A

Mini Project Report

on

ForumConnect: Interactive Group Discussion System

Submitted in partial fulfillment of the requirements for the degree

Second Year Engineering – Computer Science Engineering (Data Science)

by

Vidhi Madhavi	**23107095**
Sujal Kumthekar	**23107118**
Varunkumar Lysetti	**23107101**
Himanshu kalwa	**23107102**

Under the guidance of

Mr. Praveen Shinde

DEPARTMENT OF COMPUTER SCIENCE (DATA SCIENCE)

A.P. SHAH INSTITUTE OF TECHNOLOGY

G.B. Road, Kasarvadavali, Thane (W)-400615

UNIVERSITY OF MUMBAI

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CERTIFICATE

This to certify that the Mini Project report on **ForumConnect: Interactive Group Discussion System** has been submitted by **Vidhi Madhavi** (23107095), **Sujal Kumthekar**(23107118**), Varunkumar Lysetti**(23107101) and **Himanshu Kalwa**(23107102) who are bonafide students of A. P. Shah Institute of Technology, Thane as a partial fulfillment of the requirement for the degree in **Computer Science Engineering (Data Science)**, during the academic year **2024-2025** in the satisfactory manner as per the curriculum laid down by University of Mumbai.

Mr. Praveen Shinde
Guide

Ms. Anagha Aher
HOD, CSE (Data Science)

Dr. Uttam D. Kolekar
Principal

External Examiner:

Internal Examiner:

Place: A. P. Shah Institute of Technology, Thane
Date:

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Chapter 1

Introduction

A discussion forum is an online platform that allows individuals to engage in meaningful conversations, share ideas, ask questions, and provide feedback on a variety of topics. These platforms provide a collaborative space for knowledge sharing, community-building, and problem-solving. In this project, we aim to build a discussion forum using Python, which will enable users to post topics, comment on discussions, and interact with other community members in an organized manner. The project will not only demonstrate the practicality of Python in web development but also provide an interactive environment for users to exchange ideas and participate in conversations.

The development of this discussion forum will involve utilizing Python as the primary backend language. Python, known for its simplicity and versatility, is widely used in web development and can be combined with frameworks such as Flask or Django to create dynamic web applications. In this project, we will use Tkinter a lightweight web framework, to handle routing, templates, and database interactions. By using Flask, we can ensure scalability and maintain the project's simplicity and flexibility for future extensions.

One of the main goals of this project is to allow users to create accounts, log in, and engage in discussions by posting threads and commenting on them. The application will consist of multiple pages, including a home page with an overview of active discussions, a registration and login page for user authentication, and individual thread pages where users can comment and interact. The threads and comments will be stored in a MySQL database, which will serve as a simple yet efficient solution for managing data in this project.

Through this project, we aim to not only provide a learning experience in Python but also build an engaging platform that can help foster collaboration and communication among its users

1.1 Purpose:

The purpose of the Discussion Forum Mini Project using Python is to develop an interactive web platform that allows users to engage in meaningful conversations, share knowledge, and participate in community-driven discussions. This project seeks to create a functional and user-friendly forum where individuals can post topics, comment on discussions, and connect with others over shared interests or questions.

- Enhance Community Engagement

The project encourages the formation of communities based on shared interests, allowing individuals to come together in a collaborative environment. Whether the discussion is centered on educational topics, hobbies, or professional advice, the platform offers a space for users to share their perspectives and gain valuable insights from others.

- Facilitate User Interaction and Collaboration

The discussion forum allows for seamless communication and interaction between users. By offering features like user registration, topic creation, and comment posting, the project fosters collaboration.

- Develop a Secure and Scalable Platform

Security is one of the top priorities for any online platform. The project's purpose includes implementing secure authentication and authorization processes, such as user login and registration, to protect sensitive user data.

