



TRIBHUVAN UNIVERSITY
FACULTY OF HUMANITIES AND SOCIAL SCIENCES
LALITPUR ENGINEERING COLLEGE

CODE CONNECT : CONNECT WITH CREATIVES

BY
SUSHANT BRAMHACHARYA (LEC077BCA08)
AMIT MAHARJAN (LEC077BCA01)

MIDTERM REPORT
SUBMITTED TO THE DEPARTMENT OF COMPUTER APPLICATION
IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR
THE DEGREE OF BACHELORS IN COMPUTER APPLICATION

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LALITPUR, NEPAL

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Tribhuvan University
Faculty of Humanities and Social Sciences

CODE CONNECT : CONNECT WITH CREATIVES

Submitted to
Department of Computer Application
Lalitpur Engineering College

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

Submitted by
Sushant Bramhacharya (LEC077BCA08)
Amit Maharjan (LEC077BCA01)
AUGUST, 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

BCA Program Coordinator

Er. Bibat Thokar

Lecturer

Department of Computer Application , Lalitpur Engineering College

August, 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

Department of Computer Application ,

Lalitpur Engineering College ,

Faculty of Humanities and Social Sciences ,

Tribhuvan University, Nepal.

August, 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.

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

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Sushant Bramhacharya (LEC077BCA08)

Amit Maharjan (LEC077BCA01)

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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. Feasibility 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 Experience in our applications were used. Unit testing for our authentication unit was tested. Until Now implementation of Login and Register System, Discussion Management, Profile Search, Basic UI of Messaging System, Geeking System. And things like Real time system, CV and Portfolio Management etc is yet to be implemented.

Keywords: *Connection, Customized Profile, Discussion and Messaging*

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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 doesn't have more interactive message system.
- Videos Cannot be Uploaded.
- Our system does not have a robust notification system. Users are only notified when they receive a new message 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 we perceive and harness 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 you to initiate server requests seamlessly from the client-side code (JavaScript). By adopting this approach, you can trigger server interactions without obstructing the user's interaction with the web page. 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. Additionally, 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 or phone numbers. This streamlined process ensures that IT professionals can easily access the platform and connect with their peers.

- **User Profile Management:** Within the profile management section, users will have the ability to showcase their expertise. Portfolio management enables users to upload and highlight their project details hosted on platforms like GitHub, giving others insight into their skills and contributions. Additionally, the resume management feature allows users to present their skills, experience, and achievements in a structured manner.
- **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/News Feed:** 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' (similar to liking on Facebook) 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 private messages. This ensures that users stay updated on relevant interactions and stay engaged with the platform's activities.

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 can 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 entities to work for proper functioning of our system. There are different entities which are being used and will be used in further implementations. Different kinds of attributes have been used. This system has relationships like Has, Connects, Posts etc which are crucial part of the system.

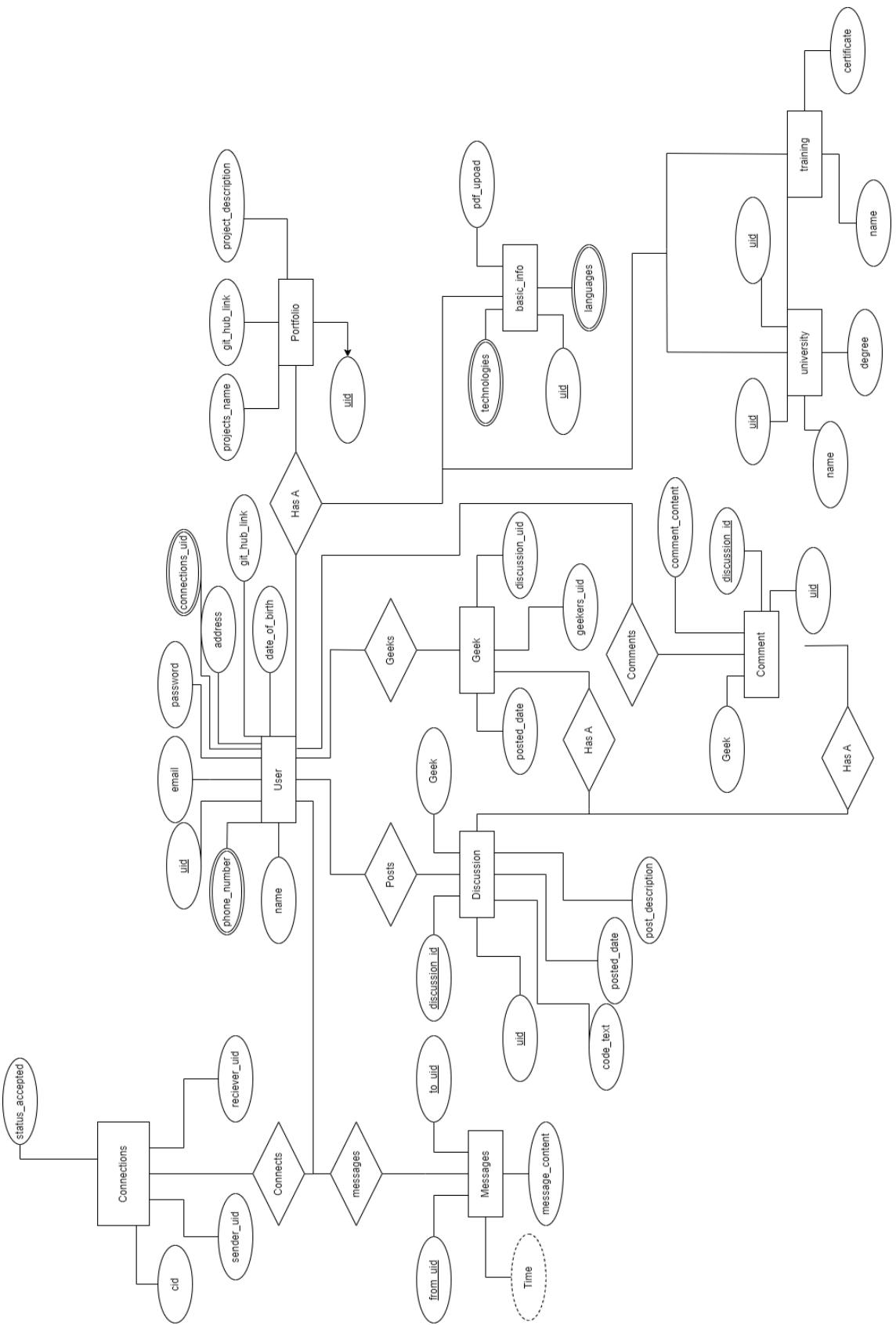


Figure 3.1: ER Diagram of System Data

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.

