TRIBHUVAN UNIVERSITY

FACULTY OF HUMANITIES AND SOCIAL SCIENCES

LALITPUR ENGINEERING COLLEGE

CODE CONNECT : CONNECT WITH CREATIVES

BY

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FINAL REPORT

SUBMITTED TO THE DEPARTMENT OF COMPUTER APPLICATION

IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR

THE DEGREE OF BACHELORS IN COMPUTER APPLICATION

DEPARTMENT OF COMPUTER APPLICATION

LALITPUR, NEPAL

OCTOBER, 2023

Tribhuvan University

Faculty of Humanities and Social Sciences

CODE CONNECT : CONNECT WITH CREATIVES

Submitted to

Department of Computer Application

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In partial fulfillment of the requirement for the degree of Bachelors in Computer Application

Submitted by

Sushant Bramhacharya (LEC077BCA08)

Amit Maharjan (LEC077BCA01)

OCTOBER, 2023

Under the Supervision of

Er. Sandesh Sharan Poudel

RECOMMENDATION

The undersigned certify that they have read and recommend to the Department of Computer Application for acceptance, a project work entitled "**Code Connect : Connect with Creatives**", submitted by **Sushant Bramhacharya (LEC077BCA08) and Amit Maharjan (LEC077BCA01)** in partial fulfillment of the requirement for the award of the degree of "**Bachelors in Computer Application**".

Project Supervisor

Er. Sandesh Sharan Poudel

Lecturer

Department of Computer Application , Lalitpur Engineering College

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BCA Program Coordinator

Er. Bibat Thokar

Lecturer

Department of Computer Application , Lalitpur Engineering College

October, 2023

DEPARTMENTAL ACCEPTANCE

The project work entitled "**Code Connect : Connect with Creatives**", submitted by **Sushant Bramhacharya (LEC077BCA08) and Amit Maharjan (LEC077BCA01)**in partial fulfillment of the requirement for the award of the degree of "**Bachelors of Computer Application**" has been accepted as a genuine record of work independently carried out by the student in the department.

Er.Bibat Thokar
BCA Program Coordinator
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Faculty of Humanities and Social Sciences ,
Tribhuvan University, Nepal.

October, 2023

Tribhuvan University

Faculty of Humanities and Social Sciences

Lalitpur Engineering College

LETTER OF APPROVAL

This is to certify that this project prepared by Amit Maharjan and Sushant Bramhacharya entitled "**Code Connect : Connect with Creatives**" in partial fulfillment of the requirements for the degree of Bachelor in Computer Application has been evaluated. In our opinion it is satisfactory in the scope and quality as a project for the required degree.

.....	.....
Er Sandesh Sharan Poudel Project Supervisor Department of Computer Application Lalitpur Engineering College	Er Bibat Thokar BCA Program Coordinator Department of Computer Application Lalitpur Engineering College
.....	.....
Internal Examiner	External Examiner

ACKNOWLEDGMENT

This project work would not have been possible without the guidance and the help of several individuals who in one way or another contributed and extended their valuable assistance in the preparation and completion of this study.

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I am also grateful to my classmates and friends for offering me advice and moral support. To my family, thank you for encouraging me in all of my pursuits and inspiring me to follow my dreams. I am especially grateful to my parents, who supported me emotionally, believed in me and wanted the best for me.

Sushant Bramhacharya (LEC077BCA08)
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ABSTRACT

Code Connect is a revolutionary social media platform made specifically to the needs of creative it professionals and developers. With a focus on collaboration, knowledge sharing, and networking, Code Connect serves as an interactive space where creative IT professionals can connect with like-minded individuals, exchange ideas, and explore new opportunities within the coding community. The platform offers a user-friendly interface and a range of features designed to enhance the programmer's experience. Users can create personalized profiles to showcase their skills, experiences, and projects, attracting potential collaborators or employers. A comprehensive search system allows users to discover discussions. One of Code Connect's unique strengths is Messaging system. Real-time messaging facilitates productive discussions and timely feedback among peers. Furthermore, Code Connect encourages the sharing of code snippets, problems, and open-source projects. Users can publish their code, receive feedback, and collaborate on improvements.Fesibility studies containing Technical,Operational,Economical etc were conducted. Different Software Engineering Diagrams like ER Diagram, DFD, Activity Diagram etc for System Design were created. Latest tools like HTML,CSS,JS and PHP along with modules like AJAX and JQuery which enhances the User Expirence in our applications were userd.Unit testing for our authenication unit was tested.

Keywords: *Code Connect,Collaboration,Messaging system,Social media platform and User-friendly interface*

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LIST OF ABBREVIATIONS

ACID	Atomicity, Consistency, Isolation, Durability
BSD	Berkeley Software Distribution
CMS	Content Management System
CV	Curriculum Vitae
CSS	Cascading Style Sheets
DFD	Data Flow Diagram
DOM	Document Object Model
ER	Entity-Relationship
HTML	Hypertext Markup Language
IT	Information Technology
JS	JavaScript
MySQL	My Structured Query Language
OS	Operating System
PHP	Hypertext Preprocessor
SQL	Structured Query Language
UI	User Interface
UML	Unified Modeling Language
URL	Uniform Resource Locator
UX	User Experience

1 INTRODUCTION

1.1 Introduction

Code Connect serves as a social media hub tailored to the needs of IT enthusiast, aiming to fill the void of specialized functionalities on current social platforms. This unique platform provides a designated arena where IT professionals can unite, cooperate, and gain access to their own soical network.

1.2 Problem Statement

There are many general social media platforms available, but none of them are specifically designed for IT professionals. This means that IT professionals often have to use general platforms, which can be less effective for networking and collaboration. Most general social media platforms do not have dedicated spaces for IT professionals to share their resumes. This can make it difficult for IT professionals to get their resumes seen by potential employers. There are no specific resume management tools available for IT professionals. This means that IT professionals often have to use general resume management tools, which can be less effective for managing IT-related resumes.

There is no specific portfolio management tool available for IT professionals. This means that IT professionals often have to use general portfolio management tools, which can be less effective for managing IT-related portfolios. IT professionals are often underrepresented in other social media platforms. This can make it difficult for IT professionals to reach a wider audience and connect with other IT professionals. The challenges listed above can be even more difficult for new aspiring IT professionals. This is because new IT professionals may not have the same level of experience or connections as more experienced IT professionals.

1.3 Objectives

- To create a social media having normal functionalities and extra specifically for creative it professionals.

1.4 Scope and Limitations

The app should provide a space for IT professionals to network with each other. This could be done through discussions or Messaging. Networking can help IT professionals to discover jobs, learn new skills, and stay up-to-date on the latest trends. The app should make it easy for new comers in field of IT. The app should offer a nice way to showcase their skill and projects. The app should have code snippets sharing and discussion. The app should have connection functions for connecting between peers, friends and seniors.

1.5 Limitation

- Our system doesnt have more interactive message system.
- Videos Cannot be Uploaded.
- Discussion content need to be deleted in order to update it.
- Messages cannot be deleted.
- Our system does not have a robust notification system. Users are only notified when they receive a connection or when someone geeks or comments on their post.

1.6 Potential applications

- **Networking and Collaboration**: IT professionals can connect with peers, mentors, and industry experts, fostering collaborations on projects, sharing insights, and expanding their professional network.
- **Skill Development**: Code Connect can share codes regarding to their problems and projects.
- **Knowledge Sharing**: Members can share code and resources related to programming languages, frameworks, tools, and best practices.
- **Problem Solving**: People can comment on problems stating solutions.

- **Messaging**: They can use code connect messenger to have private conversations.

1.7 Originality of Project

- **Specialized Platform**: Code Connect stands out by being a social media platform specifically designed for IT professionals, acknowledging their distinct requirements and expertise.
- **Unique Needs**: The project pioneers by recognizing and addressing the unique challenges and aspirations that IT professionals encounter in their career paths, setting it apart from more generalized social networks.
- **Career Enhancement**: Code Connect provides tools like specialized resume and portfolio management, facilitating the effective representation of IT professionals' skills and experiences to potential employers and collaborators.
- **Empowerment and Growth**: Through Code Connect, IT professionals are empowered to connect, learn, collaborate, and grow within a digital sphere that aligns with their expertise, fostering a sense of belonging and advancement.

1.8 Report Organisation

The material in this project report is organised into Six chapters. After this introductory chapter introduces the problem topic this project tries to address, chapter 2 contains the literature review of vital and relevant publications, pointing toward a notable project related infromations. Chapter 3 describes the Designs and Analysis of the System for the implementation of this project and models and methods. Chapter 4 provides an overview of Implementation tools, modules used and testing performed in certain unit. Chapter 5 contains the work done till mid term. Chapter 6 contains Discussion and Analysis. Chapter 7 contains the works remaining to be implemented. After Main Report contains have Appendix A that contains Gantt Chart, Setup, Implementation Guide and Supervisor Consultation form. Last one contains Referneces.

2 BACKGROUND AND LITERATURE REVIEW

2.1 Background Study

Our designs makes system visually appealing and at the same time have better performance. As this system is mainly for creatives who can share their journey, A profile system that shows off their portfolio and resume need to be implemented. Showcasing their skills should be easy so this system mainly focuses on functionalities implementations. Different tools and techniques for achieving those goals are important. Studying papers, articles, and related books for our project were reserched. Implementation of Messaging System is being studied. The proposed project is to create an app for creative IT professionals where they can share their discussions, projects, skills, and perform messaging functions. To develop this app, it is important to understand code collaboration, tools for code sharing, and messaging functions.

Here, User Profiles act as digital info of individuals, showcasing their skills, experiences, and interests, while the dynamic Feed delivers a steady stream programming-related discussions to users' homepages. Posts are user-generated content primarily comprising programming code snippets and text-based discourse, fostering a community centered on knowledge exchange. 'Geek' stands as a form of user endorsement for content, similar to 'liking'. Comments in discussions around posts, empowering interaction. The platform enables private Messaging for real-time one-on-one conversations. Authentication ensures secure access by validating user identities through credentials. The Front-End uses user interface and design elements, while the Back-End constructs data management and application behavior. Responsive Design optimizes cross-device usability, while AJAX facilitates server communication without page reloads. jQuery simplifies DOM manipulation and interactions.

2.2 Literature Review

2.2.1 Existing System

Social networks are like groups of people who know each other and interact with each other. The technology helps us study how people are connected to each other

and how they talk to each other online. It also helps us understand the things they say and the information they share [1].

Social Networking

In today's landscape of electronic media, the concept of social networking has evolved to signify the utilization of the Internet and various Web applications, enabling individuals to communicate in ways that were previously unimaginable. This transformation has been driven by a paradigm shift that extends across our culture, altering how perceiveed and harnessed the potential of the Internet. The current iteration of the Web is markedly distinct from its incarnation a mere decade ago, emphasizing interactivity, user engagement, and real-time connectivity. This evolution has paved the way for the proliferation of social networking and collaborative platforms, capitalizing on this dynamic environment to facilitate connections and interactions among people, regardless of their physical location. In a more abstract sense, the essence of social networking transcends individuality, striving to encompass a diverse array of individuals. The widespread adoption of social networking websites signifies a pivotal progression in human social dynamics, indicating a departure from conventional face-to-face interactions and embracing digitally mediated connections as an integral facet of contemporary societal interactions. This culmination of electronic media's impact and the resultant transformation in the nature of the Internet underscores a fundamental shift in human social interaction, redefining the boundaries of communication, collaboration, and community-building on an unprecedented scale [2].

LinkedIn

In today's competitive job market, organizations strive to identify and attract top talent, and this research investigates the influence of social media on the recruitment process. With the rapid growth of social media usage, it is crucial for organizations to understand effective strategies for attracting the best candidates. The study involved 12 recruiters from various industries, and the findings reveal heavy reliance on platforms like LinkedIn for recruitment purposes. However, the use of Twitter and Facebook for recruitment is comparatively lower. Recruiters need a focused

approach when utilizing social media to manage the potential overwhelming volume of work [3].