1.2 Problem Statement

The lack of a centralized platform for meaningful discussions and knowledge sharing presents a significant challenge for users seeking professional support or community engagement. Existing communication tools are often fragmented, making it difficult to find relevant information, participate in valuable conversations, and engage with like-minded individuals. Furthermore, the organization of content is often inefficient, hindering users from easily discovering relevant discussions. This results in a frustrating experience for users who are trying to connect with others, share insights, or seek assistance in a productive manner. The need for a more efficient, well-organized, and engaging platform has never been more apparent

1.3 Objectives

1. Knowledge Sharing: Offering a platform that enables users to share and gain insights, exchange valuable information, ideas, and expertise, fostering a culture of continuous learning and knowledge growth for everyone involved.

2. Community Building: Creating an environment where individuals with similar interests or goals can interact, collaborate, and support each other, helping to build a strong sense of belonging and engagement within the community.

3. Problem-Solving: Facilitating discussions that encourage users to bring up challenges, share experiences, and collaborate on finding practical solutions, ultimately helping individuals overcome obstacles and enhance their problem-solving abilities.

4. Networking Opportunities: Providing a space for individuals to connect with others who share similar professional or personal interests, helping them expand their network, forge new relationships, and unlock potential collaboration or career opportunities.

1.4 Scope

The scope of this mini project is to develop a **Discuss Forum** that allows users to interact, share information, and engage in conversations on various topics. The forum will support key features such as user registration and authentication, post creation and management, commenting and replies, categorization, and search functionality. Additionally, moderation tools will be implemented to maintain a safe and productive environment, with features for reporting inappropriate content and user roles for managing posts. This forum will aim to provide a robust platform for discussion while offering a simple yet comprehensive experience for users and administrators.

- Community Support Platform

  Serving as a space where individuals can find assistance in technical, academic, or emotional matters by connecting with others who can provide guidance, support, and solutions tailored to their specific needs.

- Administration

  Involves the management of the platform's content and users, ensuring that discussions remain respectful, relevant, and safe. This includes moderating posts, addressing inappropriate behaviour, and maintaining a positive and welcoming environment for all users.

