demands, providing a reliable and responsive experience as the user community expands.

1.3 <u>DEFINITION OF THE PROJECT</u>

This code collaboration platform offers a robust online environment for efficient project management and collaborative coding. Users can seamlessly upload, manage, and update project documents, supported by a versatile integrated development environment accommodating multiple programming languages. The platform enhances communication through a messaging system, enabling direct interaction between students and guides. User authentication ensures a secure environment for real-time discussions, knowledge sharing, and guidance. With its multifaceted approach, the platform aims to streamline collaborative coding, fostering teamwork and effective project development.



The Specific Requirements are categorized into two, Functional and Non-Functional Requirements.

2.1 FUNCTIONAL REQUIREMENTS

A Functional Requirement (FR) is a description of the service that the software must offer. It describes a software system or its component. A function is nothing but inputs to the software system, its behaviour, and outputs. It can be a calculation, data manipulation, business process, user interaction, or any other specific functionality which defines what function a system is likely to perform. Functional Requirements in Software Engineering are also called Functional Specification.

In software engineering and systems engineering, a Functional Requirement can range from the high-level abstract statement of the sender's necessity to detailed mathematical functional requirement specifications. Functional software requirements help you to capture the intended behaviour of the system.

- 1. User Authentication and Authorization: Users (students and guides) can create accounts, log in securely, and have distinct roles with specific permissions.
- 2. Project Management: Students can upload, manage, and update projects. Guides can upload questions/documents and view student projects.
- **3.** Collaborative Coding Environment: The platform provides an integrated development environment (IDE) supporting multiple programming languages. Features include syntax highlighting, autocompletion, and debugging.

- **4. Code Compilation and Execution:** Users can write, compile, and run code directly within the platform. Immediate display of code output.
- **5. Messaging System:** A real-time messaging system facilitates direct communication between students and guides.
- **6. User Profiles:** Students and guides can view and update their profiles, showcasing projects, skills, and achievements.
- 7. Feedback and Collaboration: Guides can provide feedback on students' projects, fostering a collaborative learning environment.
- **8. Document Upload and Viewing:** Guides can upload questions/documents (e.g., PDFs). Students can view and download these documents for reference.
- **9. Search and Filtering:** Users can search for projects, questions, or users based on different criteria and apply filters for better navigation.

2.2 NON-FUNTIONAL REQUIREMENTS

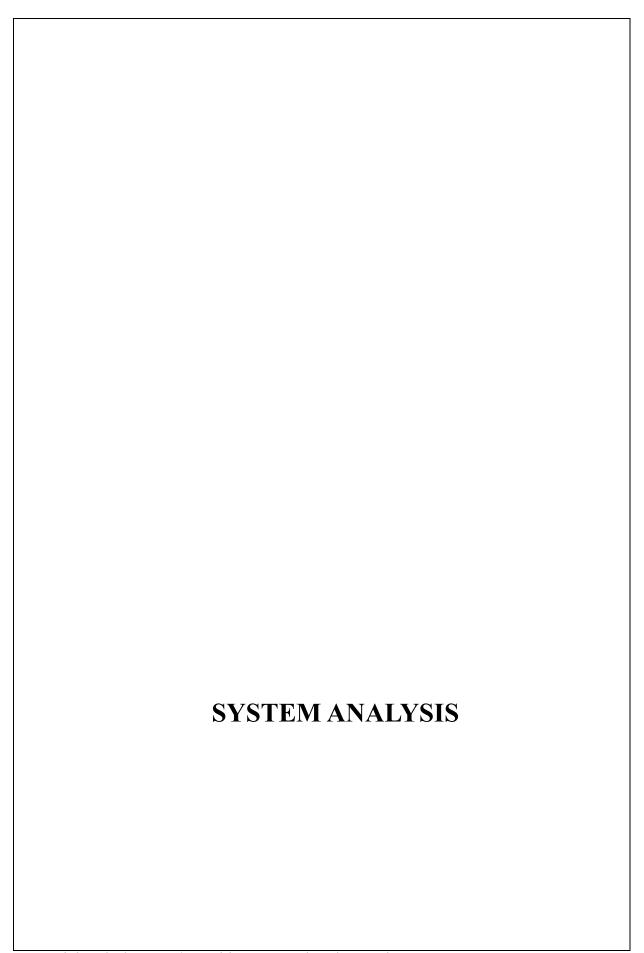
A non-functional requirement defines the quality attribute of a software system. They represent a set of standards used to judge the specific operation of a system. Example, how fast does the website load? A non-functional requirement is essential to ensure the usability and effectiveness of the entire software system. Failing to meet non-functional requirements can result in systems that fail to satisfy user needs.

Non-functional Requirements allows you to impose constraints or restrictions on the design of the system across the various agile backlogs. Example, the site should load in 3 seconds when the number of simultaneous users is > 10000. Description of non-

functional requirements is just as critical as a functional requirement.

Non- Functional requirements of Online code collaboration platform are:

- **1. Performance:** The system provides responsive and low-latency interactions. Efficient code compilation and execution.
- **2. Scalability:** The platform is scalable to accommodate a growing user base and increasing project submissions.
- **3. Security:** Robust security measures, including data encryption, secure authentication, and authorization mechanisms, protect user data and system integrity.
- **4. Usability:** The user interface is intuitive, providing an easy and enjoyable experience for both students and guides.
- **5. Compatibility:** Cross-browser compatibility and responsiveness ensure users can access the platform from various devices and browsers.
- **6. Maintainability:** The system is designed with clean and modular code, enabling easy maintenance and future enhancements.
- **7. Documentation:** Comprehensive documentation is provided for users and developers to understand and use the platform effectively.
- **8. Monitoring and Analytics**: Monitoring tools track system activities, analyse user behaviour and improve system performance.



3.1 EXISTING SYSTEM

Some existing platforms that share similar features include GitHub Classroom, GitLab, and various learning management systems (LMS) tailored for coding education. While these platforms may not cover all the specific features you've outlined, they often provide a foundation for collaborative coding and project management

Disadvantages of Existing System

Limited Integration: Certain platforms may have limitations when it comes to integrating with other tools or technologies. This could impact the overall efficiency of the development workflow.

Scalability Issues: Depending on the platform, there might be scalability issues when dealing with a large number of users or projects. This could result in slower performance or other operational challenges.

Feature Overload: Some platforms may have a vast array of features that might be overwhelming for users who only need specific functionalities. This can lead to confusion and inefficiency.

Cost: Some platforms may have associated costs for certain features or usage levels, which can be a drawback for smaller educational institutions or organizations with budget constraints.

Limited Customization: Existing platforms may not offer the level of customization you desire for tailoring the platform to your specific needs.

3.2 PROPOSED SYSTEM

The proposed system is an "Online Code Collaboration Platform" that addresses the limitations of the existing system. It provides a unified web-based platform where users (particularly

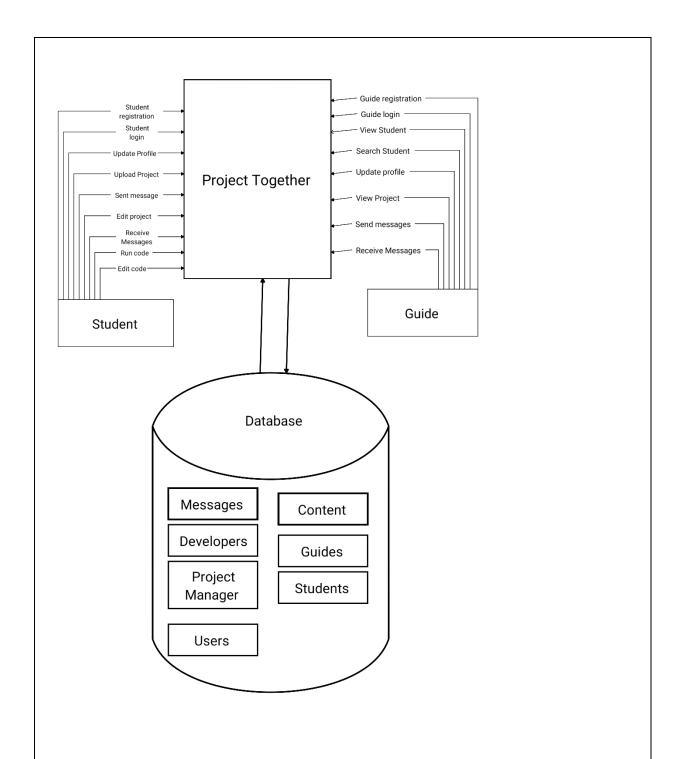
programming students) can collaborate in real-time on coding tasks. The platform supports multiple programming languages, features syntax highlighting, version control, and chat functionality. Additionally, it includes a Collaborative Project Management Tool with features like task creation, assignment, deadlines, priorities, dependencies and notifications.

Advantages of Proposed system

- Real-time collaboration on code with instant execution and output viewing.
- Integrated project management tools for effective planning and organization.
- Support for multiple programming languages.
- Features like syntax highlighting, version control, and chat functionality.
- Notifications for task assignments, due dates, and status changes.

3.3 SYSTEM ARCHITECTURE

The system architecture involves components for web development, database management, user interface design, and real-time collaboration features. It includes modules for code execution, syntax highlighting, version control, chat, project management and task assignment. The architecture ensures seamless integration and functionality across these diverse components, providing a cohesive user experience.



3.4 MODULE DESCRIPTION

In this project, there are 2 modules as following

- GUIDE
- STUDENTS

GUIDE

View and update their profiles. Upload questions/documents (e.g., PDFs) for students. View students' profiles and their uploaded documents. Provide feedback on students projects. Communicate with students through messaging.

STUDENT

Upload, manage, and update projects or code. View added projects and update their profiles. Communicate with guides through a messaging system. Write, compile, and run code within the integrated development environment.

3.5 FEASIBILITY STUDY

Feasibility is defined as the practical extent to which a project can be performed successfully. To evaluate feasibility, a feasibility study is performed, which determines whether the solution considered to accomplish the requirements is practical and workable in the software. Information such as resource availability, cost estimation for software development, benefits of the software to the organization after it is developed and cost to be incurred on its maintenance are considered during the feasibility study. To determine whether the software can be implemented using the current technology and within the specified budget and schedule.

3.5.1 Operational Feasibility

Analyse how well the platform integrates into existing workflows and educational environments. Assess the ease of use for administrators, guides, and student.