Stack Overflow

In Stack Overflow, A complete profile includes details such as a website URL, location, about me section, profile image, and age. Our analysis revealed that most users do not have a complete profile. However, users with complete profiles tend to have higher reputation scores and provide better quality question and answer posts compared to users with incomplete profiles. This suggests that having a complete profile is beneficial for contributing effectively to the network. Among the profile elements they examined, location and about me have a stronger relationship with user activity and contribution. This research helps us understand which profile elements are important in a Q and A social network and which ones should be prioritized for users to fill out regularly [4].

AJAX

The term ”Ajax” stands for Asynchronous JavaScript and XML, presenting a powerful model that empowers to initiate server requests seamlessly from the client-side code (JavaScript). By adopting this approach, server interactions without obstructing the user's interaction with the web page can trigger. This translates to the ability to update specific parts of the page without necessitating a complete reload, thereby significantly enhancing both the performance of your website and the overall user experience. Central to this process is the concept of asynchronous communication, which allows for data exchanges between the client and server to transpire independently. This asynchronous behavior eradicates the need for users to endure lengthy page refreshes, thereby contributing to a more fluid and dynamic interface [5].

GitHub

It examine the characteristics of developers involved in Open Source software creation to understand what factors contribute to innovation within the Open Source community. The analysis reveals that having a higher reputation within the community increases the likelihood of attracting collaborators, although developers are also motivated by reciprocity, aligning with the principles of a gift economy. Addition-

ally, it is a significant network effect resulting from standardization, indicating that developers who use popular programming languages in their projects are more likely to collaborate with others. Furthermore, providing additional information, such as a valid URL to the developer's homepage, increases the chances of finding coworkers. These findings can be applied to the broader population of experienced users on platforms like GitHub [6].

GitHub Discussions

GitHub has recently introduced a new feature called Discussions, which serves as a platform for developers to ask questions and engage in broader discussions that go beyond specific Issues. Before its widespread availability in December 2020, Discussions underwent testing on selected open source software projects. In order to gain insights into developers' utilization of this innovative feature, their perceptions of it, and its impact on the software development process, they conducted a comprehensive mixed-methods study involving early adopters of GitHub discussions between January and July 2020.Developers perceive GitHub Discussions as a valuable tool; however, they encounter challenges related to topic duplication between Discussions and Issues. This issue poses a concern, as it leads to confusion and redundancy in communication [7].

3 SYSTEM ANALYSIS AND DESIGN

3.1 System Analysis

As our project code-connect has to be developed in an incremental fashion or it needs to develop step by step with testing the application too. An incremental approach, also known as an iterative or step-by-step approach, is a development or problem-solving method that breaks down a larger task or project into smaller, manageable increments or steps. Rather than attempting to tackle the entire task at once, an incremental approach focuses on making incremental progress by completing and delivering smaller portions of work in a series of iterations.

Here Below are the process that needs to followed

- Initial Planning and Requirements Gathering
- Increment Planning and Design
- Development and Implementation
- Testing and Quality Assurance
- Evaluation and Feedback
- Iterative Development and Refinement
- Deployment and Release
- Repeat the Process for Subsequent Increments

3.2 Requirement Analysis

3.2.1 Functional Requirements

The functional Requirements of our project code connect is mentioned below:

- **User Registration/Login**: Users will have the option to create an account or log in using their email addresses. This streamlined process ensures that IT professionals can easily access the platform and connect with their peers.

- **User Dashboard/Profile Management**: Within the profile management section, users will have the ability to showcase their expertise. Project management enables users to upload and highlight their project details hosted on platforms like GitHub, giving others insight into their skills and contributions. Additionally, Other features allows users to present their skills, experience, and certification in a structured manner. Users can also upload their CV for presentation in their profile.

- **Connection Management**: The platform fosters networking by allowing users to send and receive connection requests. This feature encourages the growth of professional relationships and collaboration within the IT community.

- **Discussion/Posts**: The discussion and news feed serve as a dynamic space for users to share knowledge, insights, and code snippets. Users can post discussions and engage with others by Geeking on posts, as well as commenting to facilitate meaningful conversations.

- **Messaging (Code Connect Messenger)**: The private messaging functionality, known as "Code Connect Messenger," enriches communication. Users can exchange private messages, fostering collaboration, mentorship, and confidential discussions within a secure environment.

- **Notifications**: The notifications feature keeps users engaged and informed about interactions on the platform. Users will receive notifications for activities such as receiving 'Geeks' on their posts, receiving comments, and receiving connection requests. This ensures that users stay updated on relevant interactions and stay engaged with the platform's activities.

- **Save/Un-save**: This feature allows users to bookmark or save posts or content they find interesting so that they can easily access them later for viewing or reference.

- **Geek/Un-geek**: The "Geek/Un-geek" feature, which is similar to the "Like" feature on Facebook, allows users to express appreciation or approval for posts.

- **Comment/Delete Comment**: This feature allows users to add comments to posts and delete their own comments if needed. This will help the users to freely express their point of view on any posts/discussions.

- **Search Users/Posts**: This feature allows users to search other users by their user name and also helps them to find the posts that catches their intrests. This will ensure that the users can easily find other users or posts.

3.2.2 Nonfunctional Requirements

The non functional Requirements of our project code connect is mentioned below:

- **Performance Enhancement**: Our focus on performance involves minimizing reliance on external frameworks and modules. By reducing the use of these components, the aim to streamline the software's execution, resulting in better overall performance and responsiveness.

- **Authentication Security**: Security is a paramount concern. To enhance the platform's security,advanced authentication algorithms, particularly focusing on hashing techniques within the PHP programming environment has been implemented. This ensures that user authentication data is stored and managed in a highly secure manner.

- **Better UX Design**: User experience is central to our project's success. Our emphasis on better UX design means that every aspect of the platform's interface, from navigation to interaction, will be meticulously crafted to ensure a seamless and intuitive experience. This design approach caters not only to experienced users but also to newcomers, ensuring that all users can effortlessly navigate and engage with the platform.

- **Responsive Site**: Recognizing the diverse range of devices and browsers that users utilize, Creation of responsive site is important for this project. This means that the platform's design and functionality will adapt flawlessly to various screen sizes, ensuring that users can access and interact with the platform

effectively, whether they are using a desktop computer, tablet, or smartphone. This responsiveness guarantees a consistent and satisfying experience across different devices and platforms, promoting accessibility and usability.

3.3 Feasibility Analysis

A feasibility study is a systematic and structured analysis conducted to determine the viability and practicality of a proposed project plan. It serves as an evaluation tool to assess whether the project can be successfully implemented and if it aligns with the project's goals and objectives. It involves gathering and analyzing relevant information to determine if the project is technically feasible, operationally feasible, economically feasible, and scheduling feasible.

3.3.1 Economical Feasibility

Since the system is a web application, There will be in use of free and open-source software development tools such as HTML,CSS,JS, PHP, MySQL, VS Code and Figma.

3.3.2 Operational Feasibility

Operational feasibility for the proposed system focuses ease of use. As the system is designed to be interactive, users do not require in-depth knowledge of the web app to navigate and utilize its features. The user interface (UI) is specifically designed to be user-friendly, ensuring a smooth and intuitive experience. This approach minimizes the need for extensive training and reduces potential resistance from users. Even new commers cna use it without any problem or difficulties.

3.3.3 Technical Feasibility

There are several development technologies available. For frontend development, HTML,CSS,JS is being used. For backend development, PHP along with the MySQL database is being used. In our application.Here, HTML,CSS,JS, for the frontend and PHP with MySQL for the backend. Both HTML,CSS,JS, and PHP are open-source technologies and are supported by large companies with vibrant communities. This ensures that technical support and resources are readily available. Considering the

chosen technologies and their strong community backing, the project is technically feasible.

3.3.4 Data Modelling(ER-Diagram)

An Entity-Relationship (ER) diagram is a visual representation used to model the relationships between various entities in a database. It's a graphical way of showing the structure of a database, focusing on the entities (objects) within the system and how they relate to each other. ER diagrams are widely used in database design and conceptual modeling to help designers and stakeholders understand the data and its relationships.

The figure 3.1 is the ER diagram of our system it shows the entities of our database system with their attributes and relationships.Here, User is the main Entity which is connected with many other entites to work for proper functioning of our system. There are different entities which is being used and will be used in further implementations. Different kinds of attribues has been used. This system have relationships like Has,Connects,Posts etc which are crucial part of the system.

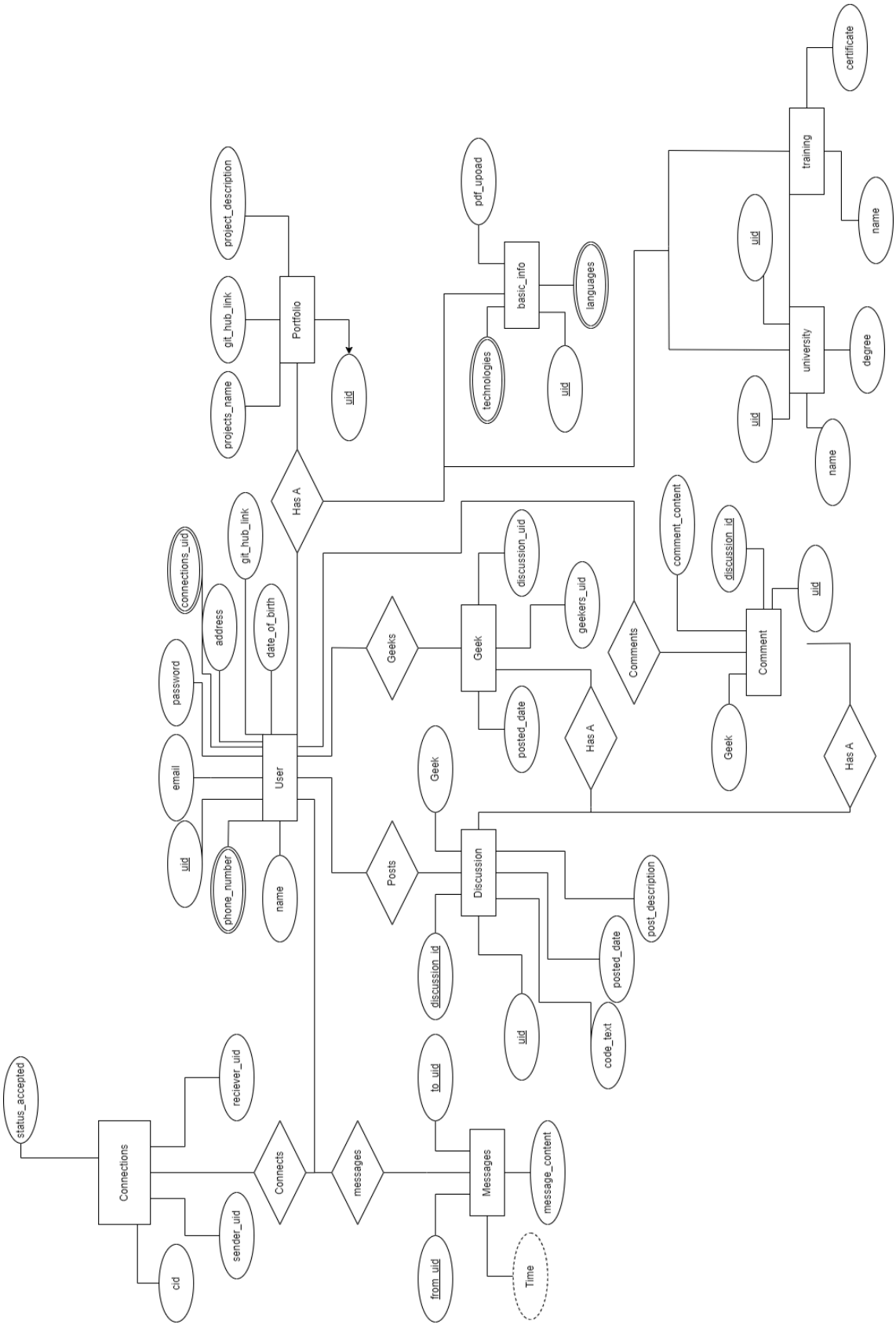


Figure 3.1: ER Diagram of System Data

3.3.5 DFD

DFD or Data Flow Diagram is mainly used to show how data are being flowed in and out of our system. There are 3 levels of DFD i.e Context Level(Level 0),Level 1 and Level 2, Below is the Context level logical DFD which shows how our program flows data between user and code connect process. Data being flowed with the help of the arrows can be seen.