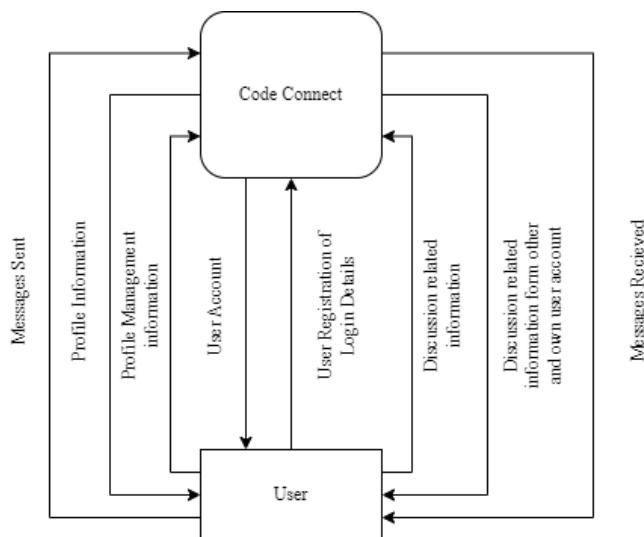


Figure 3.2: Data Flow Diagram (Context Level)

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.

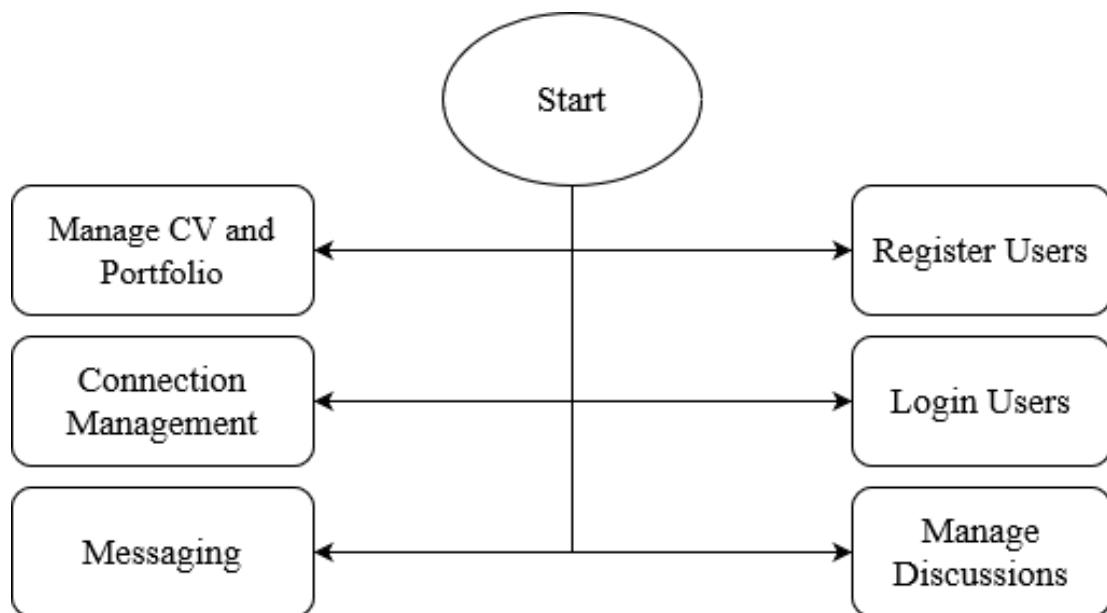


Figure 3.3: Main Architecture of System

3.4.2 Activity Diagram

An activity diagram visually presents a series of actions or flow of control in a system similar to a flowchart or a data flow diagram. This diagram showed how our program flow goes on. Here it shows how user can go through the process of using our app and what activities they can perform.

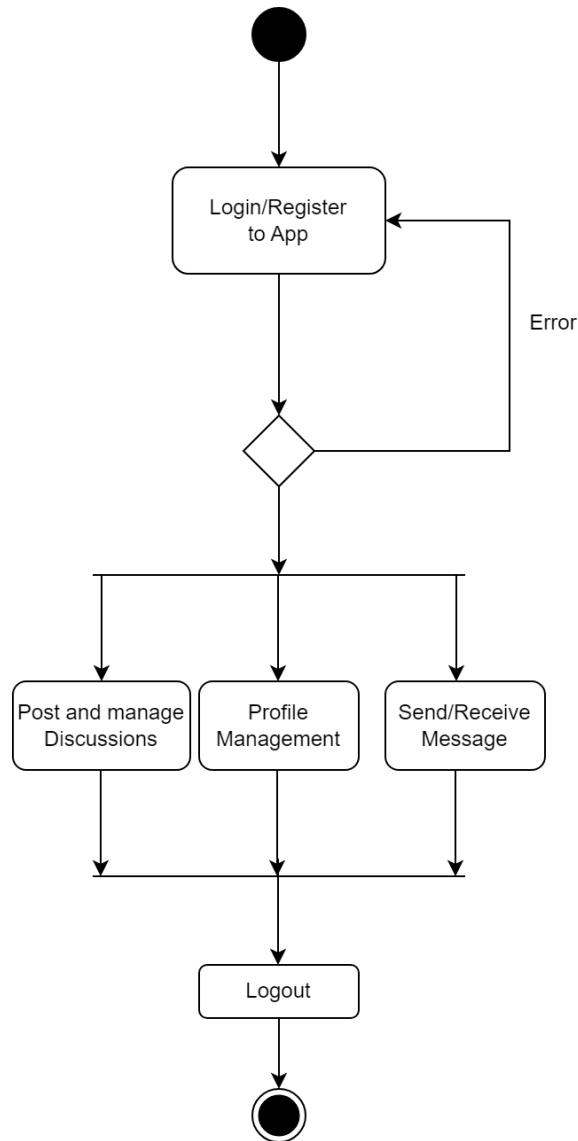


Figure 3.4: Activity Diagram

3.4.3 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.