- User Adoption: User training programs and comprehensive documentation facilitate
 easy adoption for both students and guides, with ongoing user feedback informing
 continuous improvement.
- **2. Workflow Integration:** Code collaboration platform integrates seamlessly into existing workflows, minimizing disruption to regular operations for students and guides.
- Training Requirements: Identified training needs are addressed through wellstructured training programs, ensuring users can navigate and utilize the platform effectively.
- **4. Operational Impact:** It is designed to have a positive impact on operational efficiency, with minimal resource disruption during implementation and operation.
- **5. Change Management:** A well-defined change communication plan and strategies for addressing resistance to change contribute to successful platform integration.

3.5.2 <u>Technical Feasibility</u>

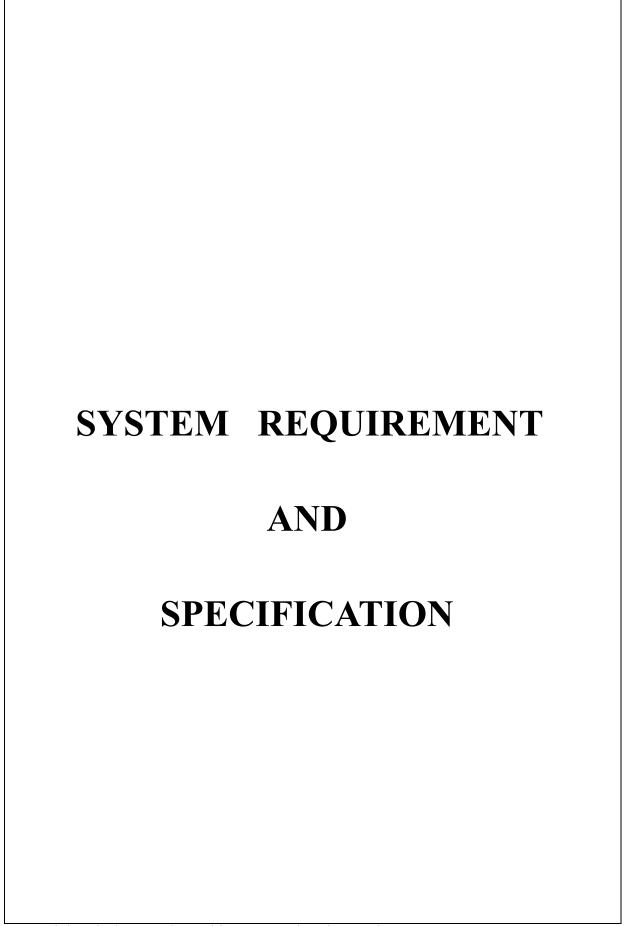
Technical feasibility assesses the current resources (such as hardware and software) and technology, which are required to accomplish user requirements in the software within the allocated time and budget. For this, the software development team ascertains whether the current resources and technology can be upgraded or added in the software to accomplish specified user requirements.

- Analyses the technical skills and capabilities of the software development team members.
- Evaluate the technical requirements, such as web development tools, databases,
 and real-time collaboration features.
- Assess the scalability and performance of the platform to handle multiple users,
 projects, and concurrent code execution.

3.5.3 ECONOMIC FEASIBILITY

Economic feasibility determines whether the required software is capable of generating financial gains for an organization. It involves the cost incurred on the software development team, estimated cost of hardware and software, cost of performing feasibility study, and so on. For this, it is essential to consider expenses made on purchases (such as hardware purchase) and activities required to carry out software development. In addition, it is necessary to consider the benefits that can be achieved by developing the software.

- Estimate the costs associated with developing, deploying, and maintaining the platform.
- Compare these costs with potential benefits, including increased productivity, collaboration, and learning outcomes.



4.1 HARDWARE SPECIFICATION

The selection of hardware is very important in the existence and proper working of any of the software. When selecting hardware, the size and capacity requirements are also important. This software is able to run with following hardware configuration.

Processor: Intel Pentium or above.

Hard Disc: 320GB.

Display Type: PC Display.

Keyboard: PC/AT Enhanced PS/2Keyboard (110/10Key).

Mouse: First/Pilot Mouse Serial (c48).

Input Device: Mouse, keyboard, camera.

Output Device: Monitor

4.2 SOFTWARE SPECIFICATION

The production of the requirements stage of the software development process

is Software Requirements Specifications (SRS) (also called a requirements document). This report lays a foundation for software engineering activities and is constructing when entire requirements are elicited and analysed. SRS is a formal report, which acts as a representation of software that enables the customers to review whether it (SRS) is according to their requirements. Also, it comprises user requirements for a system as well as detailed specifications of the system requirements.

The SRS is a specification for a specific software product, program, or set of

applications that perform particular functions in a specific environment. It serves several goals

depending on who is writing it. First, the SRS could be written by the client of a system. Second,

the SRS could be written by a developer of the system. The two methods create entirely various

situations and establish different purposes for the document altogether. The first case, SRS, is

used to define the needs and expectation of the users. The second case, SRS, is written for

various purposes and serves as a contract document between customer and developer.

Operating System: WINDOWS 8 or above for better performance.

Front end: PHP, HTML, CSS.

Back end: SQLite, PHP, JAVASCRIPT.

Software: XAMPP, visual studio code.

Web Browser: Internet Explorer/Google/Firefox.

4.3 TECHNOLOGY

1. HTML (HyperText Markup Language):

HTML is the standard markup language used to create and design documents on the

World Wide Web. It serves as the backbone of web content, defining the structure and

layout of web pages. HTML consists of a series of elements, each represented by tags,

that encapsulate content and provide information about its structure.

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2. CSS (Cascading Style Sheets):

CSS is a style sheet language used for describing the presentation and formatting of a document written in HTML or XML. It enables web developers to control the layout, appearance, and styling of web pages. CSS allows the separation of content from presentation, providing a way to create visually appealing and consistent designs across different devices and screen sizes.

3. PHP (Hypertext Preprocessor):

PHP is a server-side scripting language designed for web development, but it can also be used as a general-purpose programming language. PHP code is executed on the server, generating dynamic content that is then sent to the client's web browser. It is a powerful tool for creating interactive and dynamic web page.

4. MySQL:

MySQL is an open-source relational database management system (RDBMS) that is widely used for storing and managing structured data. It is known for its reliability, performance, and ease of use, making it one of the most popular databases in the world. MySQL is commonly used in conjunction with web applications to handle data storage and retrieval.

5. JavaScript:

JavaScript is a versatile programming language commonly used for creating interactive and dynamic content on websites. It is primarily executed in web browsers, allowing developers to enhance user experience by manipulating webpage elements, handling events, and interacting with server-side resources asynchronously. JavaScript is a crucial component of web development alongside HTML and CSS.

4.4 PLATFORM USED

1. Visual Studio Code:

Visual Studio Code, also commonly referred to as VS Code, is a source-code editor made by Microsoft for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git. Users can change the theme, keyboard shortcuts, preferences, and install extensions that add additional functionality. In the Stack Overflow 2021 Developer Survey, Visual Studio Code was ranked the most popular developer environment tool, with 70% of 82,000 respondents reporting that they use it.

2. XAMPP:

XAMPP is a free and open-source cross-platform software package that facilitates the development and testing of web applications on a local server environment. The name "XAMPP" is an acronym that stands for:

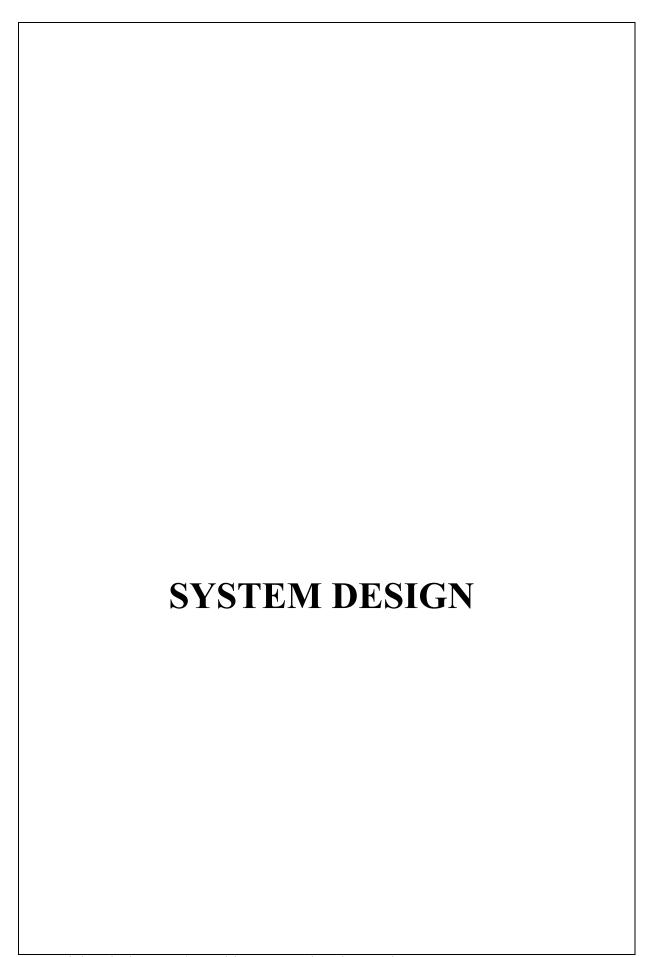
X: Stands for "cross-platform."

A: Stands for "Apache," which is a widely used web server.

M: Stands for "MySQL," a popular relational database management system.

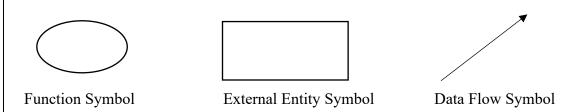
P: Stands for "PHP," a server-side scripting language.

P: Stands for "Perl," another programming language.

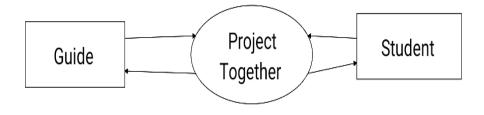


5.1 DATAFLOW DIAGRAM

Data flow diagrams are useful in understanding a system and can be effectively used for partitioning during the analysis. A DFD shows the flow of data through a system. It is used to describe and analyse the moment of data through a system-manual or automated- including the processes, stores of data, and delays in the system. Data flow diagrams are the central tool and the basis from which other components are developed. The transformation of data from input to output through processes may be described logically and independently of the physical components. It shows the movements of data through the different transformations or processes in the system. The result or output of a process is denoted using the output symbol.