This diagram helps get brief idea of how our system data flow is going to happen between user and our system.

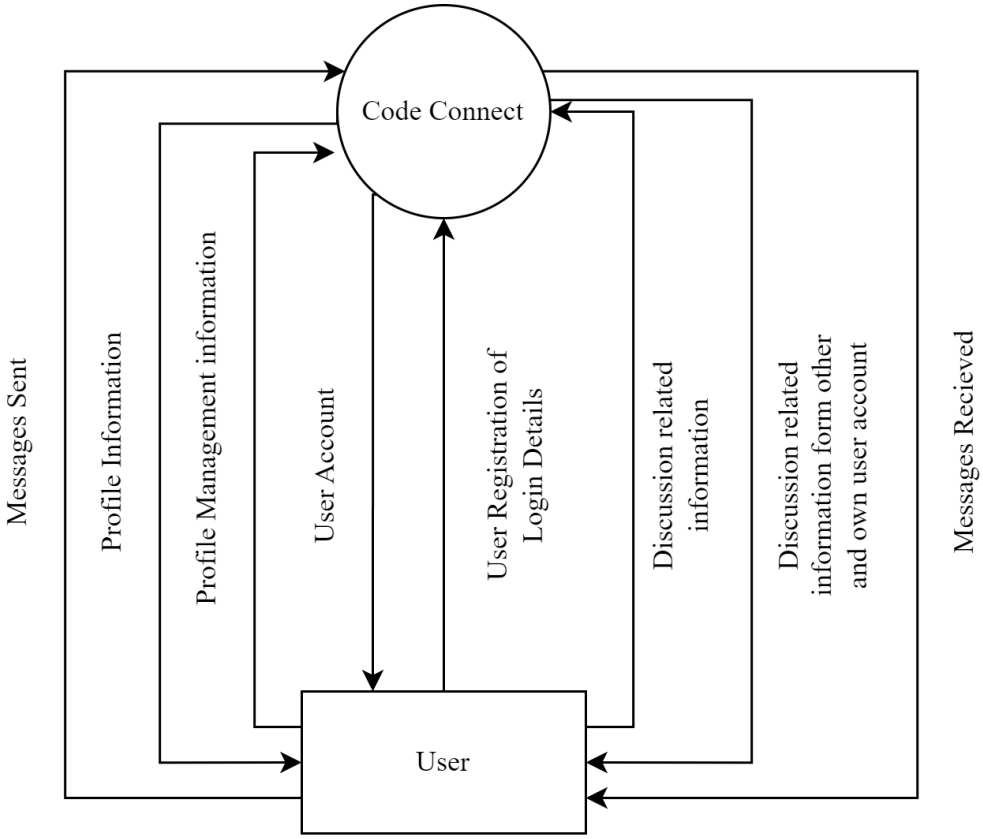


Figure 3.2: Data Flow Diagram (Context Level)

3.4 System Design

3.4.1 Architecture Design

The following diagram shows diagram of our Architecture. Mainly shows what are the functions can be accessed after starting our application.From start users can access different modules to perform their tasks.These are the features and modules that are being worked on to be implemented. Connection Management, Login/Register Users are fully implemented and other manage discussion is more than half implemented in our system and at last Messaging is being implemented. Manage CV and Portfolio is yet to be implemented.

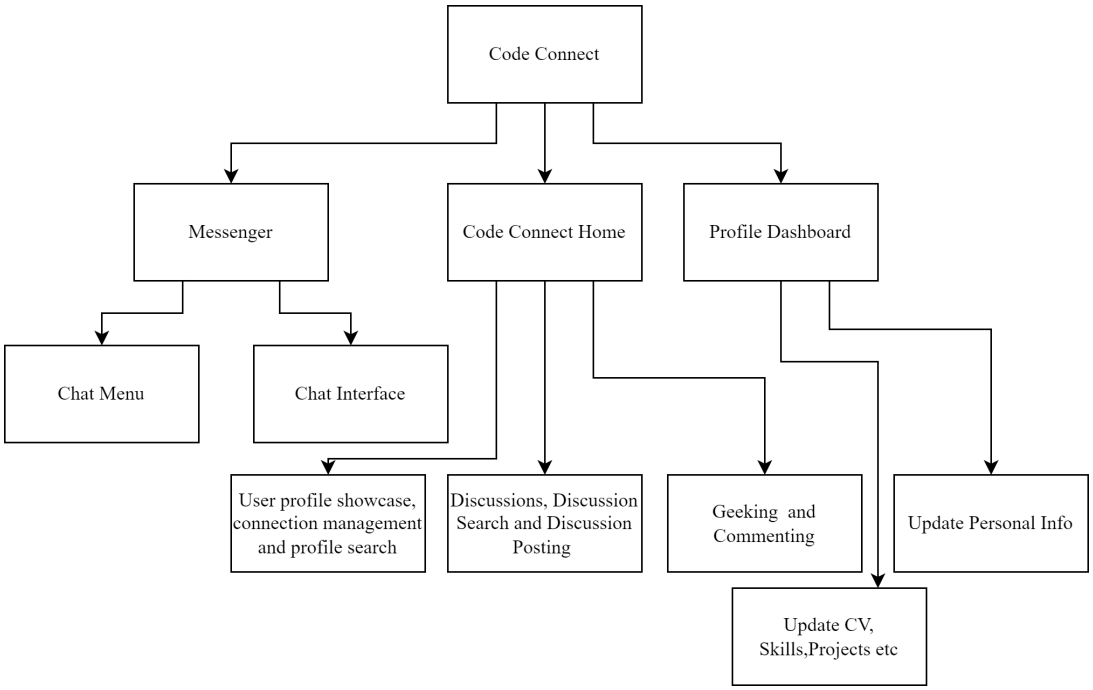


Figure 3.3: Main Architecture of System

3.4.2 Schema Design

Schema design, in the context of software development and database management, refers to the process of creating a structure or blueprint that defines how data will be organized, stored, and related within a database. It involves making decisions about how different types of data will be represented, how they will be interconnected, and how the database will efficiently retrieve and store information.

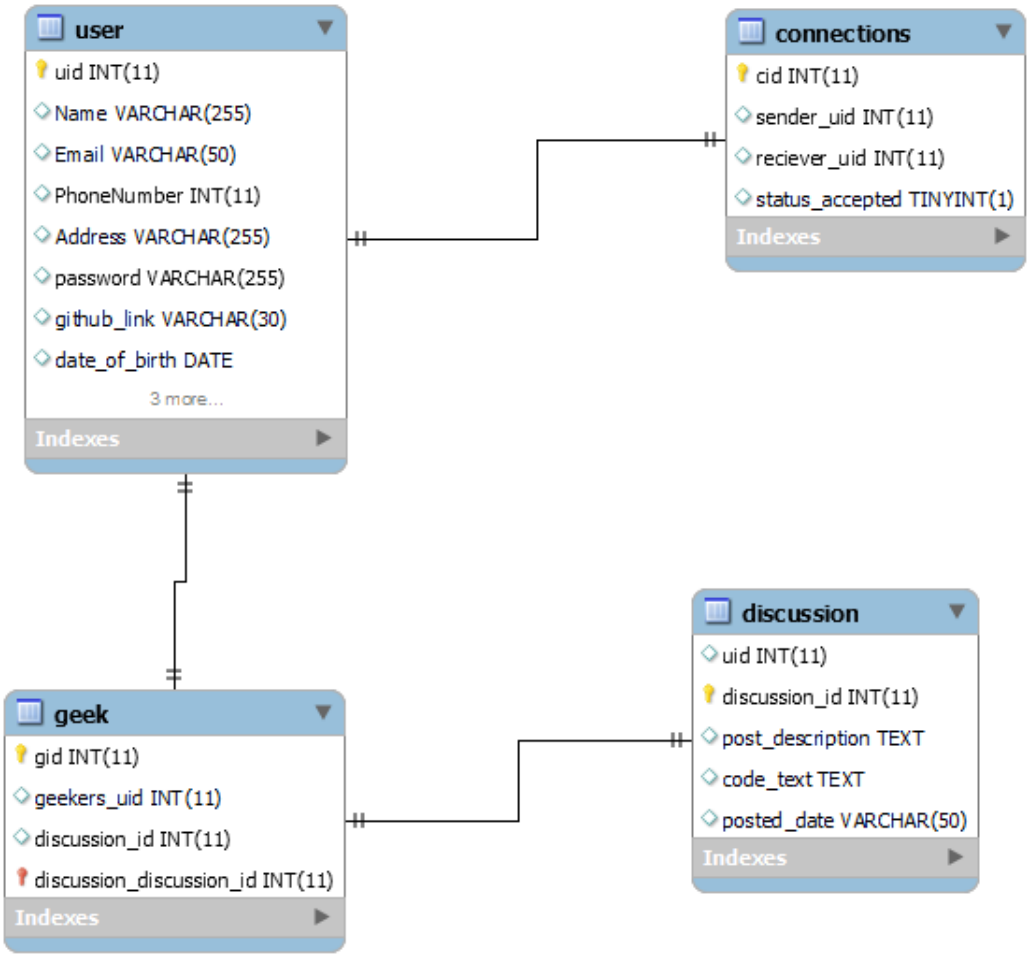


Figure 3.4: Database Schema Design

3.4.3 Interface Design

User Interface Design

User interface (UI) design refers to the process of creating the visual layout and elements that users interact with when using a software application, website, or any digital product. UI design focuses on making the user experience intuitive, visually appealing, and user-friendly.

Below shows the login system UI design which have been implemented in our system.

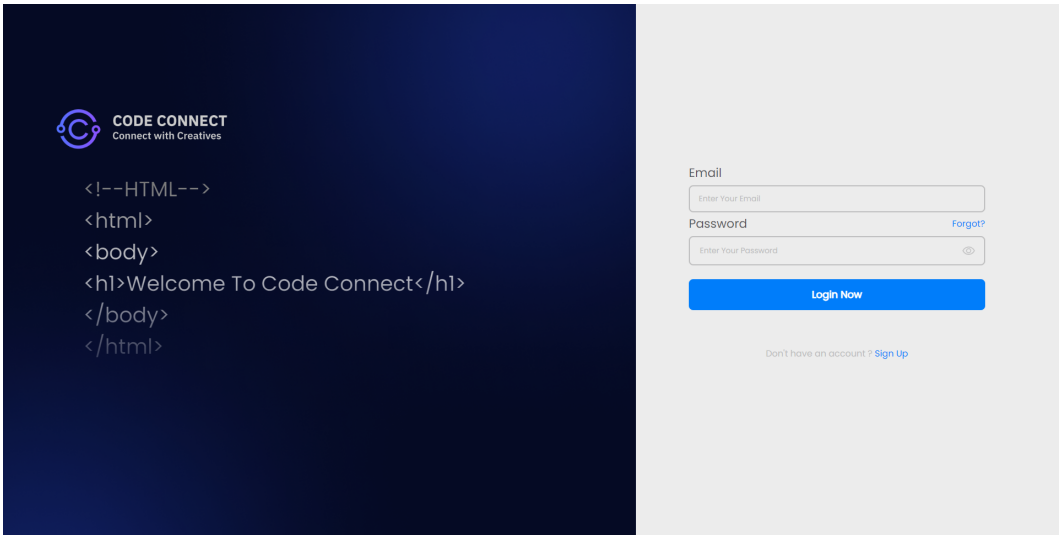


Figure 3.5: Desktop Login UI

Below is the UI design of our homepage which shows most of our functanilty in our web application.