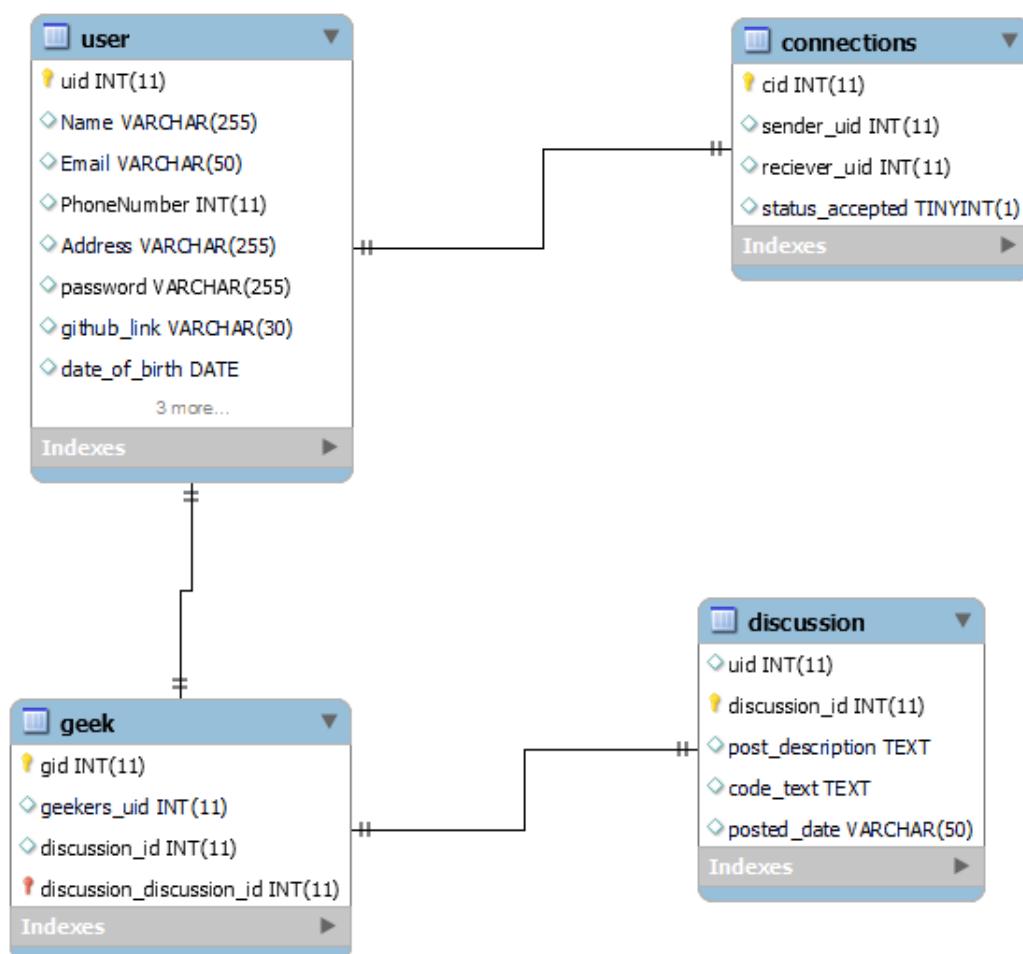


Figure 3.5: Database Schema Design

3.4.4 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.