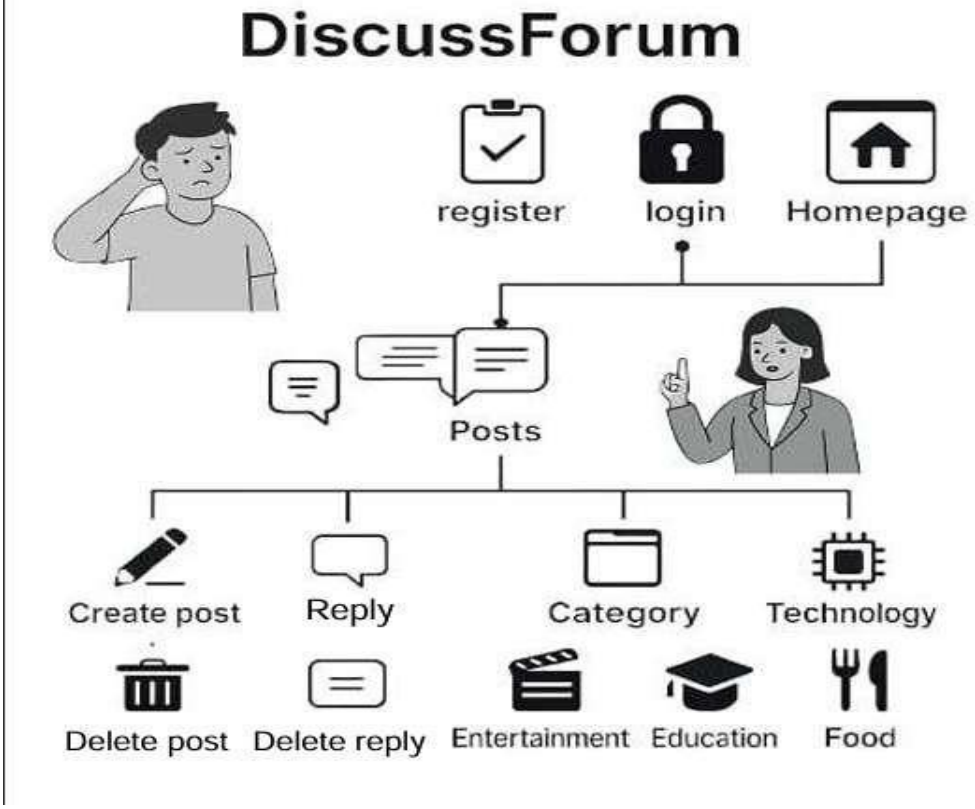
- Future Expansion

  Envisions the platform's growth with the integration of a mobile app for greater accessibility and convenience. Additionally, AI-powered recommendations will be introduced to provide personalized content suggestions, making it easier for users to find relevant discussions, answers, and connections based on their preferences and activity.

CHAPTER 2

Proposed System

The proposed Discuss Forum system aims to provide a simple, user-friendly platform for discussions and knowledge sharing. Users will be able to create profiles, participate in discussions on topics like technical, academic, and emotional support, and easily search for content through a well-organized structure. The platform will include features such as private messaging and real-time notifications to keep users connected and engaged. Content moderation tools will ensure a safe and respectful environment, allowing users to report inappropriate content or block disruptive behavior, making the platform a secure space for all participants.



2.1 Features and Functionality

The **Discuss Forum** platform is designed with user accessibility and privacy at its core, providing a space for individuals to engage in meaningful discussions while protecting their anonymity. With features that allow easy creation of accounts and personalized profiles, users can participate in vibrant discussions on various topics, from technical advice to emotional support. The platform ensures smooth navigation with robust search and filtering options, allowing users to quickly find discussions that are relevant to their needs. Additionally, effective content moderation tools ensure a safe environment, enabling users to report inappropriate content or block disruptive users. Admins have the authority to manage user behavior and ensure the integrity of discussions.

The system includes these key features:

- User Registration and Privacy: Account creation with anonymity options.
- Discussion Threads Creation and Management: Start, reply, and organize discussions.
- Search and Filtering Options: Search by keywords and filter by categories.
- User-friendly Feedback: Reporting, blocking, and admin profile management.

CHAPTER 3

Project Outcomes

The outcomes of this project highlight significant improvements in user experience, safety, and community engagement within the platform. By introducing advanced content moderation and security features, we ensured a safer and more respectful environment for users. These enhancements, combined with tools that foster collaboration and meaningful interactions, allowed the platform to thrive as a space for knowledge exchange. Additionally, active user engagement was promoted through interactive features, driving ongoing participation and community growth. Overall, the project achieved its goal of creating a secure, vibrant, and user-centric platform that encourages positive contributions and connections.

- Content Moderation & Security refers to the tools and settings that ensure a safe and respectful environment for all users. It allows individuals to report harmful or inappropriate content, block unwanted users, and manage privacy settings to control who can access their information.

- Community Building focuses on creating an interactive and collaborative space where users can engage in meaningful discussions, share knowledge, and connect with others. This feature fosters a sense of belonging and encourages the exchange of ideas among users with similar interests.

- User Engagement emphasizes active participation in the platform. It encourages users to post, respond to threads, and interact with the community. Features like notifications and recognition rewards, such as badges, help keep users involved and motivated to contribute regularly.

Chapter 4

Software Requirements

The Discussion Forum utilizes a combination of technologies to provide an efficient, scalable, and user-friendly platform for discussions. The software requirements are detailed as follows:

1. Frontend:

Python (with Tkinter for GUI Development):

The primary programming language used for the development of the Discussion Forum is Python, which is chosen for its simplicity, readability, and extensive library support. Python's Tkinter library is utilized to build the graphical user interface (GUI), providing an interactive environment where users can easily navigate through features such as registration, login, creating posts, and commenting on posts. Tkinter is a lightweight toolkit that allows for rapid GUI development, making it an ideal choice for desktop applications like the Discussion Forum. It provides tools for creating various widgets like buttons, labels, text boxes, and forms, offering a smooth user experience