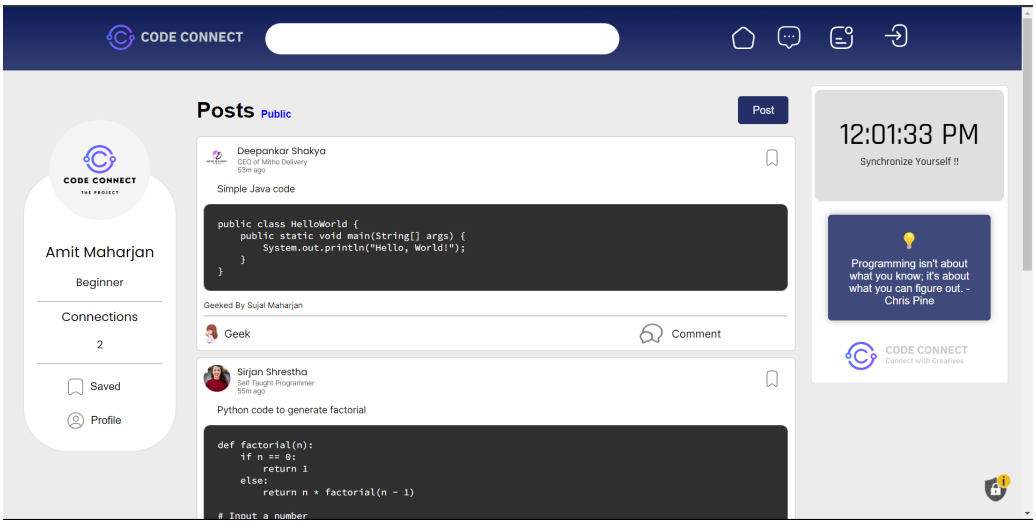


Figure 3.6: Desktop Homepage UI

Below shows the UI Design of our Messenger System which have been implemented in our system.

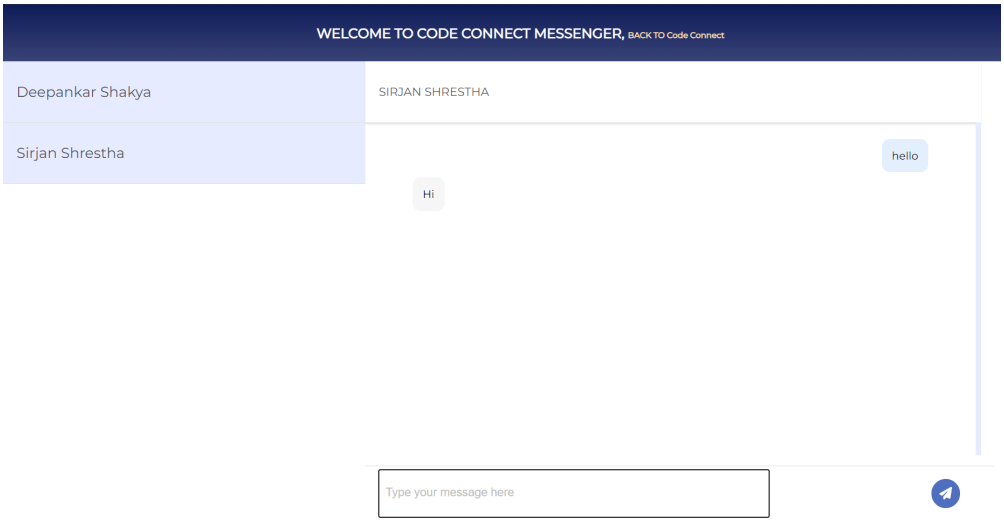


Figure 3.7: Desktop Messages UI

Below shows our Mobile Interface Login UI used in code connect.

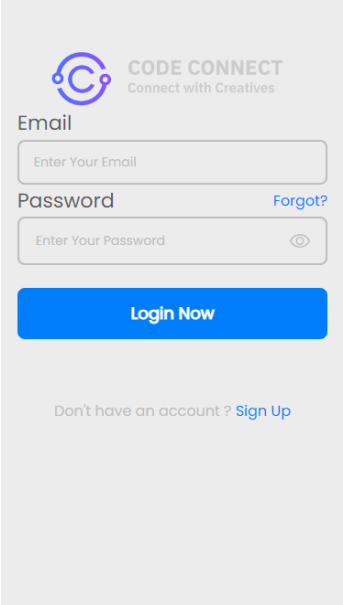


Figure 3.8: Mobile Login UI

Below shows our Mobile Homepage UI used in code connect.

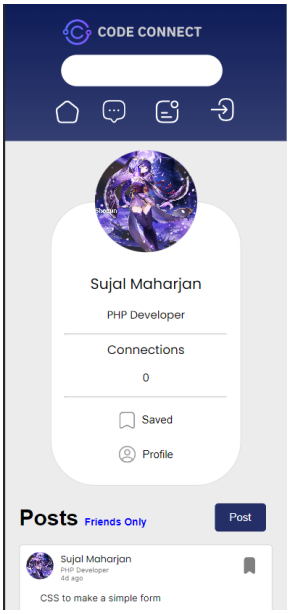


Figure 3.9: Mobile Homepage UI

Below shows our Mobile Chat UI used in code connect.

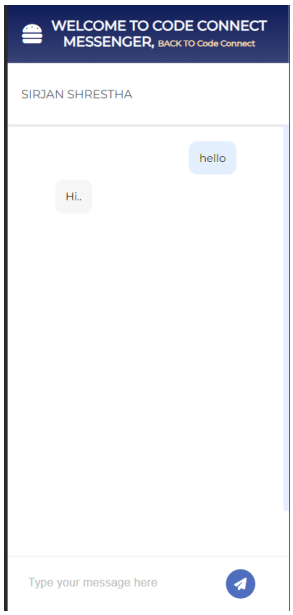


Figure 3.10: Mobile Chat UI

Below shows our Mobile Chat section's friend-list UI used in code connect.

Figure 3.11: Mobile Friend-list of chat UI

3.4.4 Physical DFD

A Physical Data Flow Diagram (DFD) is a graphical representation of how data flows within a system at a more detailed and implementation-oriented level than a logical DFD. While a logical DFD focuses on the system's functional aspects and processes, a physical DFD includes details about how data is processed, where it's stored, and how it's transferred between system components.

Here, main process Code Connect which is connected with other processes and sending and reviving data. There is user entity which initally react with Code Connect process and goes arround alll the processed.There is Data storage where processes store data and retrieve data as per their requirement.

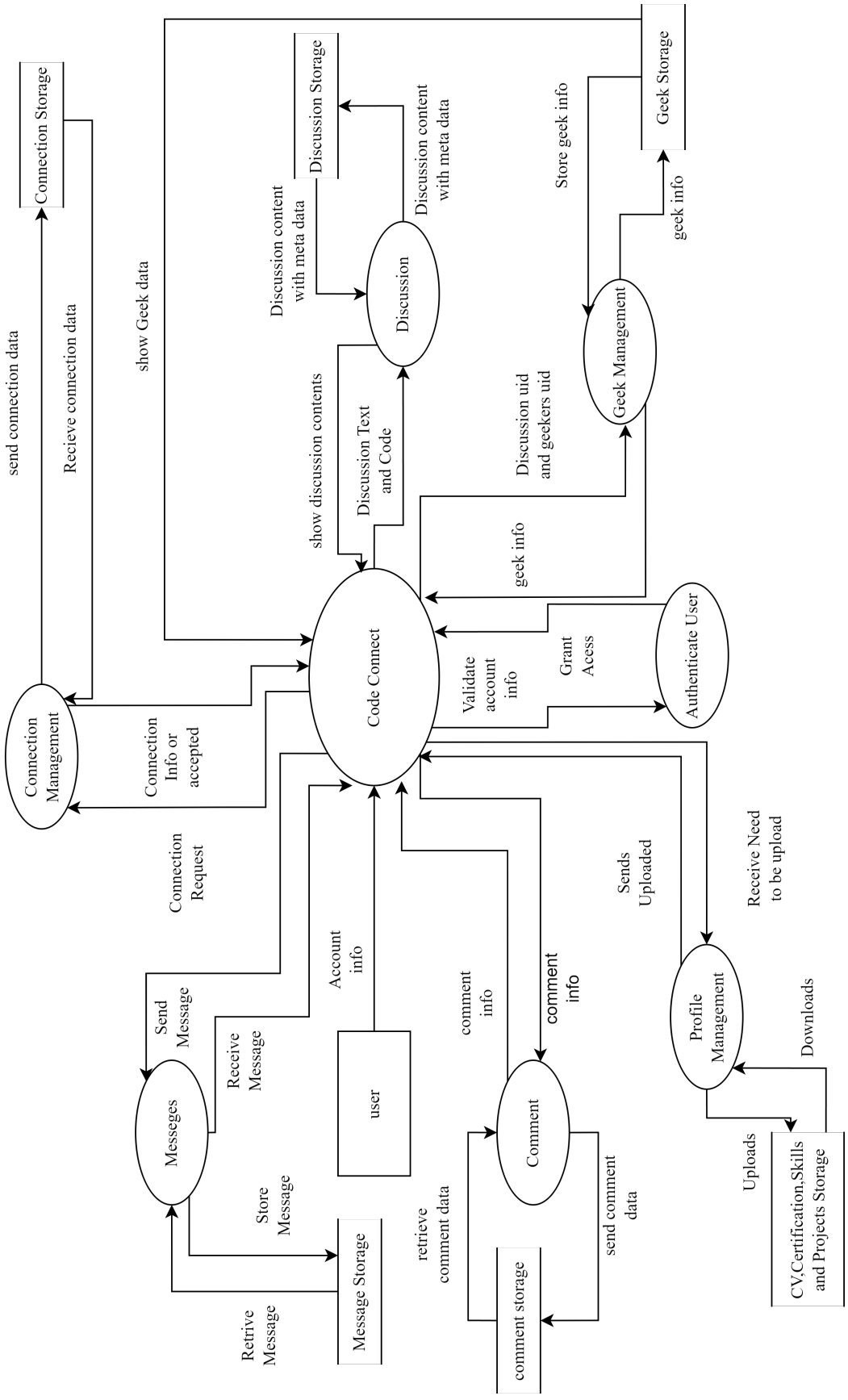


Figure 3.12: Physical DFD of System

4 IMPLEMENTATION AND TESTING

4.1 Implementation

”Code Connect” is a delightful online space where programmers come together to share ideas and experiences. Using tools like HTML, CSS, and JavaScript, we've built a website that's easy to use and fun to explore. Behind the scenes, PHP and MySQL work like magic to handle all the information. With AJAX and JQuery, everything feels smooth and interactive, just like chatting with friends. It's not just about technology – it's about people connecting and learning from each other. Just like baking a tasty treat, we've mixed all these ingredients to create something special that everyone can enjoy.

4.2 Tools Used

4.2.1 Git

Git is a fundamental version control system for software development, efficiently managing changes through commits. It fosters collaboration via branches and seamless merging, acts as a backup mechanism, and encourages code reviews for quality improvement. Git's popularity in open-source projects facilitates global collaboration, and its integration with CI/CD pipelines automates testing and deployment. In essence, Git empowers teams with version control, collaboration capabilities, and streamlined change management, enhancing project development.

4.2.2 Figma

Figma, a cloud-based design and prototyping tool, is renowned for its real-time collaboration, allowing multiple users to work together seamlessly. It offers robust design features like vector editing, typography controls, and color management. Designers can create interactive prototypes with clickable elements and animations, simulating user interactions effectively. Figma promotes design consistency through component libraries and simplifies handoff with easy sharing of specs and assets. It enhances stakeholder engagement, supports user testing, and integrates with various tools, making it a versatile choice for teams focused on delivering compelling digital experiences.