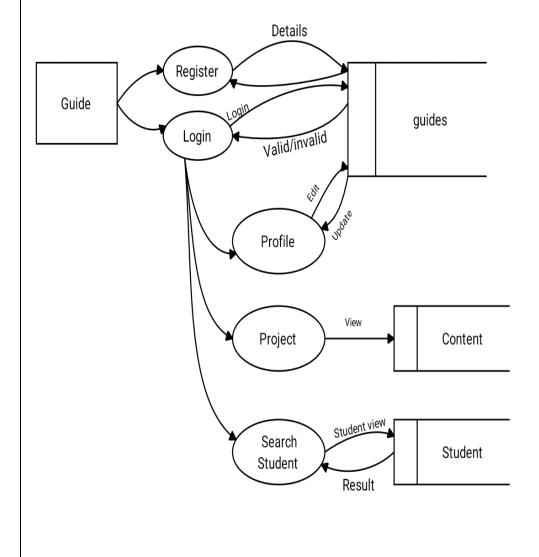
DFD LEVEL 0:

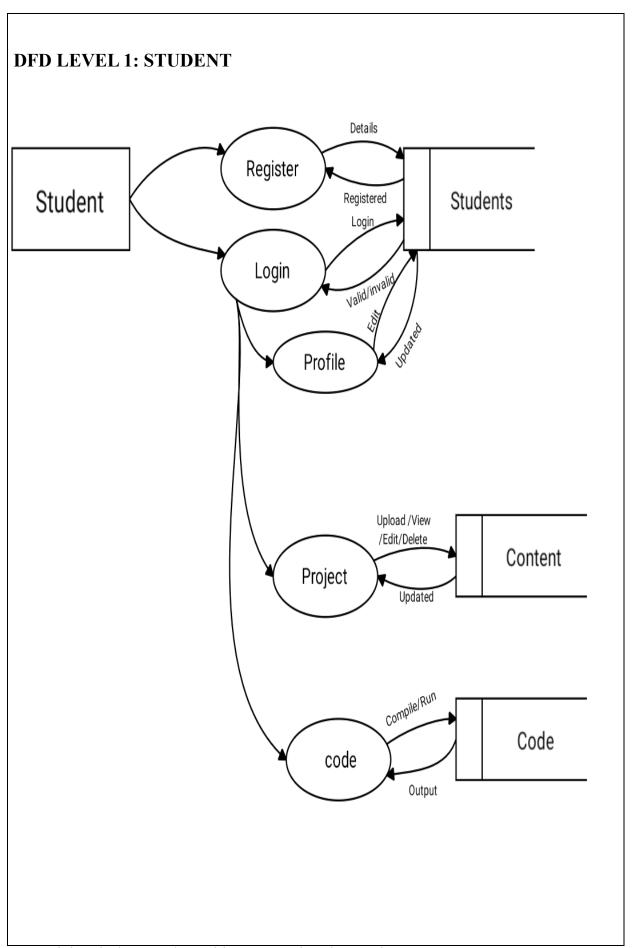


Description

Here it represents the level 0 data flow diagram for the project where the users can get on access to the system. It aims to show how the entire system works at a glance. Here the users get interacted with the system through request and receives the responses as per request been initiated.

DFD LEVEL 1: GUIDE





5.2 USECASE DIAGRAM

The purpose of use case diagram is to capture the dynamic aspect of a system. Use Case diagrams are used to gather the requirements of a system including internal and external.

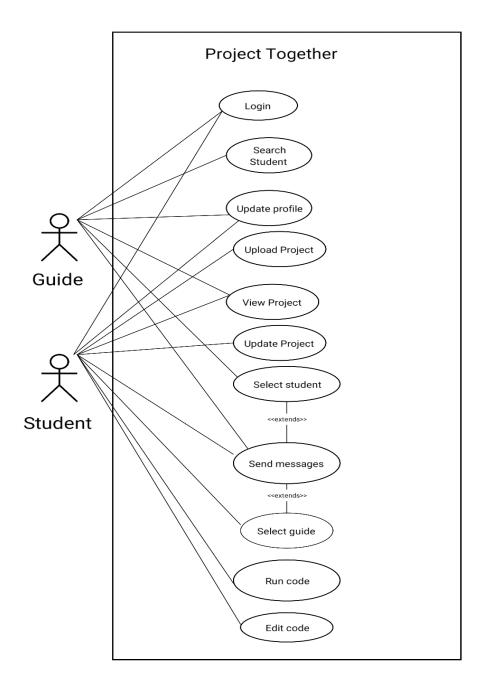


Figure 5.2.1: USE CASE DIAGRAM

5.3 CLASS DIAGRAM

The class diagram is a static diagram. It represents the static view of an application. Class diagram is not only used for visualizing, describing and documenting different aspects of a system but also for constructing executable code of the software application. The class diagram describes the attributes and operations of a class and also the constraints imposed on the system. The class diagrams are widely used in the modelling of object- oriented systems because they are the only UML diagrams which can be mapped directly with object-oriented languages. The class diagram shows a collection of classes, interfaces, associations, collaborations and constraints. It is also known as a structural diagram.

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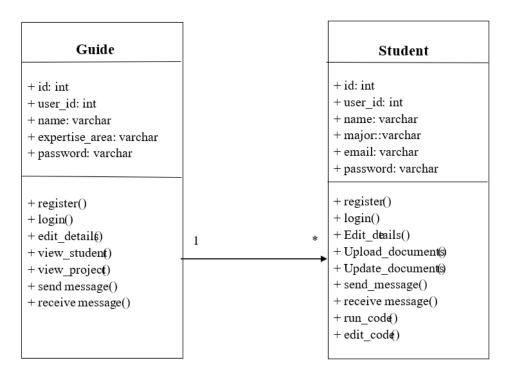
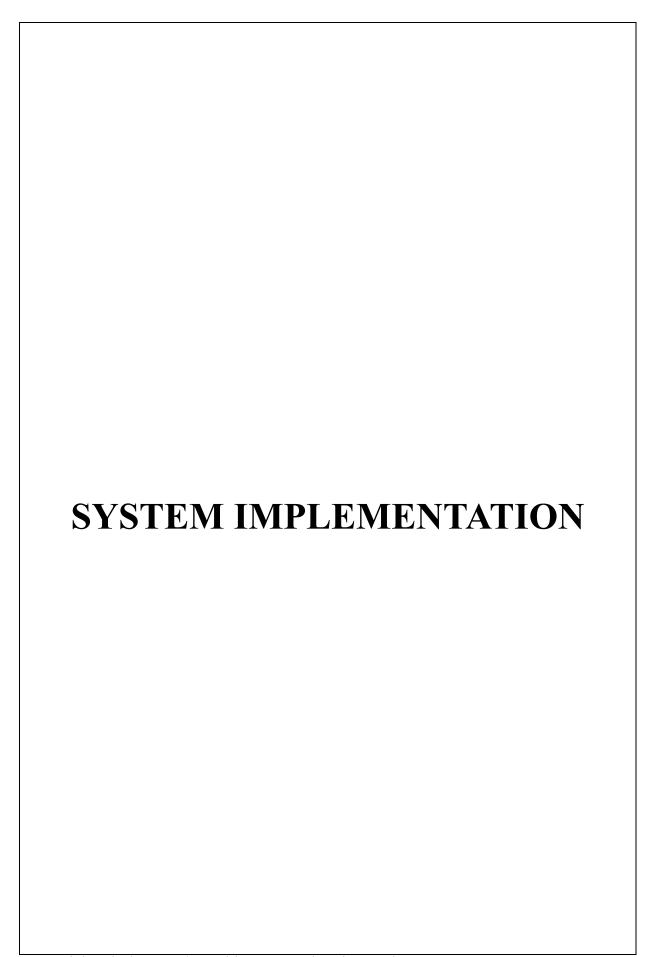


Figure 5.3.1: class diagram



The operational flow of this project involves seamless interactions among guide and student.

1. User Registration and Login

Users register with the platform using valid credentials.

• Upon registration, users can log in to their accounts.

2. Dashboard

After logging in, users are directed to a personalized dashboard. The dashboard provides an overview of ongoing projects, notifications, and recent activities.

3. Project Creation

Users can create a new project by providing project details, objectives, and choosing collaborators. The system generates a unique identifier for each project.

4. Code Compilation

Within the project, users can write, edit, and compile code in multiple programming languages. The platform supports real-time code compilation, providing immediate feedback.

5. Project Management

Users can organize project tasks, set milestones, and track progress using project management tools. Collaborators can access and update project details.

6. Messaging System

Integrated messaging allows users and collaborators to communicate within the platform. Users can discuss project details, seek guidance, and share information.

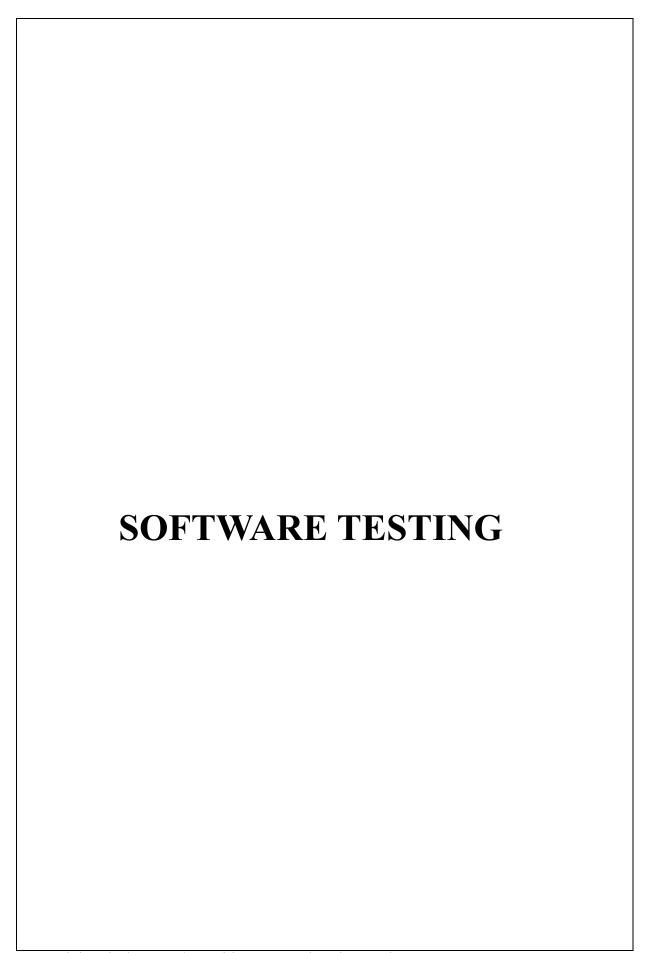
7. Collaboration

Collaborators can contribute to the project by editing code, uploading documents, or providing feedback. Version control ensures the integrity of the project and tracks changes made by each collaborator.