2. Backend:

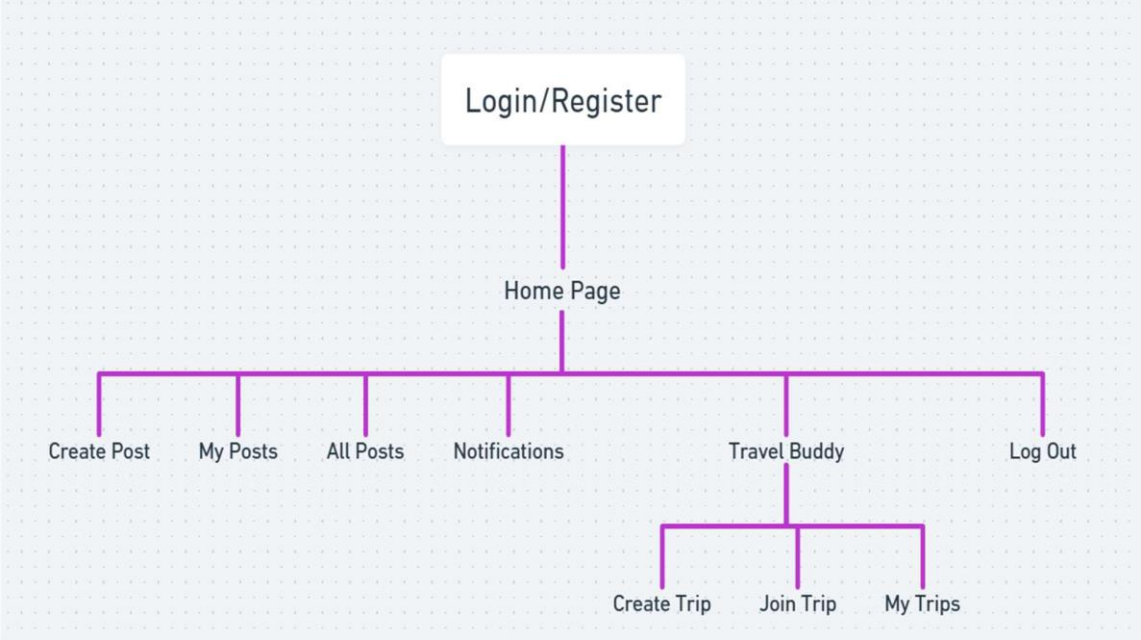
MySQL Database: The backend of the Discussion Forum is powered by MySQL, a reliable and scalable relational database management system that efficiently stores and retrieves core data, including user accounts, posts, and comments. The Users Table holds user information such as usernames, email addresses, and hashed passwords, ensuring secure authentication during login, while the Posts Table stores details of each discussion thread, including titles, content, and references to the user who created it. The Comments Table manages the comments made on each post, linking them to both users and specific posts to enable structured discussions. MySQL's relational structure ensures smooth relationships between data, enabling efficient retrieval and maintaining data integrity. For example, when a user logs in, the system authenticates credentials by checking the Users Table, and when posts or comments are created, they are linked to the respective users through foreign keys. MySQL's scalability supports the system's growth, handling increasing amounts of data and users while maintaining performance.

Overall, MySQL serves as the backbone of the system, ensuring that the application can efficiently store, retrieve, and manage large volumes of data while maintaining performance and security. The database's scalability also allows the system to grow, supporting increasing amounts of data as more users join and interact with the forum.

Chapter 5

Project Design

The design of the Discussion Forum Management System focuses on providing an efficient, user-friendly, and secure platform for online discussions. The database design utilizes MySQL to store key data, including user profiles, forum posts, and comments, with tables such as Users, Posts, and Comments ensuring data is organized and easily retrievable. The frontend design leverages Python and Tkinter to create an intuitive interface, allowing users to easily register, log in, create posts, and engage in discussions. The system's backend design implements robust logic to manage user registration, authentication, post creation, and comment handling, while ensuring data consistency and security. Passwords are securely hashed, and foreign key relationships maintain data integrity across the system. The design also prioritizes scalability, with features like user-friendly navigation, clear access to posts and comments, and potential for future enhancements like search functionality or real-time interactions. Overall, the Discussion Forum is designed to be secure, efficient, and easy to use, ensuring a smooth experience for both users and administrators



Chapter 6

Project Scheduling testing.