4.2.3 GitHub

GitHub is a pivotal web-based platform for software development, utilizing Git for version control and centralized code hosting. Multiple developers collaborate simultaneously using branches and pull requests for code review. It boasts an integrated issue tracker, wikis, and documentation for enhanced accessibility. GitHub seamlessly integrates with CI/CD tools and fosters open-source community participation. Security measures include vulnerability scanning and permissions management. In summary, GitHub serves as a collaborative hub for version control, code management, issue tracking, and community involvement, enabling efficient software development.

4.2.4 HTML, CSS and JS

- **HTML (Hypertext Markup Language)**: HTML is the foundational language used to create the structure of web content. It uses a system of tags to define elements like headings, paragraphs, links, images, and more. These tags give structure to web pages, organizing content into a meaningful layout. HTML provides the framework for displaying information and forming the basis for user interaction on the web.

- **CSS (Cascading Style Sheets)**: CSS is a styling language that complements HTML by controlling the visual presentation of web content. It allows developers to define colors, fonts, margins, borders, and other design aspects of HTML elements. By separating content from presentation, CSS enables consistent styling across web pages and enhances user experience through improved aesthetics and readability.

- **JavaScript (JS)**: JavaScript is a versatile scripting language used to add interactivity and dynamic behavior to web pages. It enables developers to create responsive features such as form validation, animations, pop-ups, and real-time updates. JS executes directly in the browser, allowing users to interact with web content without requiring page reloads. It's a crucial component for creating engaging and interactive web experiences.

4.2.5 MySQL

MySQL, an open-source relational database management system (RDBMS), excels in organizing structured data for various applications. It's proficient in SQL (Structured Query Language), allowing effortless database creation, data relationships, and advanced queries. MySQL ensures data integrity, speedy retrieval through indexing, and reliable transaction management. It supports collaborative data work with security. Whether for small projects or enterprise endeavors, MySQL's adaptability, strong community, and compatibility make it the go-to choice for data management and robust application development.

4.2.6 PHP

In the realm of web development, PHP stands out as a powerful scripting language, capable of creating dynamic and interactive websites. Integrated seamlessly with HTML, PHP empowers websites to process forms, communicate with databases, and deliver content that adapts to user actions. Its open-source nature fosters a collaborative community of developers. For both beginners and experts, PHP is an invaluable tool, enhancing web projects with its functionality and innovation. It serves as a cornerstone in modern web development, essential for crafting standout websites in the digital landscape.

4.3 Modules Used

4.3.1 AJAX

In the dynamic world of web development, AJAX (Asynchronous JavaScript and XML) stands out as a transformative technique. It combines JavaScript and server communication to enable seamless, asynchronous data exchange. Unlike traditional methods, AJAX allows developers to update specific sections of a web page without full page reloads, enhancing user experience. AJAX's compatibility with data formats like XML and JSON enables efficient data transmission, facilitating real-time updates and interactive web applications. This technique elevates user engagement and pushes modern web development into a new era of possibilities.

4.3.2 JQuery

In the realm of web development, jQuery emerges as a transformative force, simplifying complex tasks and enhancing user interaction. This fast, compact JavaScript library streamlines DOM manipulation, making it effortless to select, modify, and animate HTML elements. jQuery's user-friendly syntax and built-in functions mitigate cross-browser compatibility issues, ensuring seamless development across platforms. Its extensive plugin ecosystem adds pre-built functionalities to projects, abstracting complex JavaScript operations into concise commands for cleaner code and faster development. With capabilities in event handling, animations, and AJAX requests, jQuery accelerates the creation of engaging, feature-rich web applications.

4.3.3 MySqli Connect

In the world of web development and database connectivity, the mysqli_connect function stands as a fundamental tool worth exploring. Within the PHP programming language, it plays a pivotal role in establishing secure links between web applications and MySQL databases. By providing essential parameters like host, username, password, and database name, developers can effortlessly create a communication channel with MySQL servers. This function is crucial for enabling dynamic and interactive web applications, serving as the foundational bridge for data-driven features. mysqli_connect significantly contributes to the efficiency and responsiveness of modern database-driven web development, making it an essential component.

4.3.4 Google Fonts

In the realm of web design and typography, Google Fonts emerges as a transformative tool. Its extensive collection of meticulously curated fonts offers designers an array of creative possibilities. Beyond aesthetics, Google Fonts prioritizes user experience, promoting accessible and visually appealing text choices. The user-friendly interface and seamless integration make font selection and embedding effortless. Furthermore, it optimizes performance, ensuring that design enhancements don't hinder website speed. My exploration of Google Fonts highlights its value in enhancing both the aesthetics and accessibility of web content significantly.

4.3.5 Font Awesome

In the world of web design and user interface enhancement, Font Awesome stands out as a remarkable tool. Its extensive icon library, spanning diverse categories, simplifies icon integration into web projects. Font Awesome not only adds visual appeal but also enhances functionality. Using CSS classes for seamless icon incorporation and customization options for size, color, and style, it empowers designers for creative expression. Its compatibility with various frameworks and platforms makes it versatile for all developers. Font Awesome significantly elevates user experiences by adding depth and meaning to digital interfaces, making it an essential asset in crafting captivating and user-centric web applications.

4.3.6 Bootstrap

We have used small portion of bootstrap for quick development of profile dashboard. Bootstrap is a widely-used front-end framework that simplifies web development by providing a collection of pre-designed HTML, CSS, and JavaScript components. With its responsive design, ready-made elements, and customization options, Bootstrap enables developers to create mobile-friendly and visually appealing websites and web applications with ease.

4.4 Testing

4.4.1 Unit Testing

Unit testing is a software testing technique where individual units or components of a software application are tested in isolation to ensure that they function correctly. These units can be functions, methods, classes, or even small modules. Unit testing aims to verify that each unit performs as expected, providing developers with confidence that their code works as intended and catches bugs early in the development process.

Authenication Unit

Here testing different test cases of authentication system in Code Connect is performed as required:

Table 4.1: Authenication Unit Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Incorrect Password	Email:`test@gmail.com` Password:1234	Incorrect Password	Incorrect Password
2	Incorrect Confirm Password in SignUp	Email:`test@gmail.com` Password:12345679 Password:12345678	Enter Same Password	Enter Same Password
3	Correct Credentials In Login	Email:`test@gmail.com` Password:12345679	Redirects to homepage	Redirects to homepage

Launch Application when user is not logged-in

Table 4.2: Launch Application when user is not logged-in Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Launch application	`http://localhost/codeconnect/login/`	Log-In page	Log-In page

Launch Application when user is already logged-in

Table 4.3: Launch Application when user is already logged-in Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Launch application	`http://localhost/codeconnect/home/`	CodeConnect Home page	CodeConnect Home page

Code Connect Messenger

Table 4.4: Code Connect Messenger Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Code Connect Messenger	`http://localhost/codeconnect/messenger/`	Code Connect Messenger	Code Connect Messenger

Send Message

Table 4.5: Code Connect Send Message to other user Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Send message	click on messenger button and click on other user that is located at the left side to start a conversations	Sends message to that particular user	Sends message to that particular user

Receive Message

Table 4.6: Code Connect Receive Message from other user Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Receive message	click on messenger button and click on other user that is located at the left side to see the conversation	Display the conversation with that particular user	Display the conversation with that particular user

Code Connect Search User

Table 4.7: Code Connect Search User Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Code Connect Search User	Si	Name of user starting from ”Si”	Sirjan Shrestha

Code Connect Search Posts

Table 4.8: Code Connect Search Posts Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Code Connect Search Posts	python	Posts that have content of python	python posts

Show posts of friends only

Table 4.9: Show posts of friends only Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Show posts of friends only	Click on the Friends Only button located at post section	Shows Posts of Friends only	Shows posts of friends only

Show all posts

Table 4.10: Show all posts Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Show all posts	Click on the Public button located at post section	Shows Posts of all users	Shows posts of all users

Make Posts

Table 4.11: Make Posts Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Make posts	Click on post button	Open Post Menu	Opens Posts Menu

Making Post including content on both Post and Coding section

Table 4.12: Making Post including content on both Post and Coding section Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Making Post including content on both Post and Coding section	Post section:coding in C Code section: printf(”Hello World”);	post including both of the section	made post including both of the section

Delete Posts

Table 4.13: Delete Posts Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Delete posts	After visiting self profile, Click on delete post button	Deletion of that particular post	Delets the post

Geeking on post

Table 4.14: Geeking on post Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Geeking on Posts	Press Geek button	count Geek of users on post	counts Geek of users on post

Un-Geeking on post

Table 4.15: Un-Geeking on post Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Un-Geeking on Posts	Press Geek button again	Deletion of geek count of that user	Delets the geek count of that user

Commenting on post

Table 4.16: Commenting on post Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Commenting on post	Press comment button and write comment	comment of users on that particular post	comment of users on that particular post

Deleting Comment on post

Table 4.17: Deleting Comment on post Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Deleting Comment on post	Press delete button	Deletion of comment of that user	Delets the comment of that user

Saving post

Table 4.18: Saving post Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Saving post	Press save button located at right side of post	Save the posts	Saves that post

Un-Saving post

Table 4.19: Un-Saving post Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Un-Saving post	Press save button again that is located at right side of post	Removes the saved post	Removes the saved post

Profile Dashboard

Table 4.20: Profile Dashboard Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Visiting Profile Dashboard	Press on Profile Dashboard button after visiting self-profile	Show the profile Dashboard menu	Opens the profile Dashboard menu

Update Basic Account Details

Table 4.21: Update Basic Account Details Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Update Basic Account Details	Press on Update Basic Account Details button after visiting profile dashboard	Opens the form that helps the user to update their basic informations	Opens the form that helps the user to update their basic informations

Update Projects

Table 4.22: Update Projects Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Update Projects	Press on Update Projects button after visiting profile dashboard	Opens the form that helps the user to update their Projects	Opens the form that helps the user to update their Projects

Update Certification

Table 4.23: Update Certification Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Update Certification	Press on Update Certification button after visiting profile dashboard	Opens the form that helps the user to update their Certifications	Opens the form that helps the user to update their Certifications

Update Skills

Table 4.24: Update Skills Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Update Skills	Press on Update skills button after visiting profile dashboard	Opens the form that helps the user to update their skills	Opens the form that helps the user to update their skills

Update CV

Table 4.25: Update CV Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Update CV	Press on Update CV button after visiting profile dashboard	Opens the form that helps the user to update their CV	Opens the form that helps the user to update their CV

Code Connect Notification

Table 4.26: Code Connect Notification Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Notification	Press on Notifiation button that is located at nav-bar	Open Notification Pannel that shows all the necessary notification	Open Notification Pannel that shows all the necessary notification

Send connection request

Table 4.27: Send connection request Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Send connection request	After visiting other user's profile, Press on connect button that is located at side bard	Send connection request to that particular user	Sends connection request to that particular user and shows connection reuested

Accept connection request

Table 4.28: Accept connection request Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	Accept connection request	Click on Accept Request button	Accept connection request of that particular user	Accept connection request of that particular user and adds that user to the connection list

User Log-Out

Table 4.29: User Log-Out Testing

Tests	Test Cases	Input	Expected Output	Actual Output
1	User Log-Out	Click on Log-Out button that is located at the navbar	Logs the user out of the system	Logs the user out of the system and redirect the user to Log-In page

5 Conclusion and Future Recommendations

5.1 Lesson Learnt / Outcome

5.1.1 Home Page

The Home Page serves as the heart of our platform. It provides users with a friendly and intuitive starting point, presenting essential navigation options, important announcements, and recent activity highlights. With its carefully crafted layout, users can effortlessly explore different sections, ensuring a seamless and engaging experience that keeps them informed and connected to the latest updates and content.