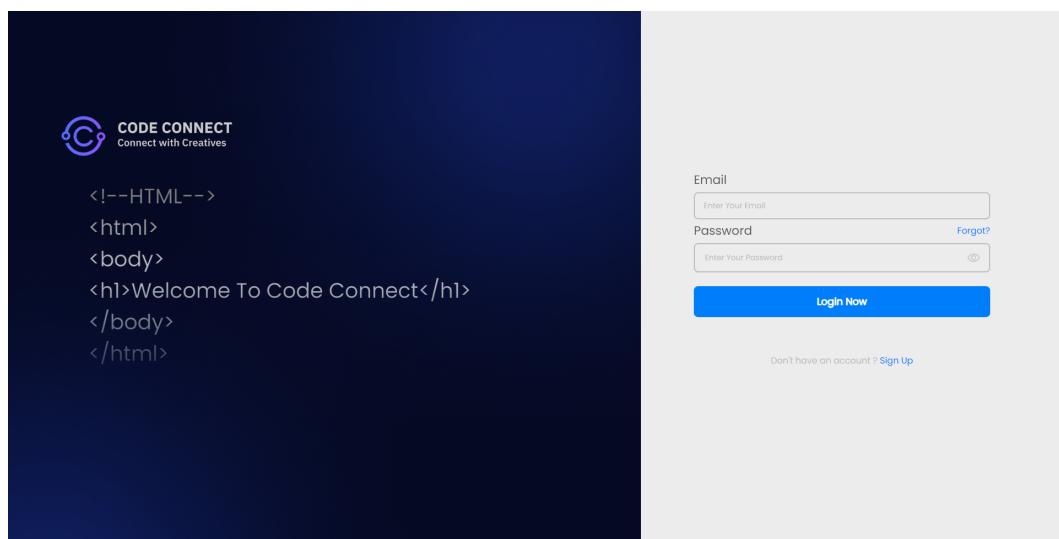


Figure 3.6: Desktop Login UI

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

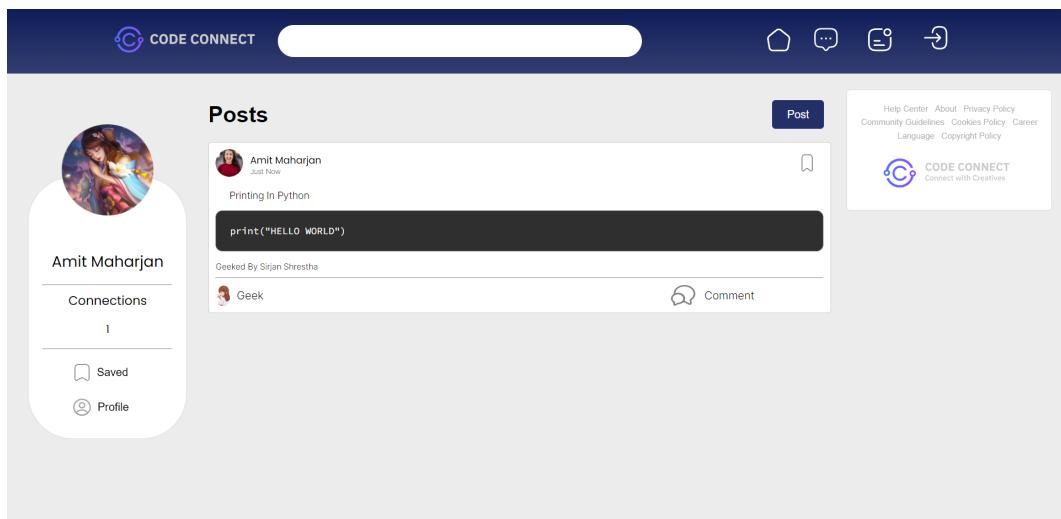


Figure 3.7: Desktop Homepage UI

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

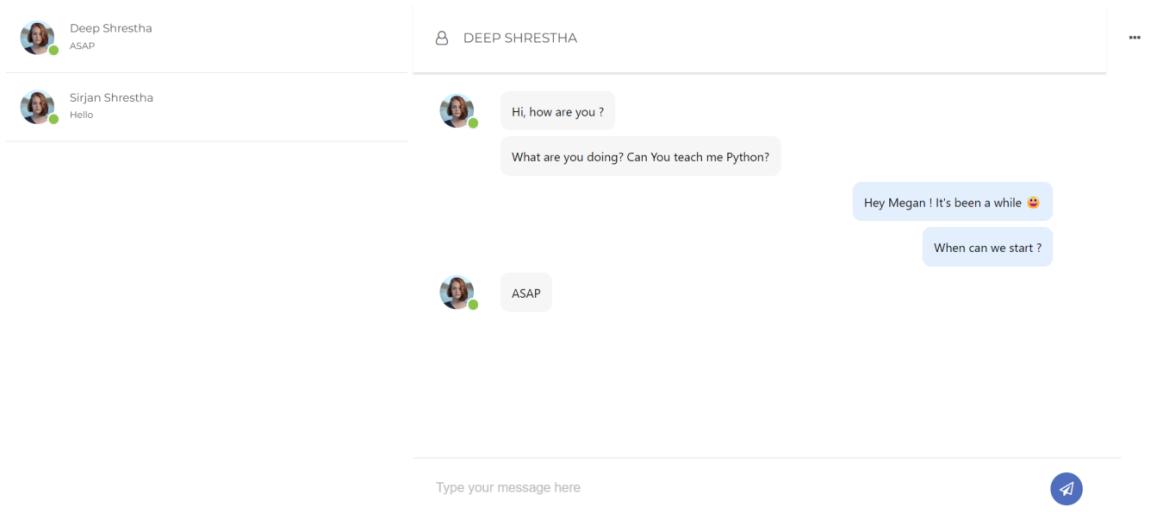


Figure 3.8: Desktop Messages UI

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

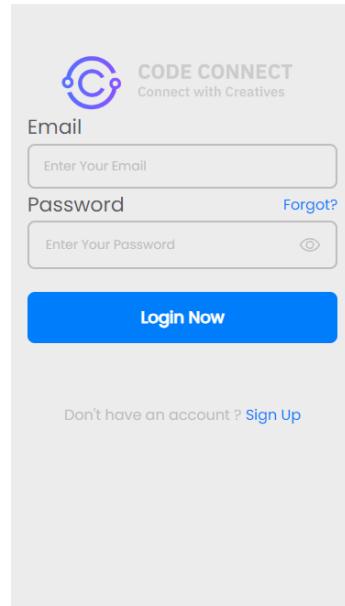


Figure 3.9: Mobile Login UI

3.4.5 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 initially reacts with Code Connect process and goes around all the processes. There is Data storage where processes store data and retrieve data as per their requirement.

Different processes which are implemented until midterm of our project have been created. The rest of processes like portfolio and CV management need to be implemented also.