Project scheduling is the process of defining and organizing the tasks, timelines, and resources needed to complete a project. It involves breaking down the project into smaller, manageable tasks, assigning durations and deadlines, and determining dependencies between tasks. A well-structured schedule helps ensure that the project stays on track, meets its deadlines, and allocates resources efficiently. Project scheduling is essential for monitoring progress, identifying potential delays, and ensuring timely project delivery. It is typically visualized using tools like Gantt charts or timelines to provide a clear roadmap for the project's completion.

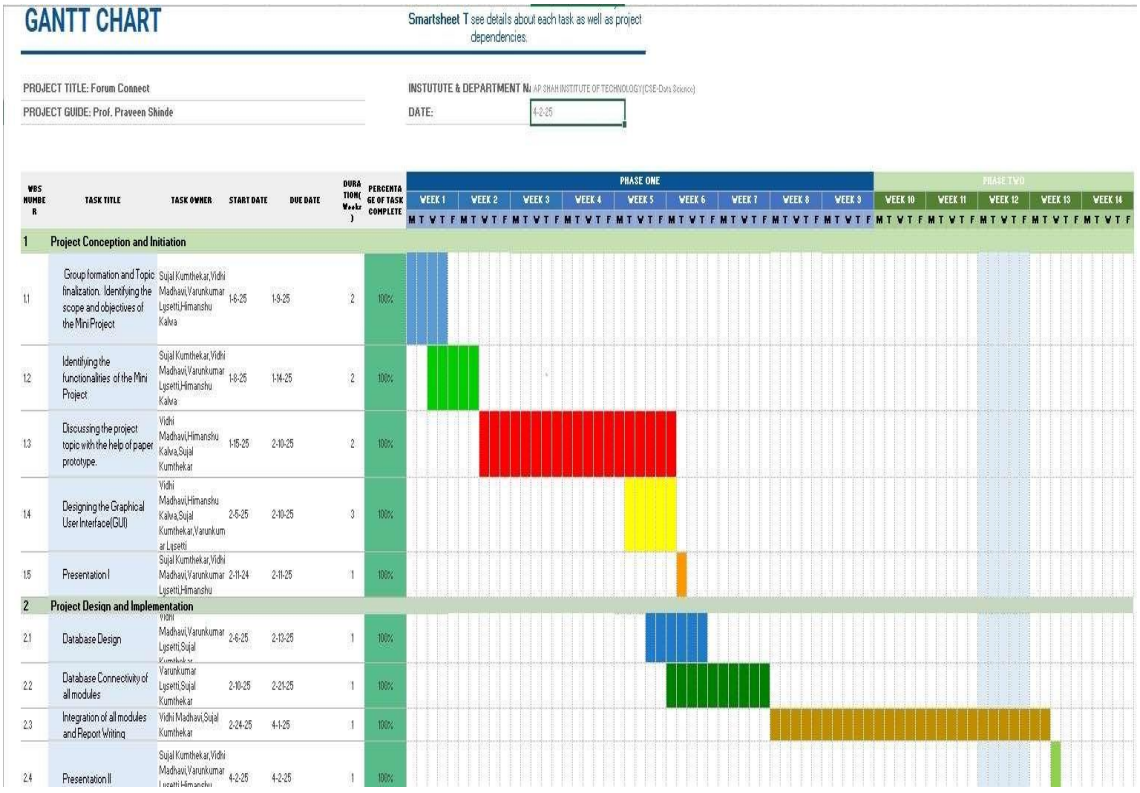


Fig.6.1.Gantt Chart

Chapter 7

Results

The implementation of the Discussion Forum Management System resulted in several key improvements that enhanced the overall user experience and operational efficiency. The system streamlined user registration, login, and post creation, reducing the time and errors associated with manual processes. It also