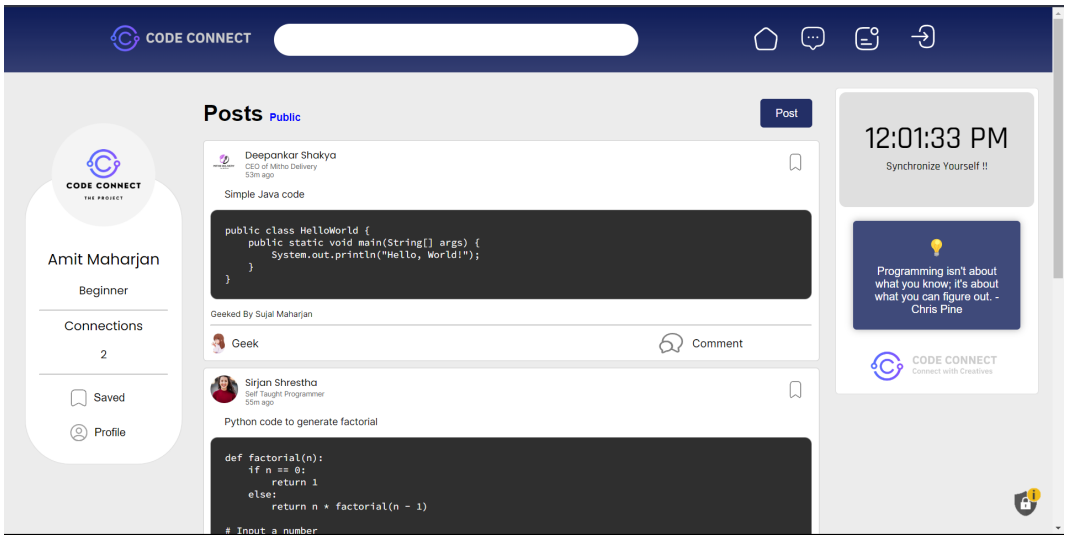


Figure 5.1: Home Page.

5.1.2 Geek

The image illustrates what happens when a user clicks on ”geek.” It’s similar to how ”like” button used to show that user enjoy something. Pressing ”geek” is like giving a thumbs up, showing that the user finds the content interesting or cool, much like using a ”like” button.

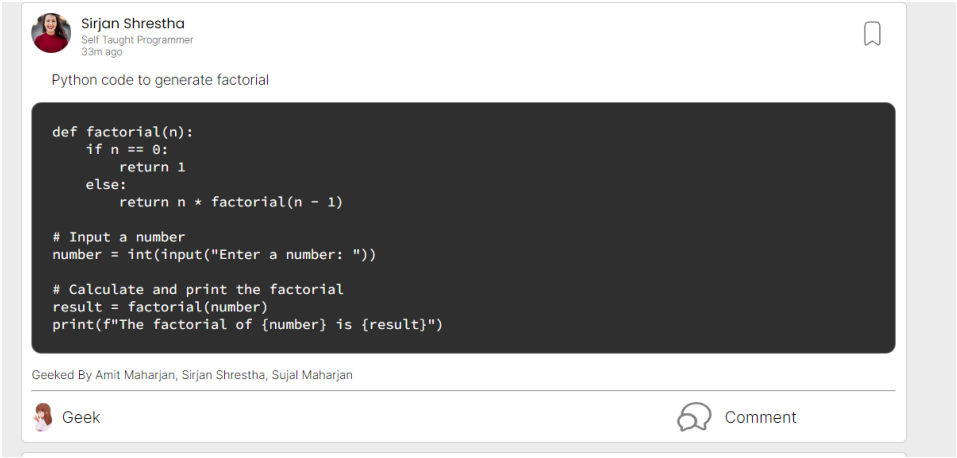


Figure 5.2: Geek.

5.1.3 Un-Geek

In the picture, one can see what happens when a user clicks ”un-geek.” It’s like taking back a previous action, kind of like when someone changes their mind about liking something. Just as one can ”unlike” by using a ”dislike” button, ”un-geek” lets users remove the interest or approval they showed earlier with the ”geek” feature.

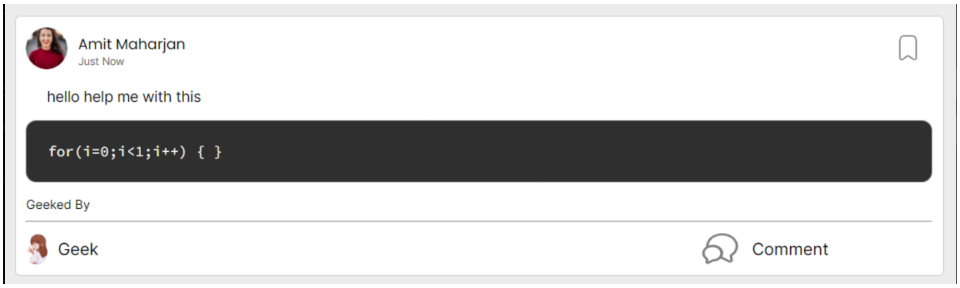


Figure 5.3: Un-Geek.

5.1.4 Profile

The image displayed portrays the user profile within Code Connect. This profile presents a snapshot of the user's presence on the platform, offering insights into their activities, interests, and possibly their expertise. By showcasing key information, the profile facilitates connections and understanding among users, fostering a sense of community and collaboration within the Code Connect ecosystem.

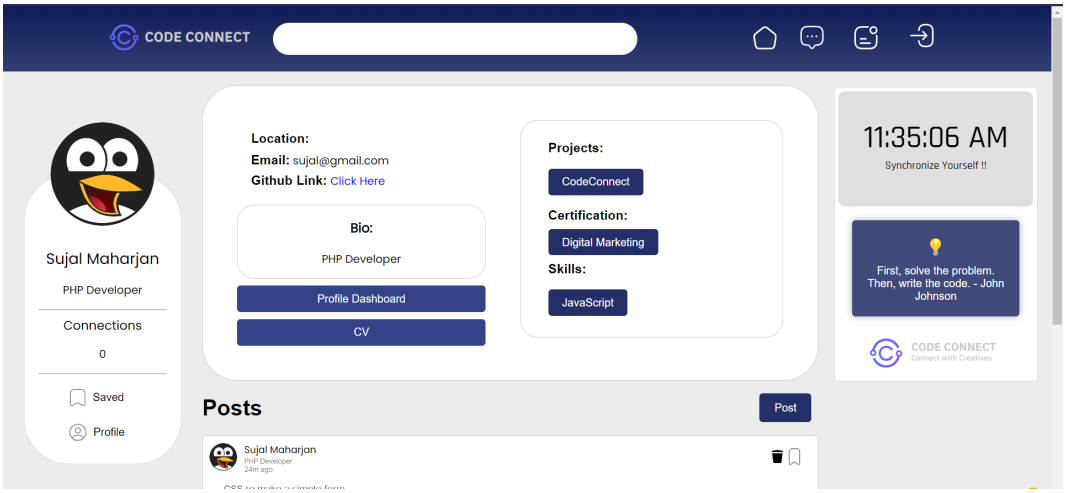


Figure 5.4: Profile.

5.1.5 Profile Dashboard

The image displayed portrays the Profile dashboard of the user's profile. Through the help of this profile dashboard user can update their general-informations, projects status, certifications, skills and CV.

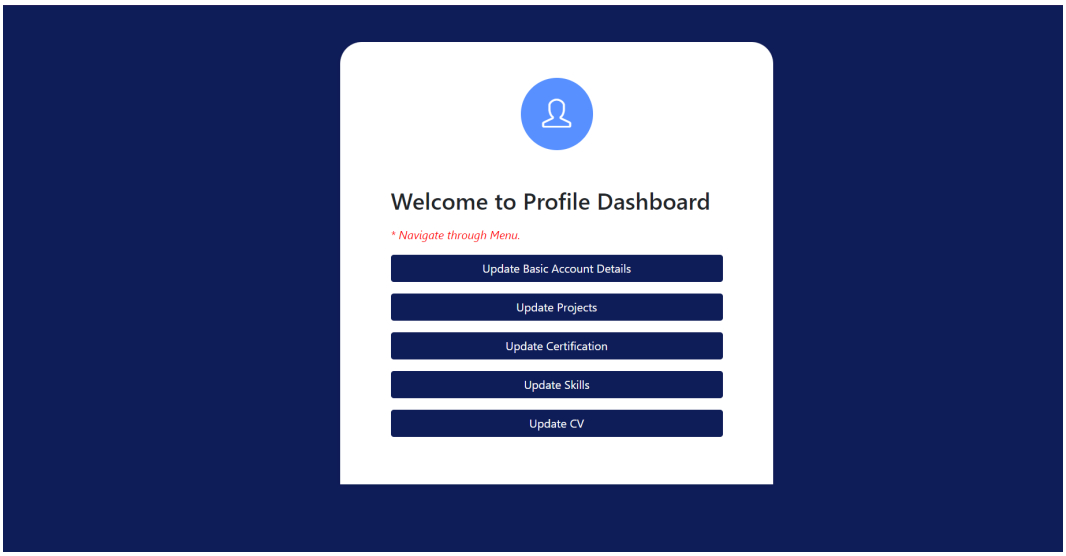


Figure 5.5: Profile Dashboard

5.1.6 Project Showcase

The image displayed portrays the user profile in which it displays the Project section of the profile. This Project showcase presents a snapshot of the user's Projects which gives a breif explanation on their project title.

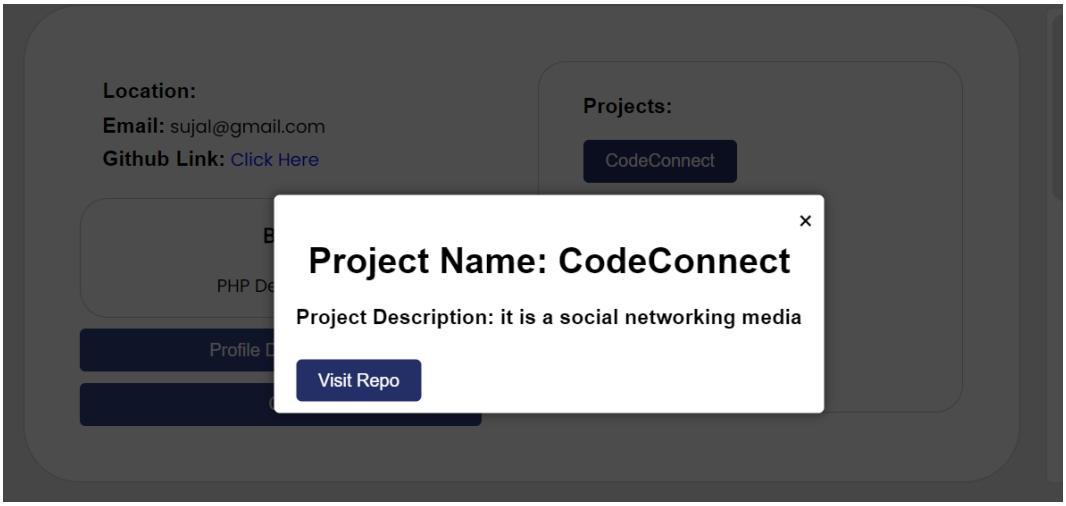


Figure 5.6: Project Showcase

5.1.7 Skills Showcase

The image below showcases the skill section of the user profile, allowing users to highlight their expertise in specific fields or areas of specialization.