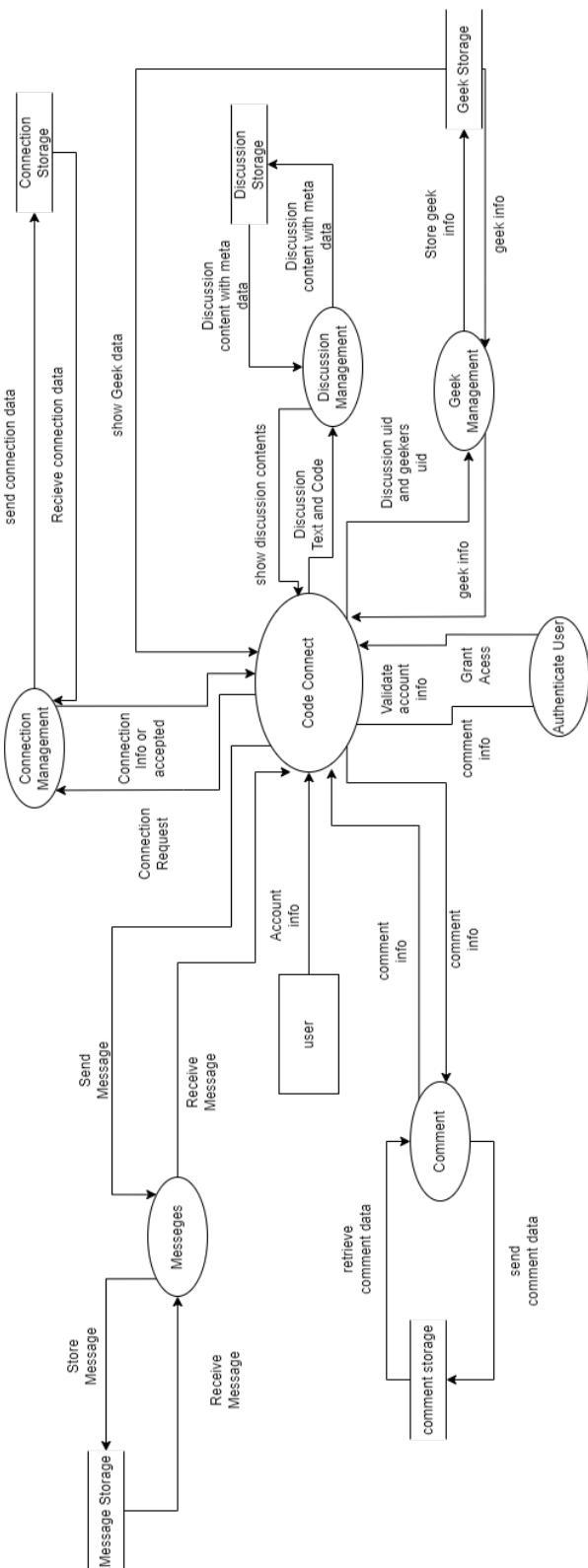


Figure 3.10: ER Diagram of System Data

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 version control system essential for software development and collaborative projects. It efficiently manages changes to files by recording them as "commits," enabling easy tracking and reverting to previous versions. Git's power lies in fostering collaboration, allowing multiple individuals to work on projects simultaneously through branches. These branches facilitate independent development, and Git's merging capabilities seamlessly integrate diverse changes into the main codebase. Its historical recording acts as a backup and recovery mechanism, safeguarding against data loss. Moreover, Git promotes code reviews, enabling precise feedback on proposed changes, and enhancing overall code quality. The isolation of work in separate branches reduces conflicts and enhances focus. It's especially popular in the open-source community, aiding global contributors to collaborate via forks and pull requests. Git's integration with CI/CD pipelines automates testing and deployment, making it an integral part of modern development processes. In essence, Git empowers teams with version control, collaboration tools, and an efficient system to manage changes, fostering productive and streamlined project development.

4.2.2 Figma

Figma is a cloud-based design and prototyping tool widely used for creating user interfaces and interactive designs for web and mobile applications. Its standout feature is real-time collaboration, allowing multiple users to work simultaneously on the same design, fostering seamless teamwork. With versatile design tools encompassing vector editing, typography controls, and color management, Figma empowers designers to craft intricate layouts and visually appealing interfaces. Interactive prototypes can be developed with clickable elements, animations, and transitions, aiding in simulating user interactions and presenting functionality. Component and style libraries ensure design consistency and efficiency, while design handoff is simplified through easy sharing of specs, assets, and CSS properties. Figma promotes stakeholder engagement by facilitating user testing and feedback collection within the platform. It extends its functionality through a wide range of plugins and integrates with various design and development tools, accommodating diverse workflows. Cross-platform compatibility, version history, and undo capabilities contribute to a flexible and efficient design process. Overall, Figma's collaborative, versatile, and user-centric features make it a valuable asset for teams aiming to deliver compelling digital experiences.

4.2.3 GitHub

GitHub is a web-based platform pivotal to software development, offering version control and collaboration tools. It employs Git for version control, tracing code changes and preventing conflicts, while hosting repositories to centralize code storage and collaboration. Through collaborative development, multiple developers can work concurrently on a project, making changes in separate branches and merging them into the main codebase. Pull requests enable proposed changes to undergo review and discussion before integration, ensuring code accuracy. An integrated issue tracker handles bug reports, feature suggestions, and project discussions, while wikis and documentation enhance accessibility. GitHub seamlessly integrates with CI/CD tools for automated testing and deployment. Popular in the open-source realm, it encourages community participation by enabling contributions and project forks.

Security measures include vulnerability scanning and permissions management. In essence, GitHub serves as a collaborative hub for version control, code management, issue tracking, and community involvement, empowering efficient, high-quality 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 is an amazing open-source relational database management system (RDBMS) that's super popular for organizing and handling structured data like a pro. It's like a superhero for managing loads of information, whether you're building websites or business tools. The cool thing is that MySQL speaks a special language called

SQL (Structured Query Language), which lets you create, tweak, and ask questions about databases. You can set up tables, make connections between data, and do fancy searches with ease. It's got your back with features like making sure data is legit, indexing for quick data finding, and even handling transactions so things stay reliable. MySQL's built to let lots of people work on data together, all while keeping things secure and controlled. Whether you're building something small or a massive enterprise project, MySQL's got the chops to handle it all. With its adaptability, community support, and knack for playing nice with other tech, MySQL is your go-to tool for wrangling data and making applications that really work.

4.2.6 PHP

In the realm of web development, PHP emerges as a scripting language that commands attention. As the author of this report, I find myself captivated by PHP's capabilities and its pivotal role in creating dynamic and interactive websites. Picture a scenario where a website needs to process forms, communicate with databases, or display content that adapts to user actions – this is where PHP steps onto the stage. Seamlessly integrated with HTML, PHP empowers websites to exhibit a range of enchanting functionalities. It bestows the power to build responsive forms that wield actual functionality, to interact with databases effortlessly, and to breathe life into web content through dynamic displays that transform in real-time. The beauty of PHP lies in its collaborative spirit; being open-source, it's akin to having a community of like-minded developers ready to offer assistance and guidance. For novices and seasoned developers alike, PHP serves as a formidable tool, amplifying the potential of web projects with its prowess in functionality and innovation. As I delve into the intricacies of PHP, I am compelled to highlight its role as a cornerstone in modern web development, an indispensable asset for crafting websites that stand out in the digital landscape.

4.3 Modules Used

4.3.1 AJAX

In the dynamic realm of web development, AJAX (Asynchronous JavaScript and XML) emerges as a groundbreaking technique that has redefined the way web pages engage with servers to deliver content. As the author of this report, I find myself captivated by the transformative capabilities that AJAX introduces to the digital landscape. With AJAX, the marriage of JavaScript and server communication takes on a new dimension, offering a seamless and asynchronous mode of data exchange. Unlike conventional methods that demand full page reloads to update content, AJAX empowers developers to fetch and transmit data in the background, gracefully refreshing specific sections of a web page without disrupting the user experience. A notable aspect of AJAX is its compatibility with various data formats, such as XML and JSON, which facilitate efficient and reliable data transmission. This versatile technique enables real-time updates, form submissions, and content loading that harmonize with users' actions. In essence, AJAX endows web applications with a dynamic, responsive, and interactive nature that echoes the sophistication of traditional desktop applications, elevating user engagement and propelling the field of modern web development into a new era of possibilities.