8. Project Showcase

Once a project is completed, users can showcase it on their profile or a dedicated gallery. Showcase includes project details, code snippets, and documentation.

9. Notifications
Users receive notifications for project updates, messages, and collaboration requests. Notifications keep users informed about relevant activities within the platform.
10. User Profile
Users can customize their profiles, including personal information, skills, and a
portfolio of completed projects.



7.1 SYSTEM TESTING

The aim of program testing is to identify all defects in a program. Testing a program involves providing the program with a set of test inputs (or test cases) and observing if the program behaves as expected. This phase is necessary in order to check the efficiency of the system developed. System testing is a critical element of the software quality assurance and represents the ultimate review of specification, design and coding. It is the process of exercising or evaluating a system by manual or automatic means to verify that it satisfies the specified requirements or to identify difference between expected and actual results. Testing is the one step in the software engineering process that could be viewed as destructive rather than constructive. Testing requires that the developer discard preconceived notions of the Correctness of the software just developed and overcome a conflict of interest that occurs when errors are uncovered. If testing is conducted successfully, it uncovers errors in the software. As a secondary benefit, testing demonstrates that software functions appear to be working according to the specification. Testing provides a good indication of software reliability and some indication of software quality as a whole. Testing cannot show the absence of defects, it can only show that software defects are present. As the developed software does not fulfil all the requirements of a user, so it is not possible to test with real time data. Still then we tried our best to test each individual module and also as an integrated modules (as a whole) with sufficient data that the user can have, fulfilling the objective of our Web Browser. Testing performs a very critical role for quality assurance and ensuring there liability of the software. During testing, the program to be tested is executed with a set of test cases and output of the program for the test cases and output of the program for the test case is evaluated to determine if the program is performing as it is expected to. Hence:

- > Testing is the process of executing a program with the intention of finding errors
- ➤ A good test case is the one that has a high probability of finding as yet undiscovered error.
- ➤ A successful test is one yet uncovers as yet undiscovered errors. Testing is performed according to two different strategies:
- ➤ Code Testing: The code testing strategy examines the logic of program i.e. the analyst develops test cases that results in executing every instruction in the program. Basically, during code testing every path through the program is tested.
- > Specification Testing: To perform specification testing the analyst examines the specification starting what the program should do and how it should perform under various conditions. Then test cases are developed for each. In order to find which strategies to follow, levels of testing should be followed.

7.2 TESTING TECHNIQUES

LEVELS OF TESTING

The basic levels are unit testing, integration testing, system testing and acceptance testing. These different levels of testing attempt to detect different types of faults. The different levels of testing are as follows:

➤ Unit Testing: In this testing different modules are tested against specification produced during design of the modules. Unit testing is essential for verification of code produced during the coding phase and hence its main goal is to test internal logic modules.

- ➤ Integration Testing: In this testing tested modules are combined into subsystems which are then tested. The goal here is to see if the modules can be indicated properly and emphasis is being on testing interfaces between modules.
- ➤ System testing: In this testing the entire software system is tested. The reference document for this process is the requirements document and the goal is to see if the system meets its requirements. This is normally performing on realistic data of the client to demonstrate for the software is working satisfactorily. Testing here focus on external behaviour of the system.

TYPE OF TESTING

Black Box Testing

Black Box Testing is testing the software without any knowledge of the inner working, structure and language of the module being tested. Black box tests, as most other kind of tests, must be written from a definite source document, such as specification and requirement documents. It is testing in which the software under test is treated, as a black box. You cannot "see" into it. The test provide inputs and responds to outputs without considering how the software work.

White Box Testing

White Box Testing is a Testing in which software teacher has knowledge of the inner working structure and language of the software, or at least its purpose. It is used to test area that cannot be reached from a black box level.

7.3 USED TECHNIQUES

Unit Testing Unit testing is usually conducted as a part of combined code and unit test phase of the software lifecycle, although it is not uncommon for coding and unit testing to be conducted as two distinct phases.

Test Object:

- ➤ All field entries must work properly.
- > Pages must be activated from the identified link.
- ➤ The entry screen, message and responses must not be delayed.

Features to be tested:

- > Verify that the entries are of the correct format.
- ➤ No duplicate entries should be allowed.

System Testing

The purpose of testing is to discover errors. Testing is the process of trying to discovery conceivable fault for weakness in a work product. It provides a way to check the functionality of components, sub-assemblies, assemblies and /or a finished product. It is the process of exercising software with the intent of ensuring the software system meets its requirement and user explanations and does not fail in an acceptable manner. There is a various type of tests. Each tests type address specific testing requirements.

Integration Testing

Software integration testing is the increment testing of two or integrated software

component on a single platform to produce failure caused by interface defects. The task of

integration test is to check that the components or software application, e.g. - components in a

software system or one step up software applications at the company level interact without

error.

Test Result: All the test cases mentioned above passed successfully. No defects encountered.

Functional Testing

Function test provide systematic demonstration that functions tested are available as

specified by business and technical requirements, system documentation, and user manuals.

Function Testing is testing is centered on the following items:

Valid input: identified classes of valid input must be accepted.

Invalid input: identified class of invalid input must be rejected.

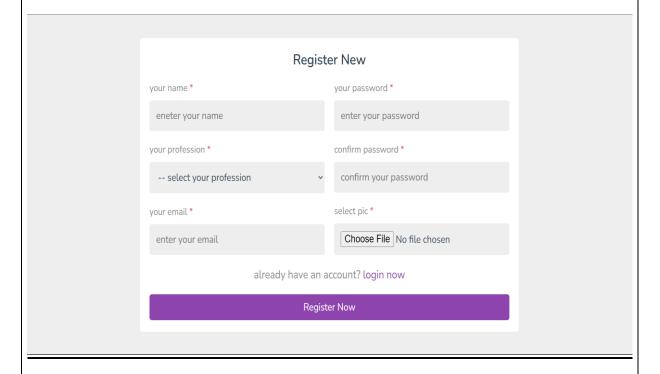
Functions: identified function must be exercised.

Output: identified classes of applications output must be exercised.

System/Procedure: Interfacing systems or procedures must be invoked.

7.4 SCREEN TESTING

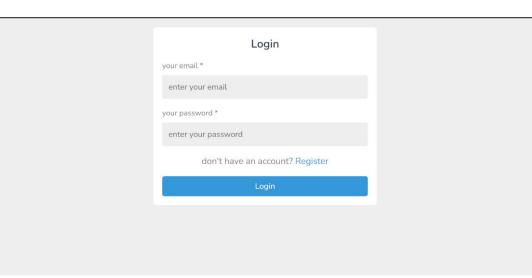
Registration page



CASE	INPUT
1	Create account

CASE	EXPECTED RESULT	OBTAINED RESULT	REMARKS
1	The account created successfully	The account created successfully	Success

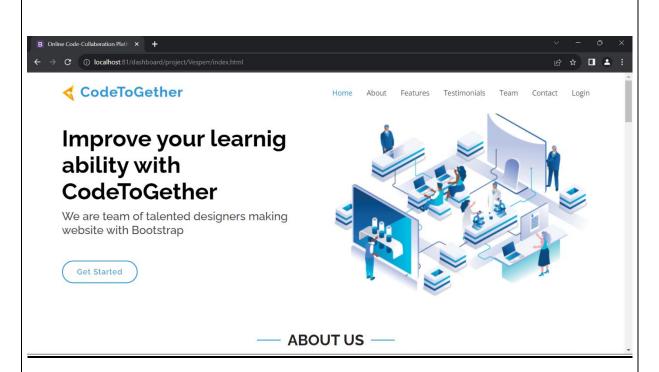
Login Page



CASE	INPUT
1	Click on the Login Button
2	Click on Register Button

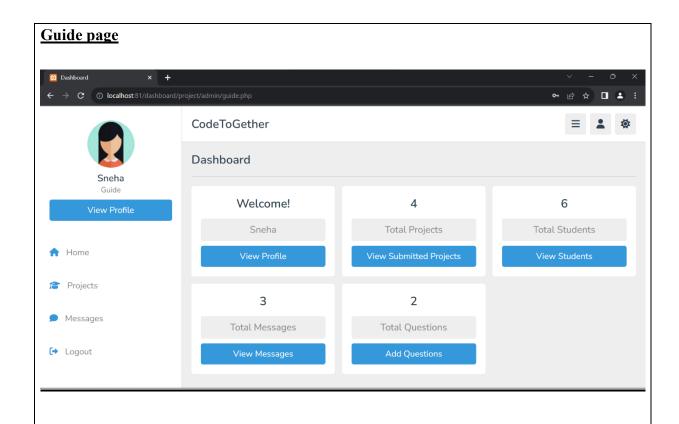
CASE	EXPECTED RESULT	OBTAINED RESULT	REMARKS
1	Go to the login page	Goes to the login page	Success
2	Account creation failed	Account creation failed	Unsuccess

Home page



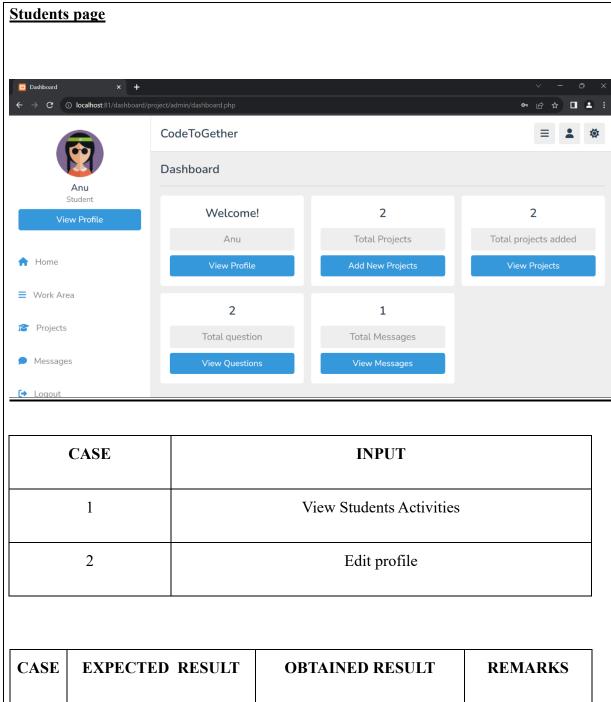
CASE	INPUT
1	Create an account

CASE	EXPECTED RESULT	OBTAINED RESULT	REMARKS
1	The account is created successfully	The account is created successfully	Success