facilitated easy navigation of posts and comments, enabling users to quickly engage in discussions. The ability to securely store and retrieve data, such as user profiles, posts, and comments, improved overall data management and ensured the integrity of user interactions. Administrators gained enhanced control over user management, allowing for more efficient oversight of activities and better support for forum members. Additionally, the system's ability to track and organize user-generated content led to more meaningful discussions, fostering greater community engagement. These outcomes collectively contributed to a more efficient and user-friendly forum platform

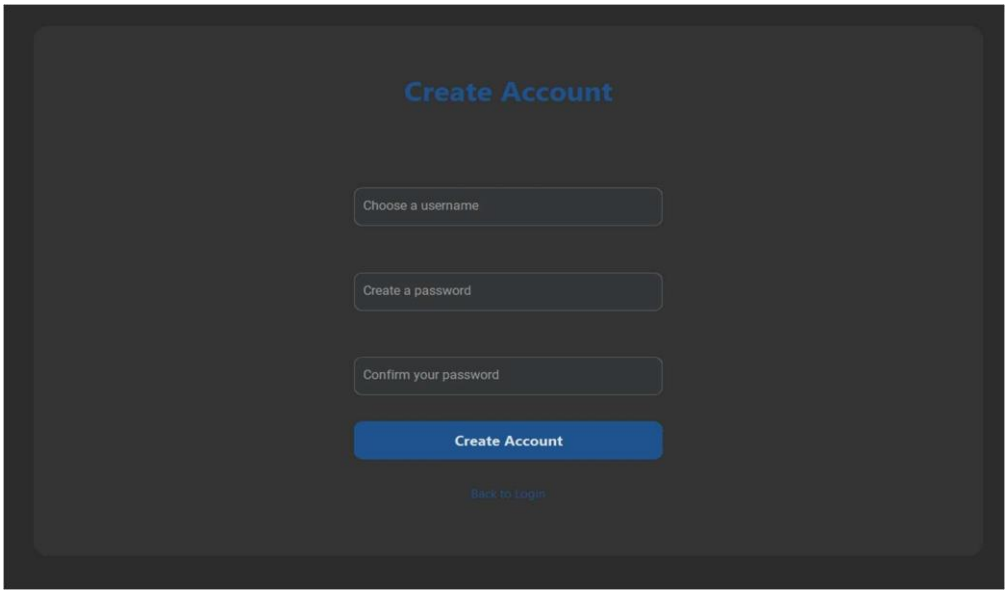


Fig.7.1.Create Account

In above figure 7.1 the signup page for Disscussion forum .It features three input fields Username, Password and conform password to create a new account. There is a signup button

to save the details ,back button to go to welcome page and a login button to go to login page if user already have an account.