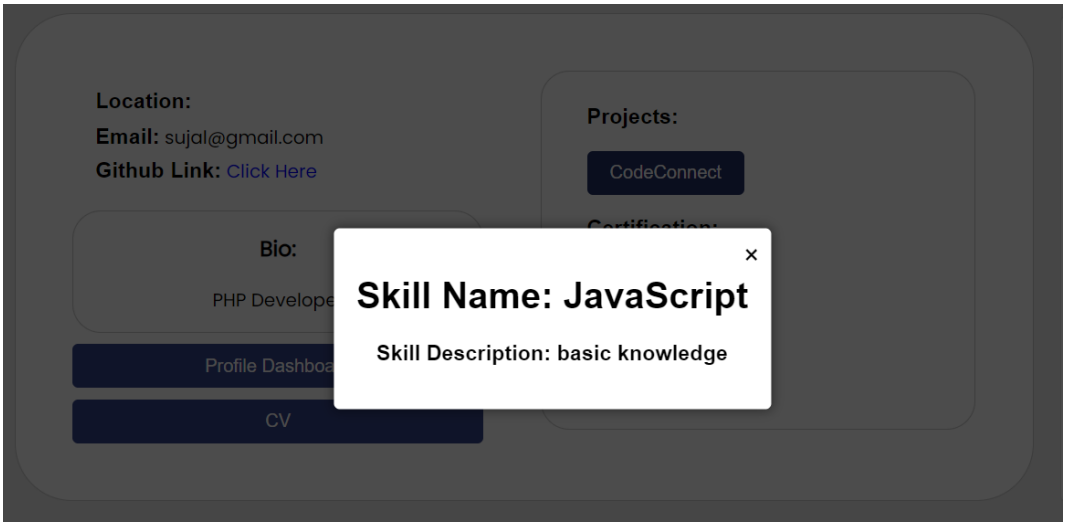


Figure 5.7: Skills Showcase

5.1.8 Messenger

In the picture, one can see the messaging part of Code Connect. It resembles a chat where users can communicate in real-time. This assists users in effortlessly sharing information, discussing projects, and seeking assistance within the Code Connect community. The messaging feature simplifies the process of connecting, sharing ideas, and collaborating on coding tasks.

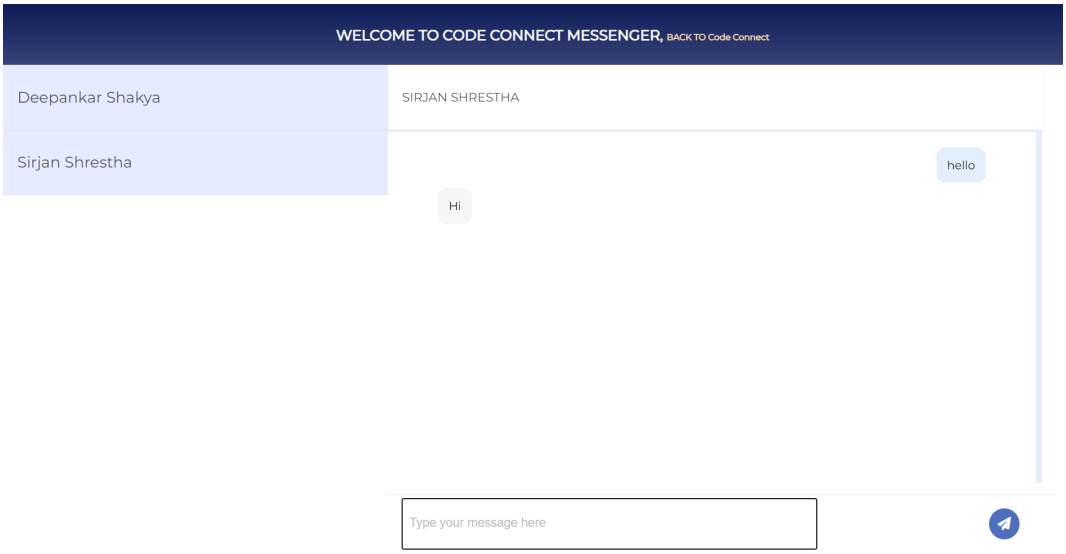


Figure 5.8: Messenger.

5.1.9 Search

”Code Connect” features an efficient search function where users can enter partial user names. As they type, the system dynamically suggests relevant user names that start with the typed letters. These suggestions appear in real-time below the search bar, aiding users in quickly finding and connecting with others. The process enhances user experience by providing instant, tailored recommendations based on the input, streamlining the connection process within the application.

Figure 5.9: Search.

5.1.10 Notification

The image displayed below showcases the notification feature of Code Connect. This tool is designed to keep users informed about important updates and activities. Notifications ensure that users stay in the loop about significant interactions or changes within the platform. By providing these alerts, the notification system enhances user engagement and helps users effectively stay connected and engaged within the Code Connect community.

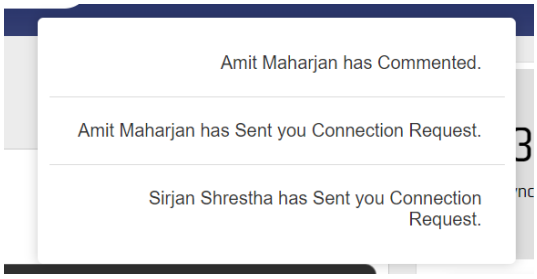


Figure 5.10: Notification.

5.1.11 Post

In the picture, one can see how posts can be created in Code Connect. It resembles writing a message where users can share text and pieces of code. This assists individuals in initiating conversations, showcasing their coding work, and seeking advice from other users. It serves as a means to collaborate and facilitate mutual learning within the Code Connect platform.

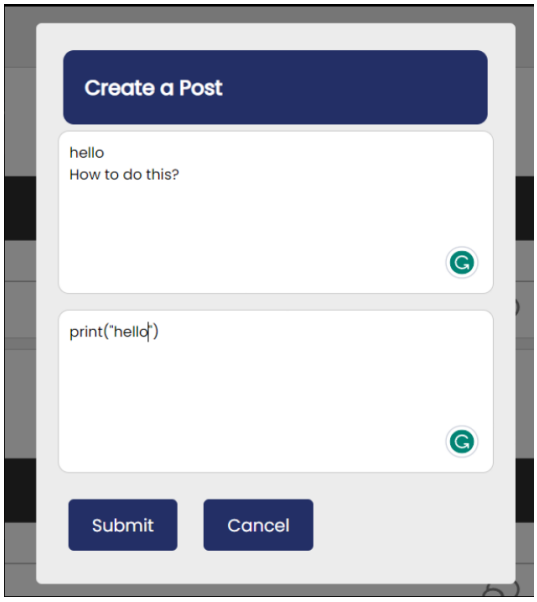


Figure 5.11: Post.

5.1.12 Save Post

The picture below shows how the user can re-visit the posts that is already saved.

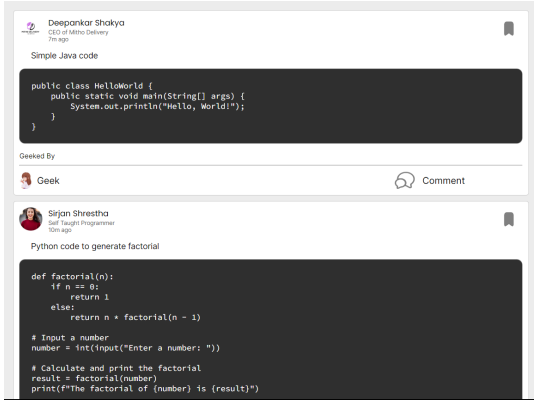


Figure 5.12: Save post

5.1.13 Friends Posts

This picture demonstrate how the user can manage posts so that it only shows the posts from the user's friend.

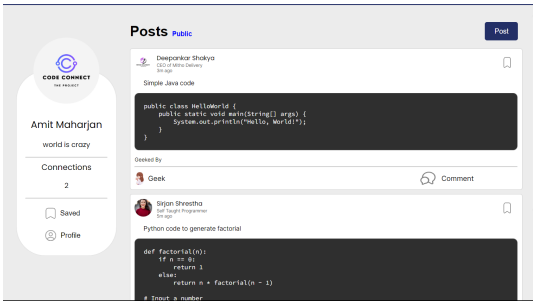


Figure 5.13: Friends posts

5.1.14 Public Posts

This picture demonstrate how the user can manage posts so that it shows the posts of all the users (i.e Public).

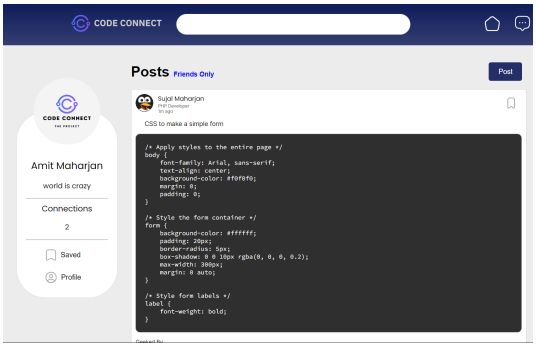


Figure 5.14: Public posts

5.1.15 Profile of other Users

In the image below, one can observe the profile section of other users. This section offers insights into their details, interests, and activities within the platform. By exploring these profiles, individuals can gain a better understanding of each other, their skills, and their contributions, thereby fostering connections and collaboration within the community.

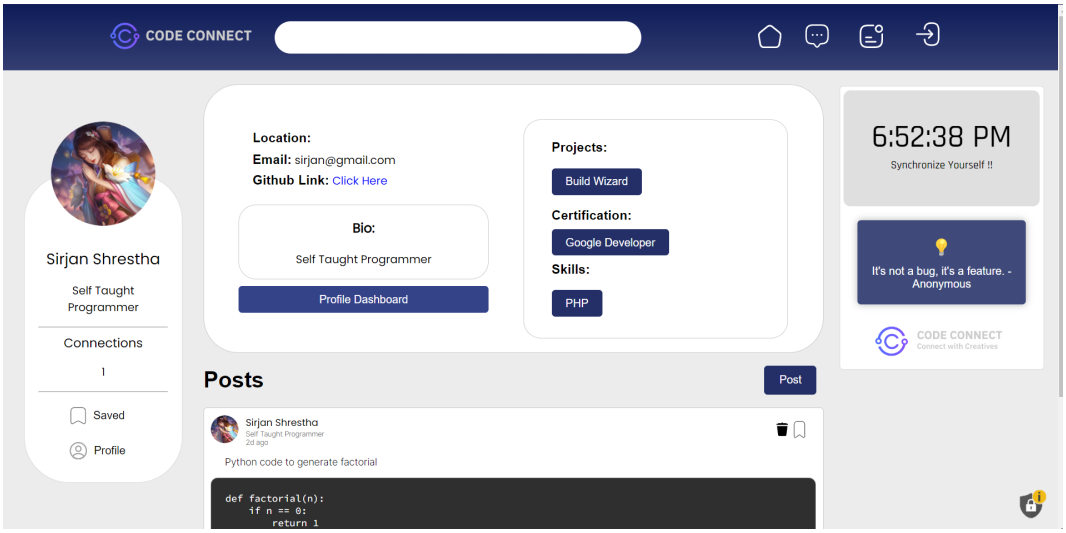


Figure 5.15: Profile of other Users.

5.1.16 Send Connection Request

Sending a connection request is similar to asking another user if they want to connect with them on the platform. It's a way to show that the user is interested in being connected and sharing things with them. If the other user accepts, they can interact more and collaborate within the platform.

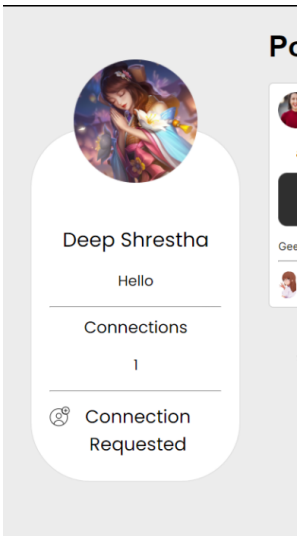


Figure 5.16: Send Connection Request.

5.1.17 Result after connection request is sent

The image below provides an insight into what it's like for another user when they receive a connection request. They'll see a notification indicating that someone wants to connect with them. They can choose to accept the request and commence connecting with the person who sent it.