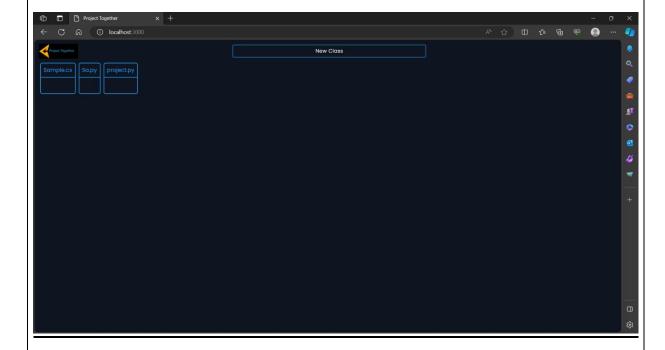


CASE	INPUT
1	Upload Documents
2	Edit Profile

CASE	EXPECTED RESULT	OBTAINED RESULT	REMARKS
1	Documents Uploaded Successful	Upload Successful	Success
2	Profile edit successful	Edit successful	Success

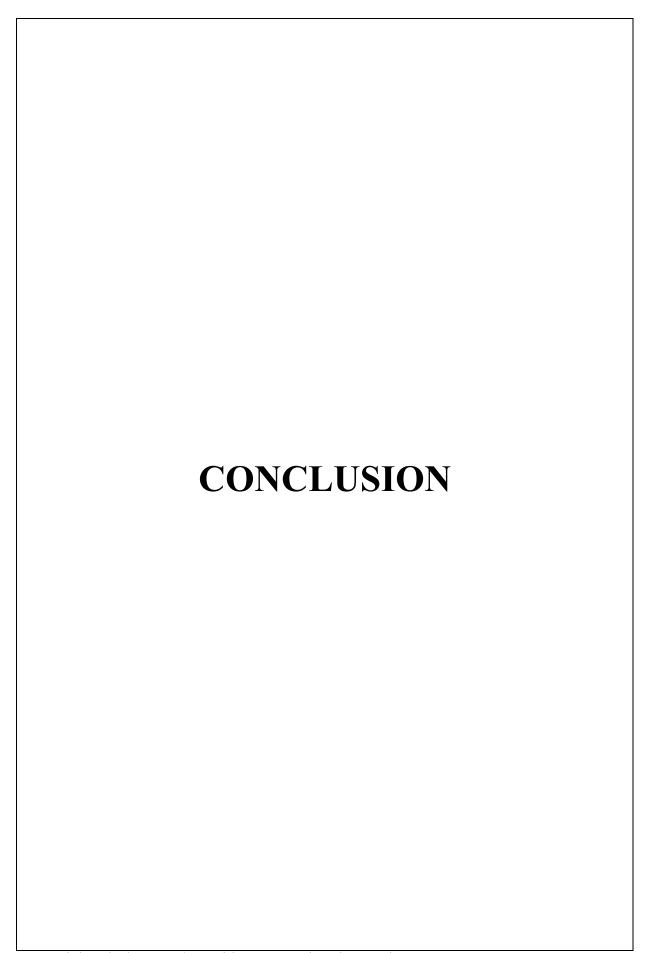


Workspace page



CASE	INPUT
1	Create new file
2	Code Execution

CASE	EXPECTED RESULT	OBTAINED RESULT	REMARKS
1	The filet is created successfully	The file is created successfully	Success
2	Code executed successful	Execution successful	Success



CONCLUSION

In conclusion, the Project Together stands as a cutting-edge online platform that redefines collaborative project management. Its user-centric design prioritizes efficiency, offering students and guides a seamless space for code collaboration, document sharing, and real-time code execution. The integrated messaging system not only facilitates communication but also cultivates a sense of cohesion throughout the project experience. By combining these features, Project Together not only streamlines collaborative efforts but also enhances the overall project workflow. As a dynamic solution, it is poised to make a significant impact in the realm of collaborative project management, providing a modern and effective tool for students and guides alike.

Our code collaboration platform provides a robust environment for seamless collaboration among students and guides. With features such as document management, code compilation, and a messaging system, it facilitates efficient communication and shared development. This platform not only streamlines the collaborative coding process but also enhances the overall learning experience for both students and guides.

8.1 FUTUTE SCOPE

The future scope of Project ToGather could involve several enhancements and expansions to meet the evolving needs of the developer community. Here are some potential avenues for future development:

➤ Advanced Code Analysis Tools

Integrate advanced code analysis tools and static code analysis to help developers identify and fix potential issues in their code. This can contribute to improving code quality.

➤ Real-Time Collaboration

Implement real-time collaboration features, such as live coding sessions, pair programming support, and instant messaging within the platform to enhance synchronous collaboration among developers.

> Enhanced Learning Resources

Introduce educational resources like tutorials, code challenges, and interactive learning modules to further support developers in their learning journey. This can turn Project ToGather into a comprehensive learning and development platform.

➤ Integration with CI/CD Pipelines

Extend integration capabilities to include continuous integration and continuous delivery (CI/CD) pipelines. This can automate the testing and deployment processes, streamlining the development lifecycle.

Community Forums and Discussions

Create dedicated forums or discussion boards where developers can discuss projects, seek help, and share insights. This fosters a sense of community and knowledge exchange.

➤ Mobile Application Support

Develop a mobile application version of Project ToGather to enable developers to collaborate on the go, access projects, and receive notifications about updates and collaborations

> Expanded Language Support

Continuously expand the list of supported programming languages and frameworks to accommodate a broader range of developers with diverse preferences and expertise.

➤ AI-Assisted Code Review

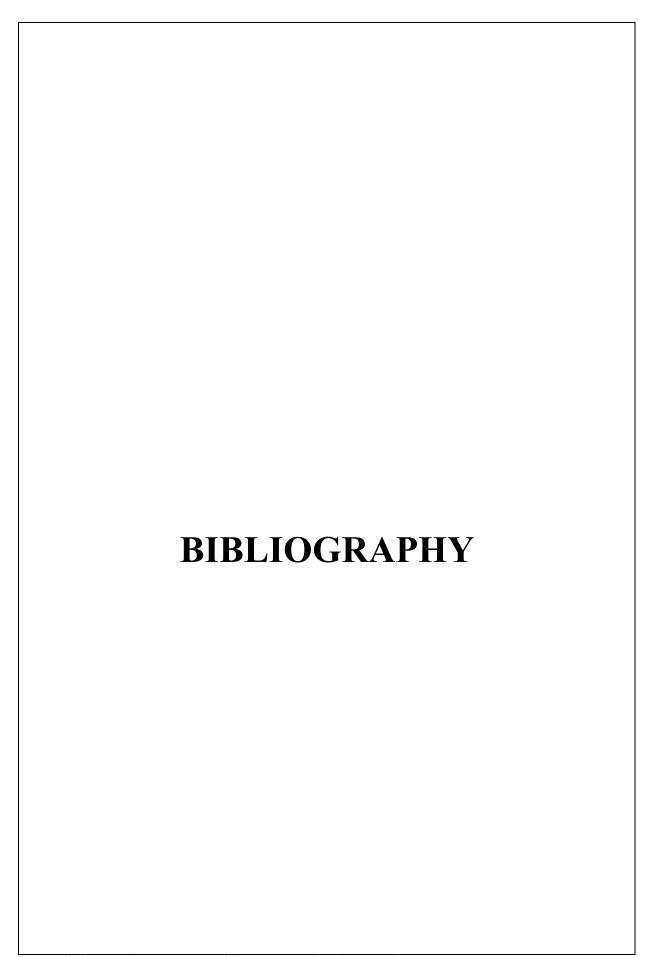
Implement AI-powered code review suggestions to assist developers in improving their code quality and adherence to best practices.

> Gamification and Recognition

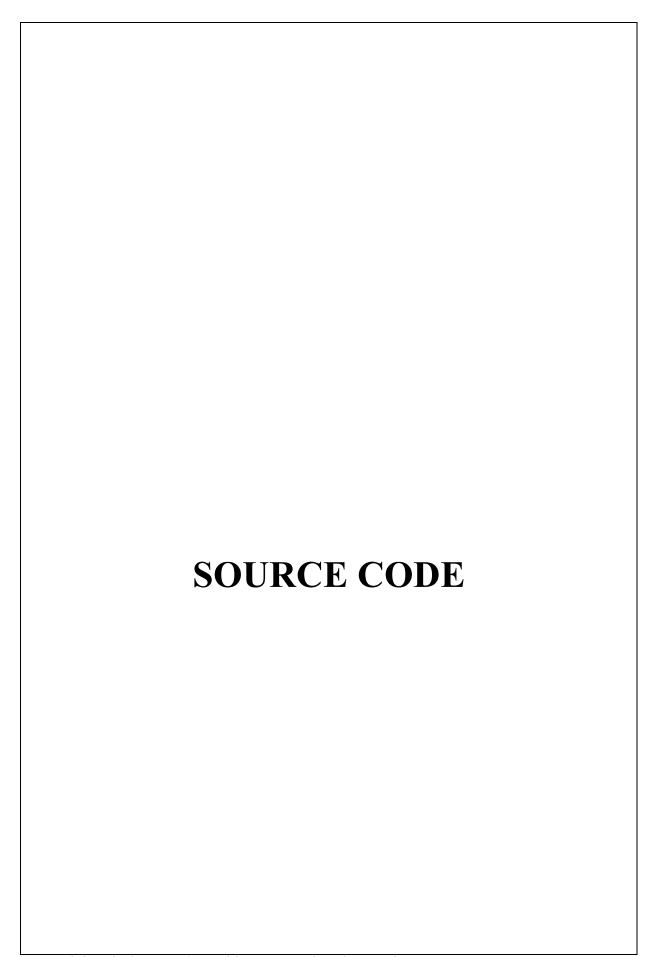
Introduce gamification elements and a system of badges or achievements to recognize and reward developers for their contributions, fostering a sense of accomplishment and motivation

> Partnerships and Industry Integration

Form partnerships with educational institutions, industry organizations, or companies to integrate real-world projects, internships, or collaborative opportunities directly into the platform.