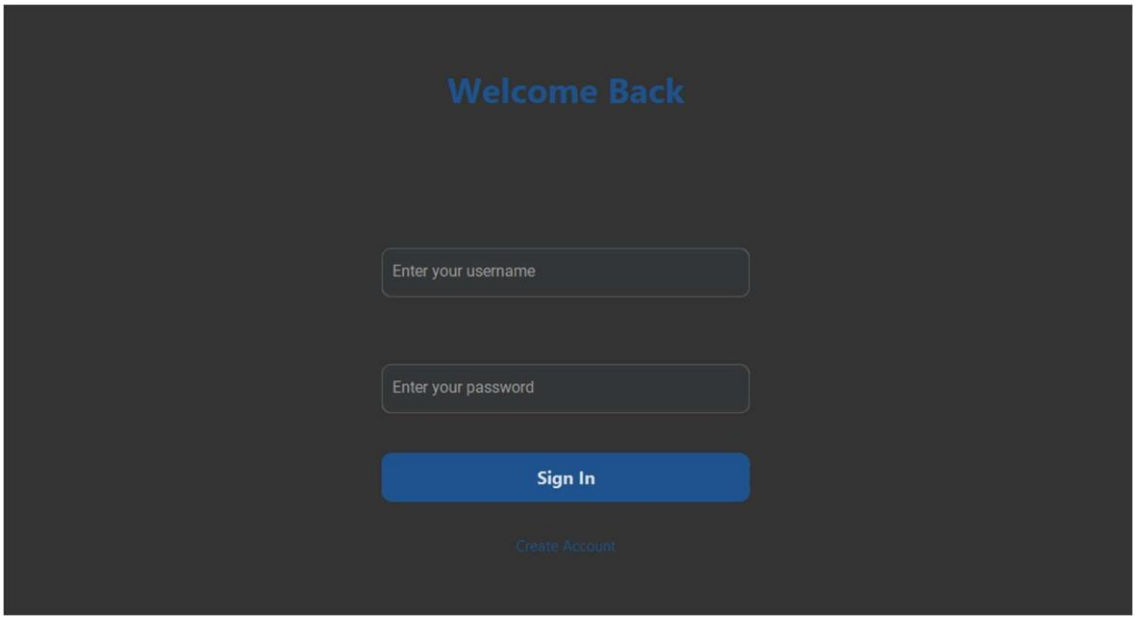


Fig 7.2.Login page

In above figure 7.2 the login page for Disscussion forum. It features two input fields Username and Password to login.There is a login button to go to main page and a back button to go to welcome page.

Fig 7.3 Main Page

Figure 7.3 shows main page of Disscussion forum which has my posts all posts travel buddy new posts view notification and logout.

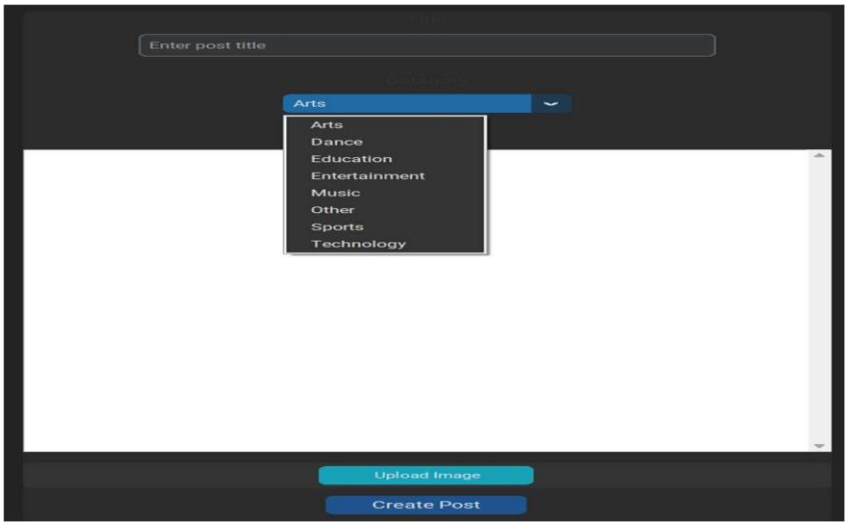


Fig 7.4 New posts page

Figure 7.4 has Three input category title and content which will create a new posts user can also attach image on posts.