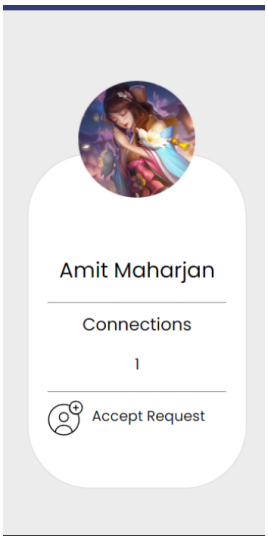


Figure 5.17: Result after connection request is sent.

5.1.18 Connection Request Accepted

If the request is accepted, the user will see a ”connected” sign, indicating that they are now friends. The person who sent the request will be added to their list of friends. This simplifies the process of finding and communicating with each other, facilitating collaboration and content sharing within the platform.

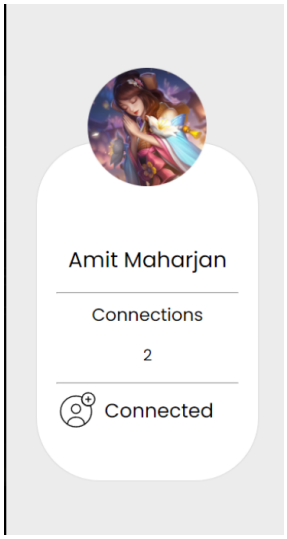


Figure 5.18: Connection Request Accepted.

5.2 Conclusion

In summary, ”Code Connect” is a big step forward in creating a user-friendly social networking platform designed for IT professionals and developers. This report has explained the main features of the app, like posting discussions, Geeking, commenting, saving posts, managing profiles, and connecting with others. ”Code Connect” is a helpful place where we can share knowledge, work together, and make new connections in the coding world. As we move ahead, how much we use it and enjoy it will show how successful it becomes in helping us learn, connect, and innovate in the tech field.

5.3 Future Recommendations

- **Implement an Interactive Message System:** Enhance user engagement by developing a more interactive messaging system that supports real-time communication and multimedia sharing.

- **Enable Video Upload:** Provide users with the capability to upload and share videos, enriching the content-sharing experience and expanding multimedia options.

- **Facilitate Content Updates:** Streamline content management by allowing users to update discussions without the need for deletion, promoting dynamic and evolving discussions.

- **Introduce Message Deletion:** Enhance user control and privacy by implementing a feature that allows users to delete messages as needed.

- **Strengthen Notification System:** Develop a robust notification system that goes beyond connection requests and post interactions, ensuring users are promptly informed about relevant activities, updates, and events within the platform.

6 DISCUSSION AND ANALYSIS

Here,The platform offers a range of interactive features that promote collaboration, knowledge sharing, and connections among users. The home page serves as a user-friendly starting point, providing navigation options, announcements, and activity highlights. Users can express interest in content through the ”Geek” feature and retract it using ”Un-Geek.” User profiles showcase activities and expertise, encouraging community building. The real-time messaging system facilitates instant communication and project discussions. A powerful search function suggests relevant user names for quick connections. Notifications keep users informed about updates, enhancing engagement. The ”Post” feature allows content creation, sparking conversations and advice-sharing. Viewing profiles of other users fosters connections, and connection requests initiate networking. The platform's design promotes seamless interaction and meaningful engagement within the tech ecosystem, transforming ”Code Connect” into a vibrant hub for industry professionals.

The analysis of the ”Code Connect” web application reveals a well-thought-out platform designed to cater to the specific needs of the tech community. The home page's user-centric layout is commendable, ensuring that users can seamlessly navigate and stay informed about recent activities. The incorporation of features like ”Geek” and ”Un-Geek” adds an element of user engagement and interactivity, akin to the familiar ”like” and ”dislike” mechanisms. User profiles offer a snapshot of individual presence, encouraging networking and collaboration by showcasing activities and expertise. The search functionality's dynamic suggestions enhance user experience by expediting connections. Notifications contribute to user engagement by ensuring timely updates. The ”Post” feature not only allows content creation but also promotes knowledge sharing, further reinforcing the platform's collaborative ethos. Viewing profiles of other users and sending connection requests create a sense of community, while the visual representation of connection status facilitates networking.

APPENDIX A

A.1 Project Schedule

Below is the Gantt chart of our project Schedule to perfrom these specific tasks between these time frames.

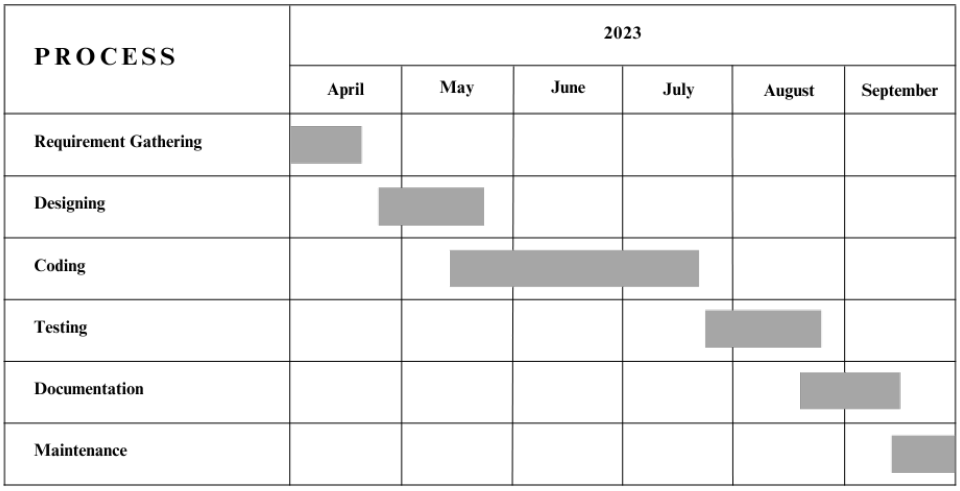


Figure A.1: Gantt Chart of Schedule

A.2 Setup Guide to run Code Connect Locally

1. **Prerequisite:**
   (a) XAMPP
   (b) Operating System that support XAMPP
   (c) Internet Connection for CDN libraries.
   (d) Project Files Cloned from Git Hub
2. Clone Repo in htdocs/

```
git clone https://github.com/sushantbramhacharya/CodeConnectBE.git
```

Clone DB Repo in mysql/data

```
git clone https://github.com/sushantbramhacharya/CodeConnectDB.git
```

3. Open XAMPP Control Panel
4. Start Apache and MySQL Servers
5. Run it on http://localhost/ or codeConnect directory

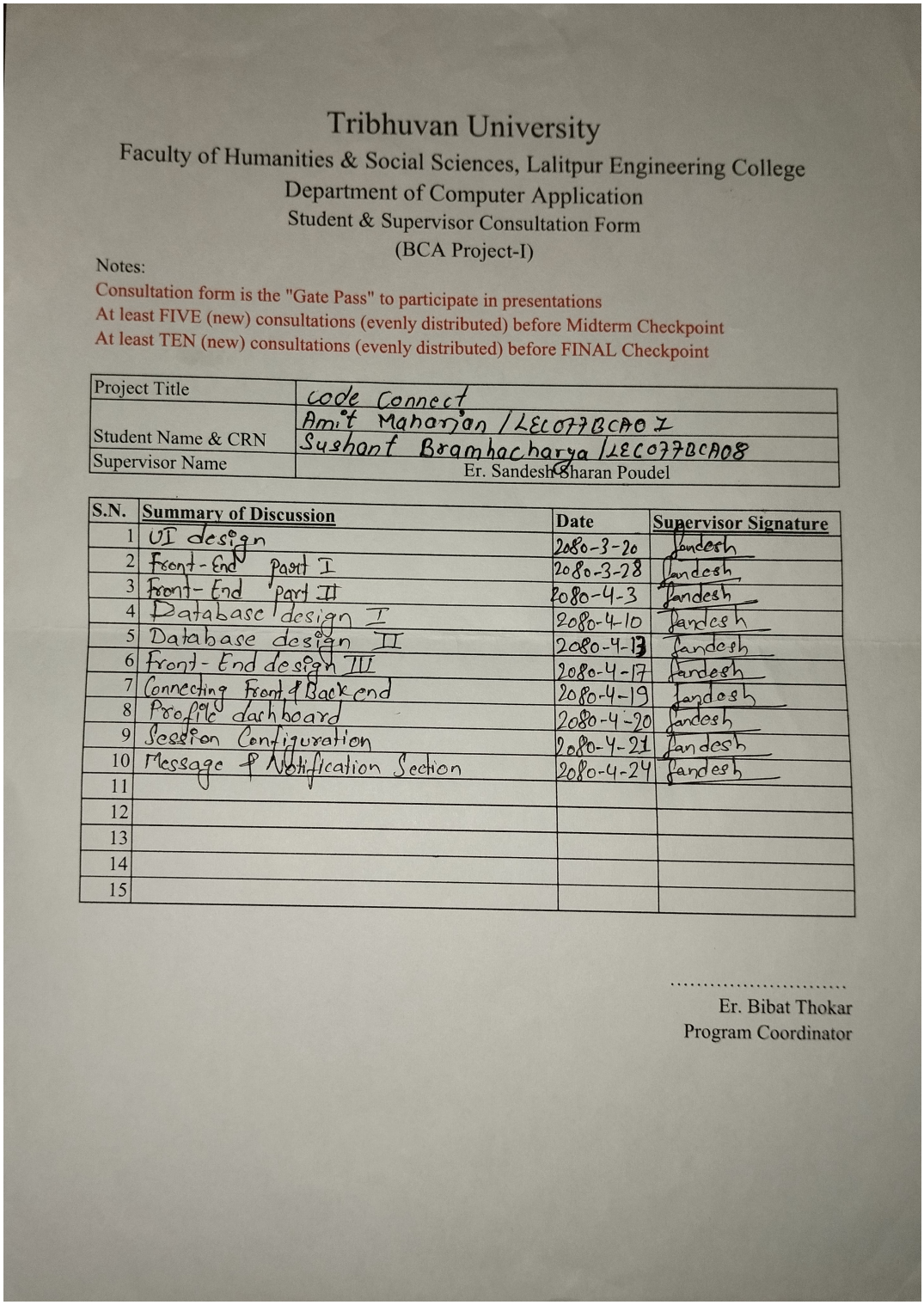
A.3 MySQL Connection in our CodeConnect PHP

```php
<?php
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "codeconnect";

$conn = new mysqli($servername, $username, $password, $dbname);

if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
?>
```

A.4 Supervisor Consultation Form



Tribhuvan University

Faculty of Humanities & Social Sciences, Lalitpur Engineering College

Department of Computer Application

Student & Supervisor Consultation Form

(BCA Project-I)

Notes:

Consultation form is the "Gate Pass" to participate in presentations

At least FIVE (new) consultations (evenly distributed) before Midterm Checkpoint

At least TEN (new) consultations (evenly distributed) before FINAL Checkpoint

Project Title	code Connect
Student Name & CRN	Amit Maharjan / LEC077BCA01
	Sushant Bramhacharya / LEC077BCA08
Supervisor Name	Er. Sandesh Sharan Poudel

S.N.	Summary of Discussion	Date	Supervisor Signature
1	UI design	2080-3-20	Sandesh
2	Front-End Part I	2080-3-28	Sandesh
3	Front-End Part II	2080-4-3	Sandesh
4	Database design I	2080-4-10	Sandesh
5	Database design II	2080-4-13	Sandesh
6	Front-End design III	2080-4-17	Sandesh
7	Connecting Front & Back end	2080-4-19	Sandesh
8	Profile dashboard	2080-4-20	Sandesh
9	Session Configuration	2080-4-21	Sandesh
10	Message & Notification Section	2080-4-24	Sandesh
11			
12			
13			
14			
15			

.....

Er. Bibat Thokar

Program Coordinator

Figure A.2: Supervisor Consultation Form

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