Sources which are used https://code.visualstudio.com https://www.phpmyadmin.net Reference https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css https://www.coursera.org/learn/html-css-javascript-for-web-developers ➤ Web development and Design foundation with HTML5, Ninth edition, Pearson Laura Lemay, Rafe Colburn, Jennifer Kyrnin, "Mastering HTML, CSS & JavaScript Web Publishing", BPB Publications, 2016



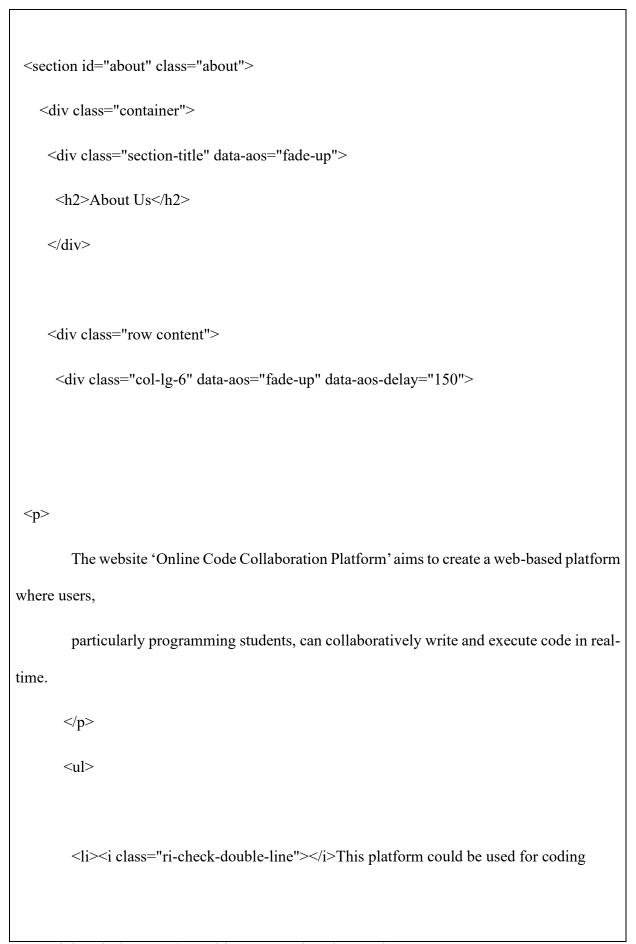
Index.html <!DOCTYPE html> <html lang="en"> <head> <meta charset="utf-8"> <meta content="width=device-width, initial-scale=1.0" name="viewport"> <title>Online Code-Collaboration Platform</title> <meta content="" name="description"> <meta content="" name="keywords"> <link href="assets/img/favicon.png" rel="icon"> link href="assets/img/apple-touch-icon.png" rel="apple-touch-icon"> link href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,600,600i,700,7 00i|Raleway:300,300i,400,400i,500,500i,600,600i,700,700i|Poppins:300,300i,400,400i,500,5 00i,600,600i,700,700i" rel="stylesheet">

```
link
              href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css"
rel="stylesheet
integrity="sha384-
T3c6CoIi6uLrA9TneNEoa7RxnatzjcDSCmG1MXxSR1GAsXEV/Dwwykc2MPK8M2HN"
crossorigin="anonymous">
<script
           src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/js/bootstrap.bundle.min.js"
integrity="sha384-
C6RzsynM9kWDrMNeT87bh95OGNyZPhcTNXj1NW7RuBCsyN/o0jlpcV8Qyq46cDfL"
crossorigin="anonymous"></script>
 <link href="assets/vendor/aos/aos.css" rel="stylesheet">
 link href="assets/vendor/bootstrap/css/bootstrap.min.css" rel="stylesheet">
 <link href="assets/vendor/bootstrap-icons/bootstrap-icons.css" rel="stylesheet">
 link href="assets/vendor/boxicons/css/boxicons.min.css" rel="stylesheet">
 <link href="assets/vendor/glightbox/css/glightbox.min.css" rel="stylesheet">
 link href="assets/vendor/remixicon/remixicon.css" rel="stylesheet">
 link href="assets/vendor/swiper/swiper-bundle.min.css" rel="stylesheet">
 <link href="assets/css/style.css" rel="stylesheet">
</head>
```

```
<body>
<header id="header" class="fixed-top d-flex align-items-center">
  <div class="container d-flex align-items-center justify-content-between">
   <div class="logo">
  <a href="index.html" class="logo-link">
    <h1><img src="assets/img/logo.png" alt="logo" class="img-fluid logo-img">
    ProjectToGether</h1>
  </a>
</div>
   <nav id="navbar" class="navbar">
    <ul>
     <a class="nav-link scrollto active" href="#hero">Home</a>
     <a class="nav-link scrollto" href="#about">About</a>
     <a class="nav-link scrollto" href="#services">Features</a>
     <a class="nav-link scrollto" href="#testimonials">Testimonials</a>
```

```
<a class="nav-link scrollto" href="#team">Team</a>
      <a class="nav-link scrollto" href="#contact">Contact</a>
      < 1i
                                                                  class="dropdown"><a
href="http://localhost:81/dashboard/project/admin/login.php"><span>Login</span> </i>
<i class="bi bi-list mobile-nav-toggle"></i>
   </nav>
  </div>
 </header>
 <section id="hero" class="d-flex align-items-center">
  <div class="container">
   <div class="row">
    <div class="col-lg-6 pt-5 pt-lg-0 order-2 order-lg-1 d-flex flex-column justify-content-</pre>
center">
```

```
<h1 data-aos="fade-up">Improve your learning ability with ProjectToGether</h1>
      <h2 data-aos="fade-up" data-aos-delay="400">We are team of talented designers
making website with Bootstrap</h2>
     <div data-aos="fade-up" data-aos-delay="800">
       <a href="#about" class="btn-get-started scrollto">Get Started</a>
      </div>
</div>
    <div class="col-lg-6 order-1 order-lg-2 hero-img" data-aos="fade-left" data-aos-</pre>
delay="200">
     <img src="assets/img/hero-img.png" class="img-fluid animated" alt="">
    </div>
   </div>
  </div>
 </section>
 <main id="main">
```



assignments, group projects, and learning purposes.

<i class="ri-check-double-line"></i> The platform can support multiple
programming languages and provide features like syntax highlighting,

version control, and chat functionality to enhance collaboration.

<i class="ri-check-double-line"></i> This web-based platform also provides
collaborative project management Tool That enables teams to plan,

organize, and track tasks collaboratively, fostering effective communication and project coordination.

</div>

<div class="col-lg-6 pt-4 pt-lg-0" data-aos="fade-up" data-aos-delay="300">

>

This website provides a gant chart to visualize project timelines, Task dependencies, and progress.

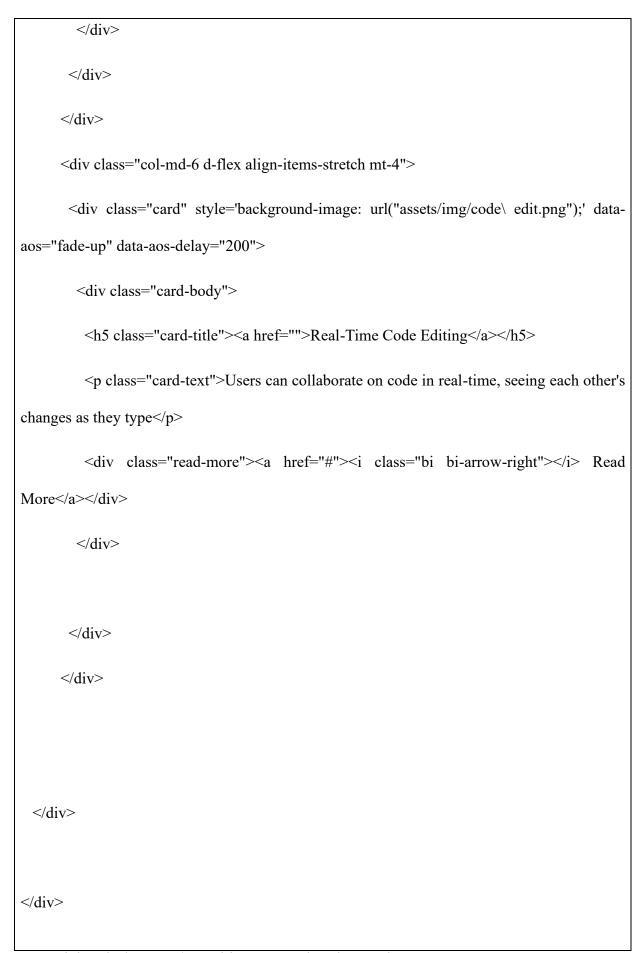
This helps teams manage project schedules effectively. And set Notifications to alert users about

task assignments, due date reminders, and changes in task Status.

```
<a href="#" class="btn-learn-more">Learn More</a>
    </div>
  </div>
 </div>
</section>
<section id="services" class="services">
 <div class="container">
  <div class="section-title" data-aos="fade-up">
    <h2>Features</h2>
    The website provide key feacturs 
</div>
<section id="more-services" class="more-services">
 <div class="container">
  <div class="row">
```

```
<div class="col-md-6 d-flex align-items-stretch">
      <div class="card" style='background-image: url("assets/img/syntax.png");'</pre>
aos="fade-up" data-aos-delay="100">
        <div class="card-body">
         <h5 class="card-title"><a href="">Syntax Highlight</a></h5>
         Provide syntax highlighting for different programming
languages to improve code readability.
         <div class="read-more"><a href="#"><i class="bi bi-arrow-right"></i> Read
More</a></div>
        </div>
      </div>
     </div>
 <div class="col-md-6 d-flex align-items-stretch mt-4 mt-md-0">
      <div class="card" style='background-image: url("assets/img/message.png");' data-</pre>
aos="fade-up" data-aos-delay="200">
        <div class="card-body">
```

```
<h5 class="card-title"><a href="">Chat Functionality</a></h5>
        Include a chat interface for users to communicate with each
other..
        <div class="read-more"><a href="#"><i class="bi bi-arrow-right"></i> Read
More</a></div>
       </div>
      </div>
     </div>
     <div class="col-md-6 d-flex align-items-stretch mt-4">
      <div class="card" style='background-image: url("assets/img/multi-language.jpg");'</pre>
data-aos="fade-up" data-aos-delay="100">
       <div class="card-body">
        <h5 class="card-title"><a href="">Multi-Language Support</a></h5>
The platform should support popular programming languages like
Python, Java, C++, etc
        <div class="read-more"><a href="#"><i class="bi bi-arrow-right"></i> Read
More</a></div>
```



```
</section>
  <section id="testimonials" class="testimonials section-bg">
   <div class="container">
    <div class="section-title" data-aos="fade-up">
      <h2>Testimonials</h2>
      Our Website users says
    </div>
    <div class="testimonials-slider swiper" data-aos="fade-up" data-aos-delay="100">
      <div class="swiper-wrapper">
       <div class="swiper-slide">
        <div class="testimonial-wrap">
         <div class="testimonial-item">
<img src="assets/img/testimonials/testimonials-1.jpg" class="testimonial-img" alt="">
```

```
<h3>Saul Goodman</h3>
          >
           <i class="bx bxs-quote-alt-left quote-icon-left"></i>
           Project Together website supports a wide range of programming languages,
           allowing users to explore different technologies. it makes me to run my
code any language
           <i class="bx bxs-quote-alt-right quote-icon-right"></i>
          </div>
        </div>
       </div>
      <div class="swiper-slide">
        <div class="testimonial-wrap">
         <div class="testimonial-item">
          <img src="assets/img/testimonials/testimonials-2.jpg" class="testimonial-img"
alt="">
          <h3>Sara Wilsson</h3>
>
```