4.3.2 JQuery

Embarking on the journey of web development, one encounters jQuery as an influential player that has transformed the way interaction with HTML, CSS, and JavaScript. In the realm of crafting dynamic and interactive web experiences, I am intrigued by the capabilities that jQuery, as a fast, small, and feature-rich JavaScript library, brings to the forefront. As a contributor to this report, I find myself immersed in the profound impact that jQuery has on simplifying complex tasks and enhancing user interaction. By providing a streamlined way to manipulate the Document Object Model (DOM), jQuery empowers developers to effortlessly select, modify, and animate HTML elements. Its user-friendly syntax and extensive range of built-in functions alleviate the challenges posed by cross-browser compatibility issues, allowing seamless development across various platforms. Moreover, jQuery's plugin

ecosystem magnifies its potential, offering a plethora of pre-built functionalities that can be easily integrated into projects. The library's essence lies in abstracting intricate JavaScript operations into concise commands, resulting in cleaner code and expedited development cycles. Through its capabilities in event handling, animations, and AJAX requests, jQuery serves as a catalyst for elevating user experiences and accelerating the creation of captivating, feature-rich web applications.

4.3.3 mysqli Connect

In the domain of web development and database connectivity, the `mysqli_connect` function emerges as a cornerstone tool that I find fascinating to explore. As the author of this report, I'm intrigued by the pivotal role that `mysqli_connect` plays in establishing a seamless link between web applications and MySQL databases. This function, nestled within the PHP programming language, holds the power to initiate secure connections to databases, enabling the retrieval and manipulation of data. By providing parameters such as the database host, username, password, and database name, developers gain the ability to effortlessly establish a communication channel with MySQL servers. This function's significance lies in its contribution to the dynamic generation of interactive web applications, as it forms the foundational bridge for data-driven features and functionalities. With `mysqli_connect`, I am captivated by its influence in shaping efficient and responsive web experiences, making it a cornerstone component in the realm of modern database-driven web development.

4.3.4 Google Fonts

In the context of web design and typography exploration, I've had the privilege of discovering the transformative capabilities of Google Fonts. As I delve into this subject for our report, I'm genuinely impressed by the role Google Fonts plays in revolutionizing the way that is approached text presentation on the web. The vast array of fonts available at our fingertips, curated with precision and diversity, has left a lasting impression on me. Google Fonts not only addresses the creative aspirations of designers but also places user experience at the forefront by promoting

accessible and visually appealing text choices. With an intuitive interface and seamless integration, the process of embedding selected fonts into projects feels intuitive and user-friendly. The cherry on top is a performance optimization, ensuring that the aesthetic enhancements don't compromise website speed. My exploration of Google Fonts underscores its significance as a valuable asset in the design arsenal, enhancing both the aesthetics and accessibility of web content in a meaningful way.

4.3.5 Font Awesome

Navigating the realm of web design and user interface enhancement, I've been captivated by the remarkable utility that Font Awesome offers. As I delve into the depths of this report, I find myself immersed in the significance of Font Awesome's icon library in modern web development. The array of icons, meticulously crafted and encompassing a wide spectrum of categories, has truly left an impression on me. Font Awesome not only simplifies the process of integrating icons into web projects, but it also adds a layer of visual appeal and functionality that resonates with users. The convenience of using CSS classes to seamlessly incorporate icons and the option to customize their size, color, and style gives designers a dynamic toolbox for creative expression. What intrigues me further is its compatibility with various frameworks and platforms, making it a versatile choice for both beginners and seasoned developers. As I examine the impact of Font Awesome on enhancing user experiences, I'm struck by its ability to add depth and meaning to digital interfaces, making it an indispensable asset in the journey of crafting captivating and user-centric web applications.

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.

Authentication Unit

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

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

Table 4.1: Authentication Unit Testing

5 WORKS COMPLETED

5.1 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.

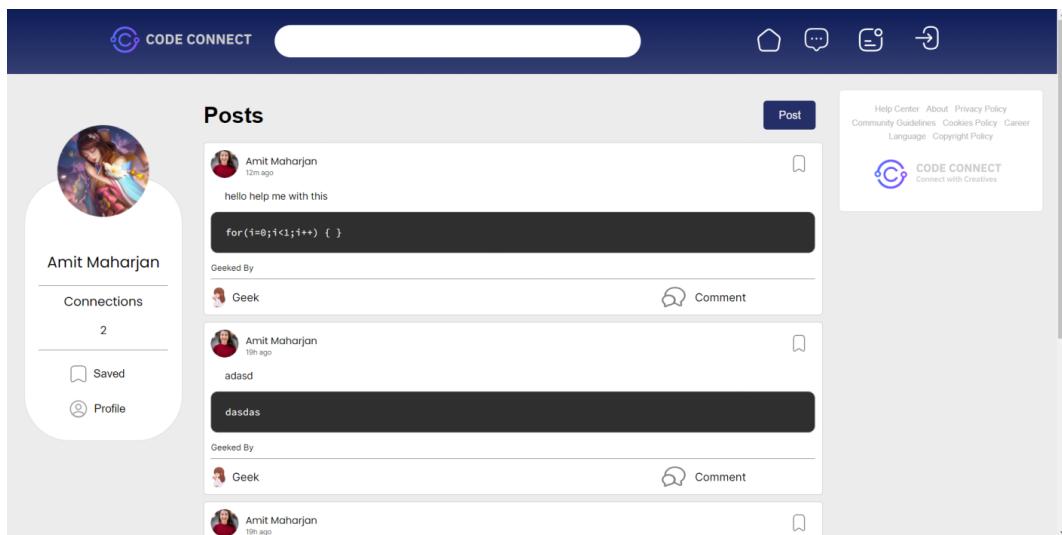


Figure 5.1: Home Page.

5.2 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.

5.3 Un-Geek

In the picture, you can see what happens when a user clicks "un-geek." It's like taking back a previous action, kind of like when you change your mind about liking something. Just as you can "unlike" by using a "dislike" button, "un-geek" lets you remove the interest or approval you showed earlier with the "geek" feature.