<i class="bx bxs-quote-alt-left quote-icon-left"></i> This platform is designed with a clean and intuitive interface, making it easy to navigate and find relevant information. It is more easy for students like me to navigate through it. <i class="bx bxs-quote-alt-right quote-icon-right"></i> </div> </div> </div> <div class="swiper-slide"> <div class="testimonial-wrap"> <div class="testimonial-item"> <img src="assets/img/testimonials/testimonials-3.jpg" class="testimonial-img"</pre> alt=""> <h3>Jena Karlis</h3> > <i class="bx bxs-quote-alt-left quote-icon-left"></i>

This platform is a versatile coding platform that offers a variety of features suitable for programmers and developers. Its user-friendly interface, collaborative capabilities, and integration with popular tools make it an attractive option for students. <i class="bx bxs-quote-alt-right quote-icon-right"></i> </div> </div> </div> <div class="swiper-slide"> <div class="testimonial-wrap"> <div class="testimonial-item"> src="assets/img/testimonials/testimonials-4.jpg" class="testimonial-img" alt=""> <h3>Matt Brandon</h3> > <i class="bx bxs-quote-alt-left quote-icon-left"></i> Project Together website supports a wide range of programming languages, allowing users to explore different technologies. it makes me to run my code any language

<i class="bx bxs-quote-alt-right quote-icon-right"></i>

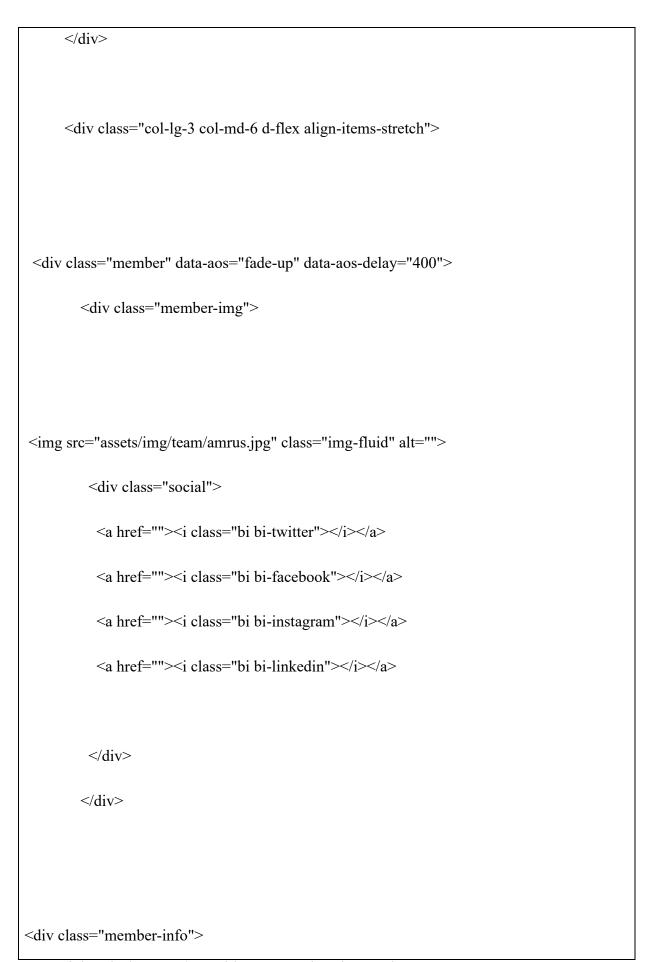
```
<i class="bx bxs-quote-alt-right quote-icon-right"></i>
          </div>
        </div>
       </div>
       <div class="swiper-slide">
        <div class="testimonial-wrap">
         <div class="testimonial-item">
                 src="assets/img/testimonials/testimonials-5.jpg" class="testimonial-img"
alt="">
          <h3>John Larson</h3>
          >
           <i class="bx bxs-quote-alt-left quote-icon-left"></i>
           This platform is designed with a clean and intuitive interface, making it easy to
navigate and find relevant information. It is more easy for students like me to
navigate through it.
           <i class="bx bxs-quote-alt-right quote-icon-right"></i>
          </div>
```

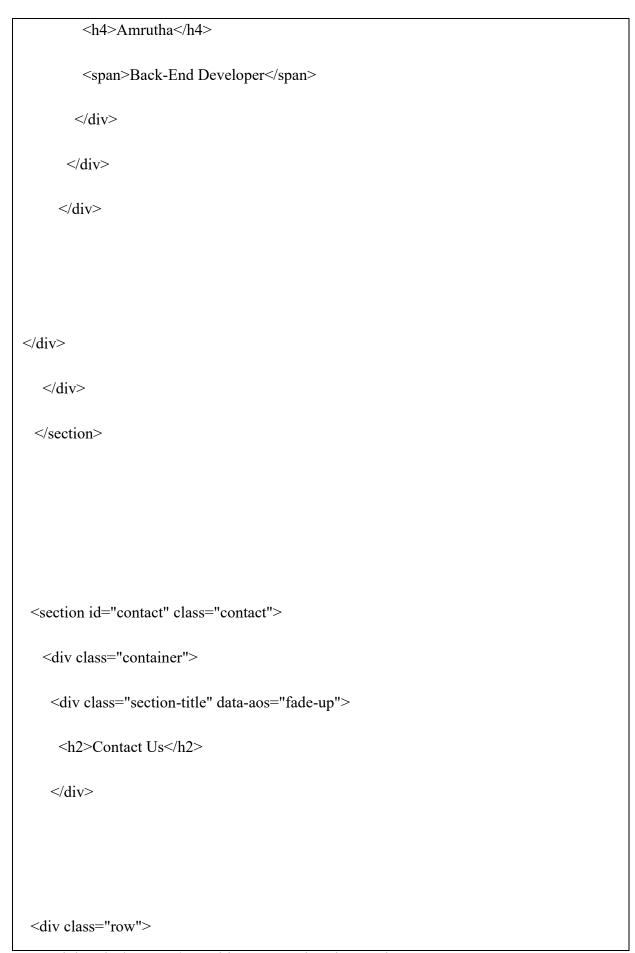
```
</div>
     </div>
    </div>
    <div class="swiper-pagination"></div>
  </div>
 </div>
</section>
<section id="team" class="team section-bg">
 <div class="container">
  <div class="section-title" data-aos="fade-up">
    <h2>Team</h2>
    Our Developing Team
   </div>
   <div class="row">
    <div class="col-lg-3 col-md-6 d-flex align-items-stretch">
     <div class="member" data-aos="fade-up" data-aos-delay="100">
<div class="member-img">
```

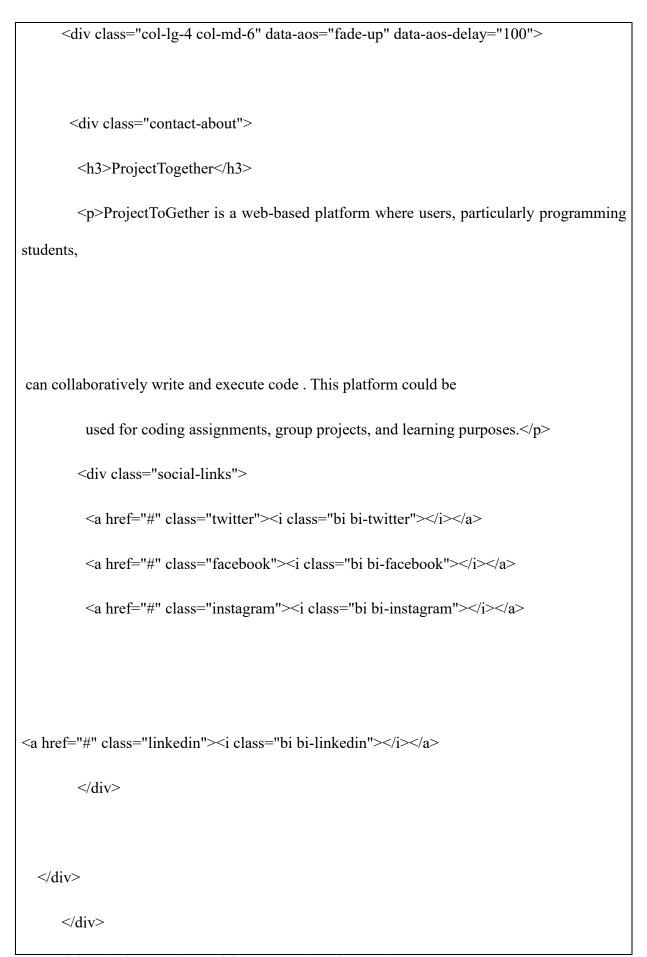
```
<img src="assets/img/team/anandu.jpg" class="img-fluid" alt="">
        <div class="social">
         <a href=""><i class="bi bi-twitter"></i>/a>
         <a href=""><i class="bi bi-facebook"></i></a>
         <a href=""><i class="bi bi-instagram"></i></a>
         <a href=""><i class="bi bi-linkedin"></i></a>
        </div>
       </div>
       <div class="member-info">
        <h4>Anandu</h4>
        <span>Front-End Developer</span>
       </div>
      </div>
    </div>
    <div class="col-lg-3 col-md-6 d-flex align-items-stretch">
<div class="member" data-aos="fade-up" data-aos-delay="200">
```

```
<div class="member-img">
         <img src="assets/img/team/dinu.jpg" class="img-fluid" alt="">
         <div class="social">
          <a href=""><i class="bi bi-twitter"></i></a>
          <a href=""><i class="bi bi-facebook"></i></a>
          <a href=""><i class="bi bi-instagram"></i></a>
          <a href=""><i class="bi bi-linkedin"></i></a>
         </div>
        </div>
        <div class="member-info">
         <h4>Dinsha</h4>
         <span>Front-End Developer</span>
        </div>
       </div>
      </div>
<div class="col-lg-3 col-md-6 d-flex align-items-stretch">
```

```
<div class="member" data-aos="fade-up" data-aos-delay="300">
  <div class="member-img">
<img src="assets/img/team/suttu (2).jpg" class="img-fluid" alt="">
         <div class="social">
          <a href=""><i class="bi bi-twitter"></i></a>
          <a href=""><i class="bi bi-facebook"></i></a>
          <a href=""><i class="bi bi-instagram"></i></a>
          <a href=""><i class="bi bi-linkedin"></i></a>
         </div>
        </div>
        <div class="member-info">
         <h4>Suhas</h4>
         <span>Back-End Developer</span>
        </div>
</div>
```