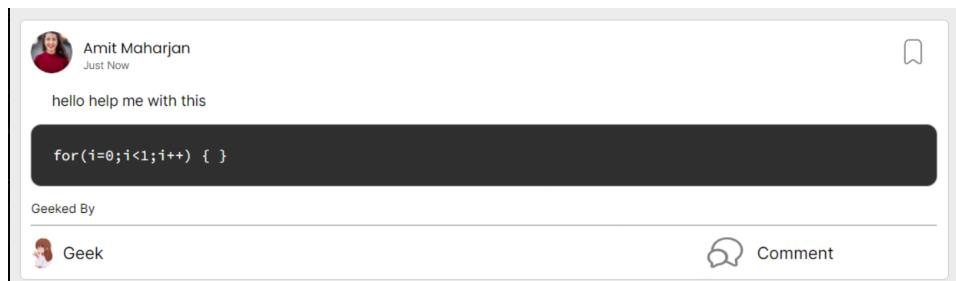


Figure 5.3: Un-Geek.

5.4 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.

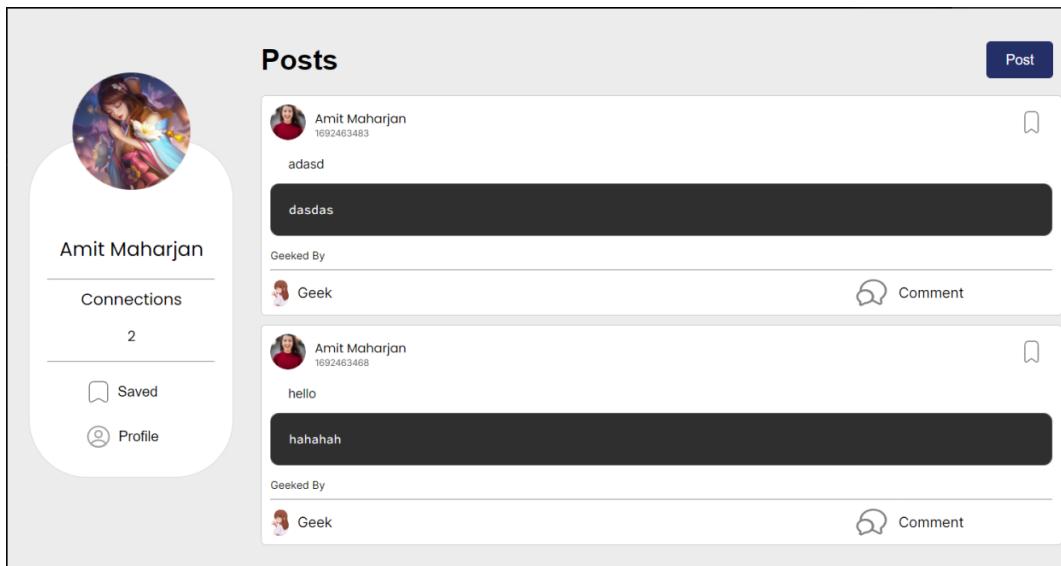


Figure 5.4: Profile.

5.5 Messenger

In the picture, you can see the messaging part of Code Connect. It's like a chat where users can talk in real-time. This helps users easily share information, talk about projects, and ask for help within the Code Connect community. This messaging feature makes it simple for users to connect, share ideas, and work together on coding stuff.

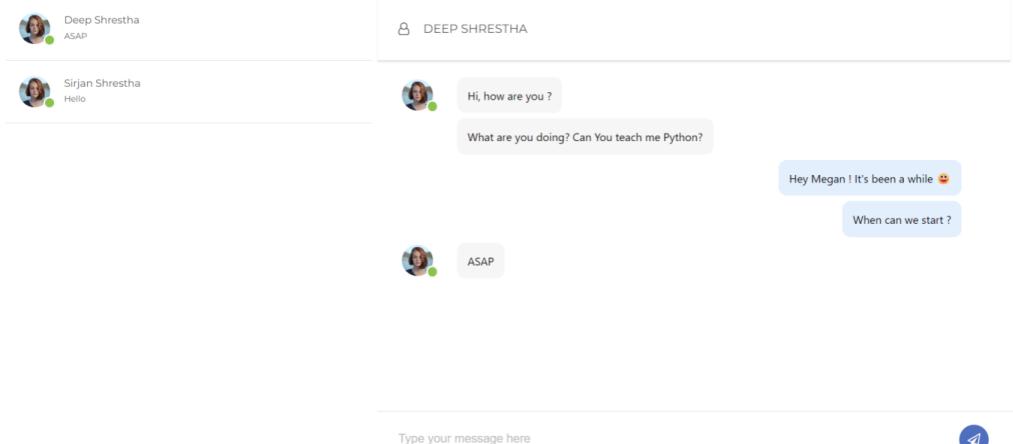


Figure 5.5: Messenger.

5.6 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 5.6: Search.

5.7 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.

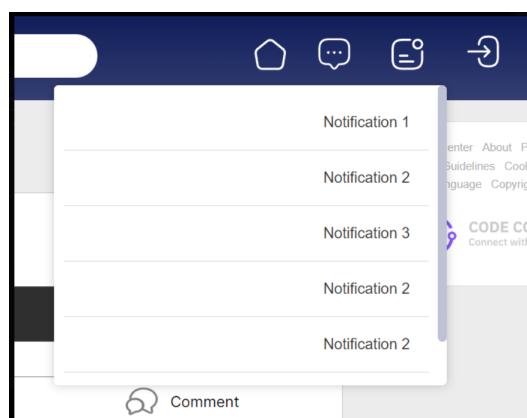


Figure 5.7: Notification.

5.8 Post

In the picture, you can see how you can make posts in Code Connect. It's like writing a message where you can share text and pieces of code. This helps you start conversations, show your coding work, and get advice from other users. It's a way to work together and learn from each other in Code Connect.