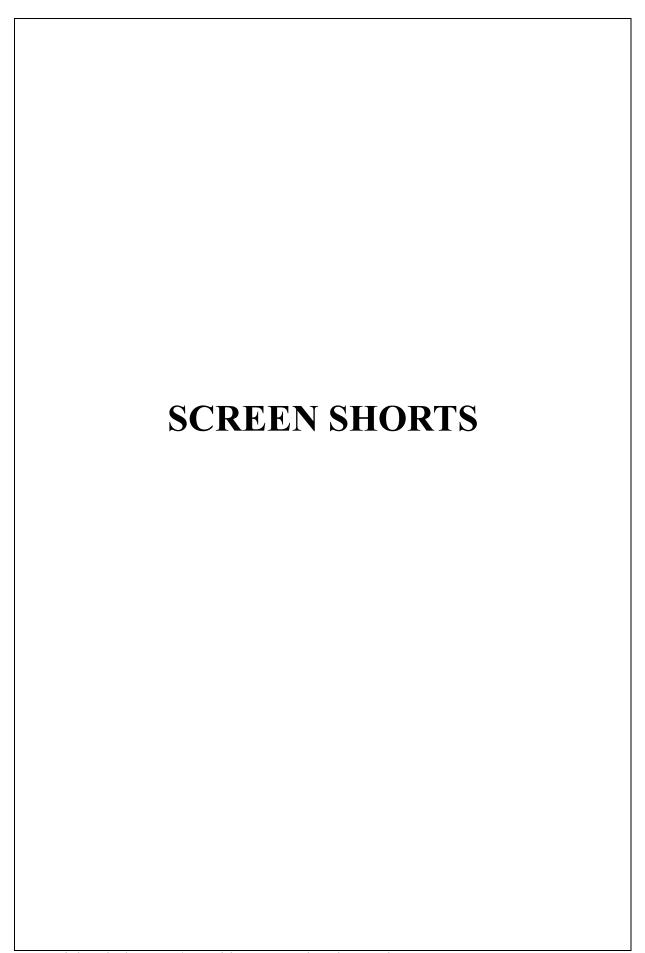


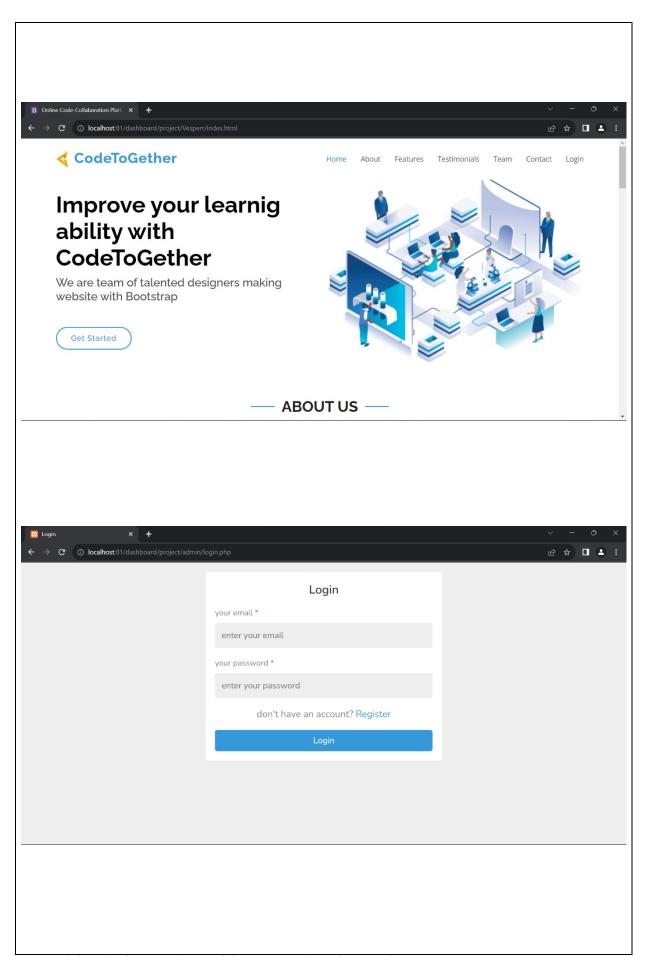
```
class="col-lg-3 col-md-7 mt-4 mt-md-0" data-aos="fade-up"
                                                                        data-aos-
delay="200">
      <div class="info">
       <div>
        <i class="ri-map-pin-line"></i>
  A108 Adam Street<br/>br>New York, NY 535022
       </div>
       <div>
        <i class="ri-mail-send-line"></i>
        infocodelab@gmail.com
       </div>
       <div>
<i class="ri-phone-line"></i>
        +9 5589 55488 55s
```

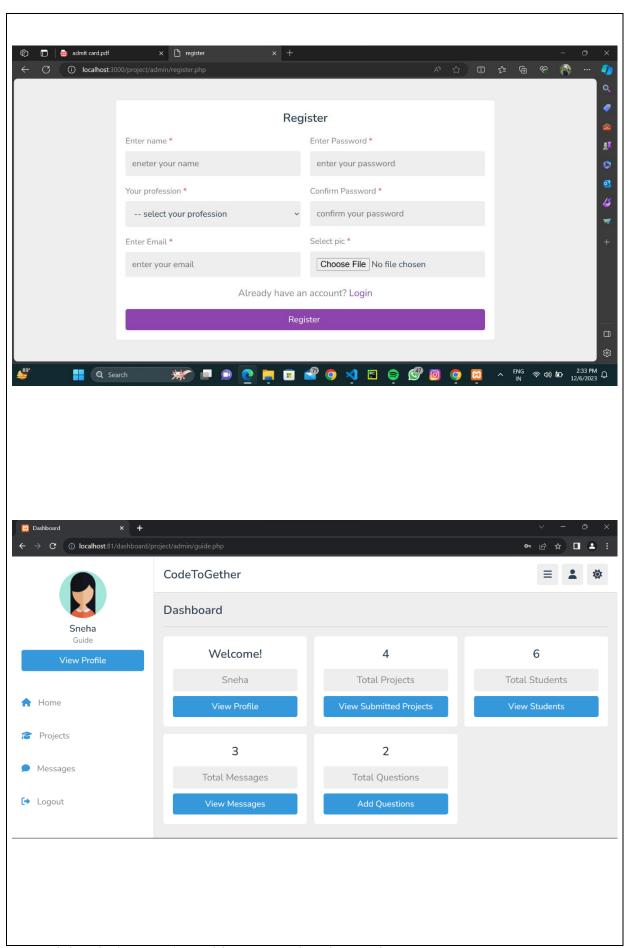
```
</div>
      </div>
     </div>
   </div>
  </div>
 </section>
</main>
<footer id="footer">
 <div class="container">
  <div class="row d-flex align-items-center">
   <div class="col-lg-6 text-lg-left text-center">
    <div class="copyright">
      © Copyright <strong>ProjectToGether</strong>. All Rights Reserved
     </div>
   </div>
<div class="col-lg-6">
    <nav class="footer-links text-lg-right text-center pt-2 pt-lg-0">
```

```
<a href="#intro" class="scrollto">Home</a>
       <a href="#about" class="scrollto">About</a>
       <a href="#">Privacy Policy</a>
       <a href="#">Terms of Use</a>
      </nav>
    </div>
   </div>
  </div>
 </footer>
 <a href="#" class="back-to-top d-flex align-items-center justify-content-center"><i class="bi
bi-arrow-up-short"></i>
 <script src="assets/vendor/purecounter/purecounter vanilla.js"></script>
 <script src="assets/vendor/aos/aos.js"></script>
 <script src="assets/vendor/bootstrap/js/bootstrap.bundle.min.js"></script>
 <script src="assets/vendor/glightbox/js/glightbox.min.js"></script>
<script src="assets/vendor/isotope-layout/isotope.pkgd.min.js"></script>
```

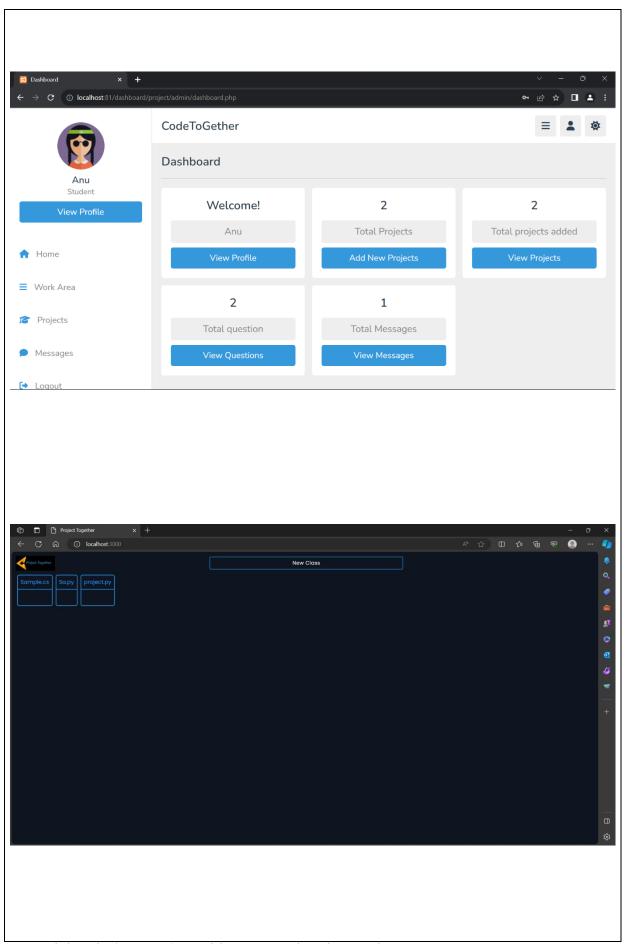
<pre><script src="assets/vendor/swiper/swiper-bundle.min.js"></script></pre>
<pre><script src="assets/vendor/php-email-form/validate.js"></script></pre>
<pre><script src="Vesperr/script.js"></script></pre>
<pre><script src="assets/js/main.js"></script></pre>







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