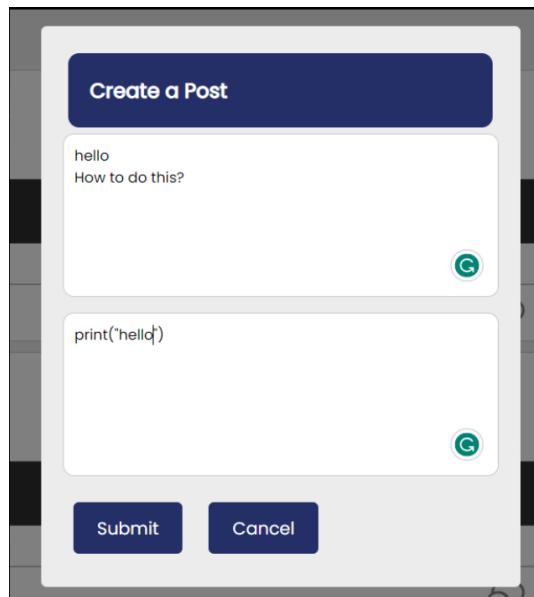


Figure 5.8: Post.

5.9 Profile of other Users

In the image below, you can see the profile section of other users. This section provides insights into their details, interests, and activities within the platform. By exploring these profiles, users can learn more about each other, their skills, and their contributions, fostering connections and collaboration within the community.

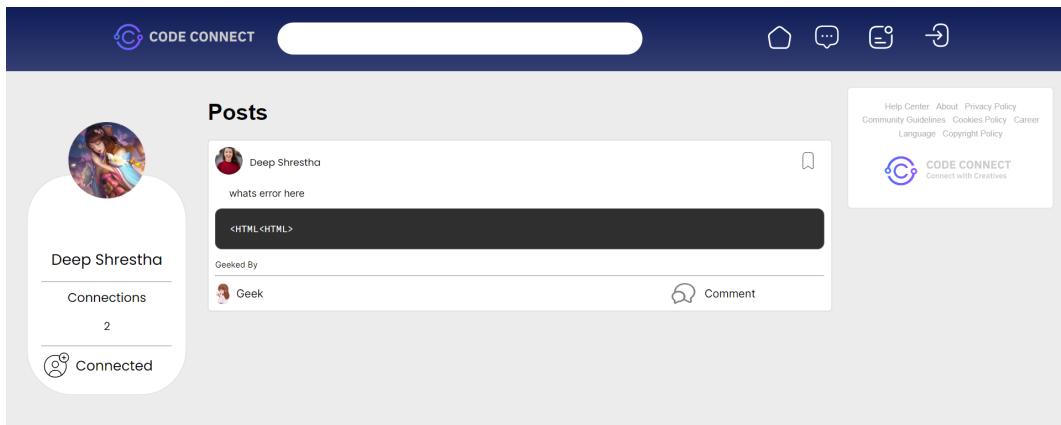


Figure 5.9: Profile of other Users.

5.10 Send Connection Request

Sending a connection request is like asking someone if they want to be your friend on the platform. It's a way to show that you're interested in being connected and sharing things with them. If they accept, you can interact more and collaborate within the platform.

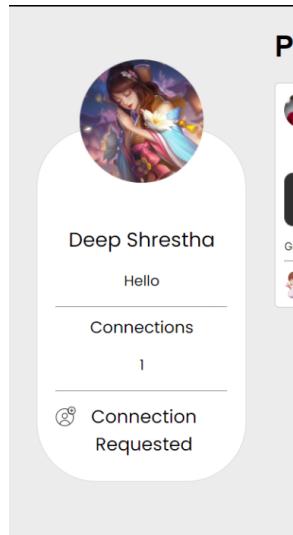


Figure 5.10: Send Connection Request.

5.11 Result after connection request is sent

The image below gives you an idea of what it's like for another user when they receive a connection request. They'll see a notification that someone wants to connect with them. They can choose to accept the request and start connecting with the person.

who sent it.

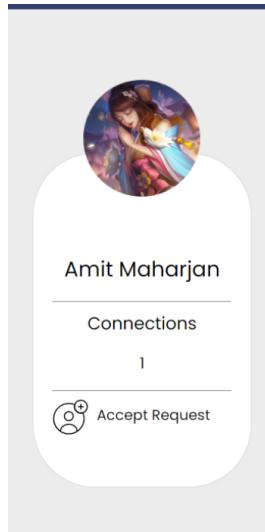


Figure 5.11: Result after connection request is sent.

5.12 Connection Request Accepted

If the request is accepted, you'll see a "connected" sign, showing you're now friends. The person who sent the request will be added to your list of friends. This makes it easy to find and talk to each other, so you can work together and share stuff within the platform.

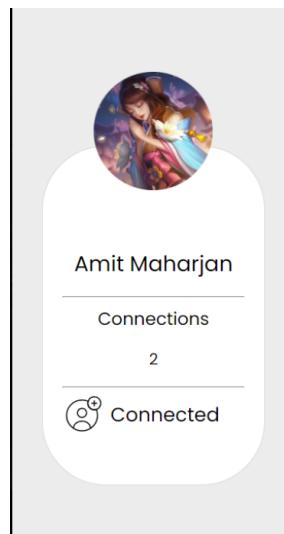


Figure 5.12: Connection Request Accepted.

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.

7 WORKS REMAINING

Below are the things which are need to be implemented in our system:

7.1 Comments

Comments sections in our project is yet to be implemented. Comment section by creating another comment database will be implemented which will follow the instructions of our ER diagram.

7.2 Messeneger

Real-time messaging in our system yet need to implement which can be implemented using AJAX and creating new database messages which is yet to be implemented. It will be also implemented by the help of our ER diagram.

7.3 Search for Codes/Discussion

Search for user has been created but same logic for searching Discussion and Codes need to implemented. Button through which users can toggle between user search or Code/Discussion Search should be created.

7.4 CV Upload and Management

One of the most important tool need to be implemented through which users will be able to upload their CV and they will also have a section to shows the highlights of their CV

7.5 Portfolio management

This is also another core feature yet to be implemented in our system which showcases their projects with github links.

APPENDIX A

A.1 Project Schedule

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

PROCESS	2023					
	April	May	June	July	August	September
Requirement Gathering						
Designing						
Coding						
Testing						
Documentation						
Maintenance						

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  
$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 Mahajan / LEC077BCAOI		
Supervisor Name	Sushant Bramhacharya / LEC077BCAO8 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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