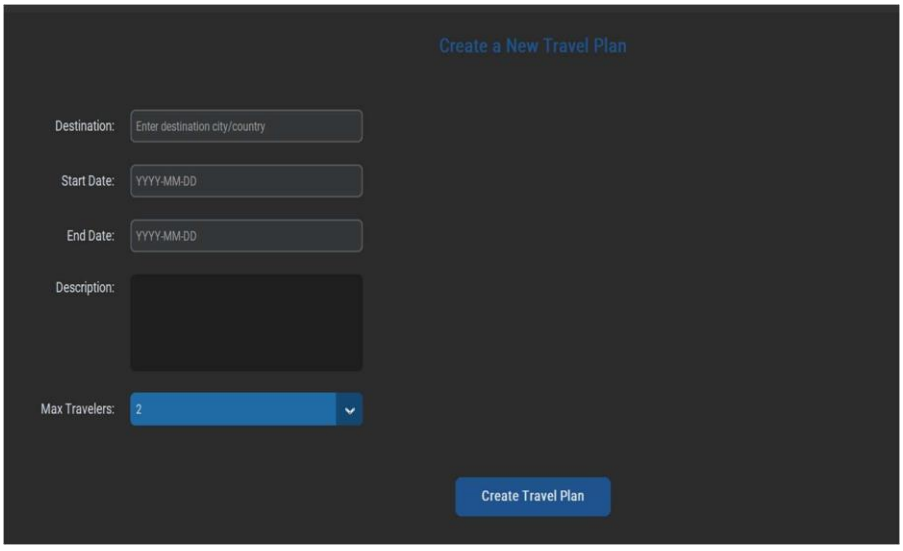
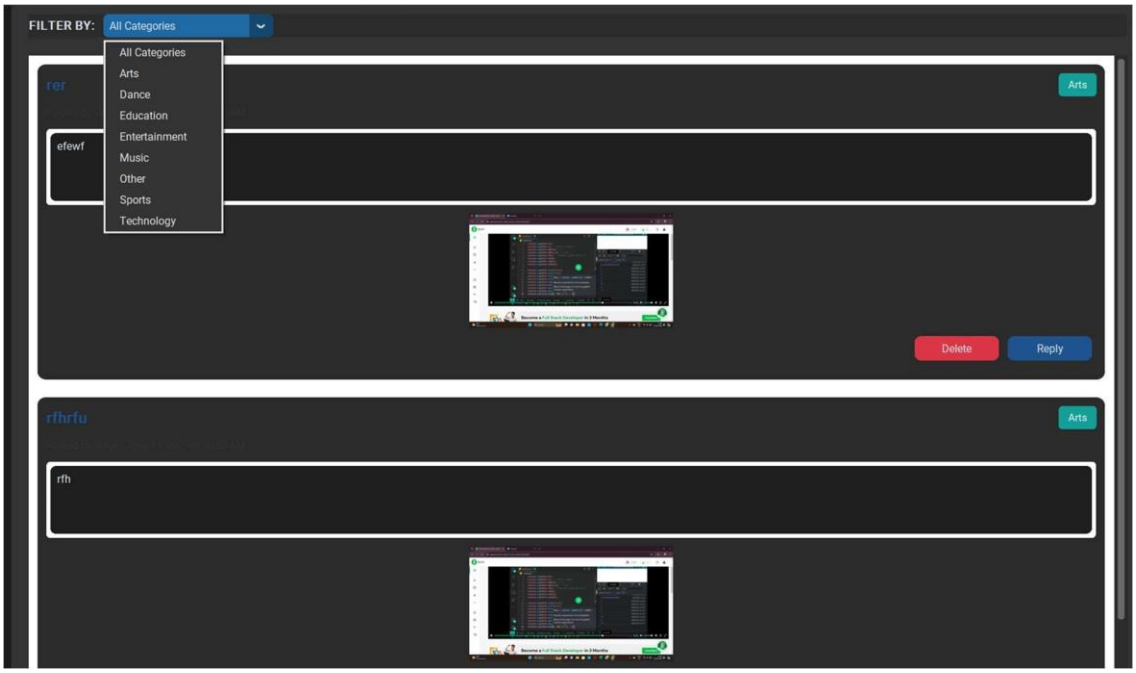


Figure 7.5 Travel Buddy

Figure 7.5 shows travel buddy page where users can create travel posts and other users can show interest on travel post and can travel together.



7.6 My Posts

Figure 7.6 shows My posts page of discuss forum. It shows User created posts.

Chapter 8

Conclusion

In conclusion, this discussion forum application effectively combines Tkinter for the graphical user interface and MySQL for backend database management, offering a simple yet functional platform for user interaction. Tkinter provides an intuitive interface for browsing posts and engaging in discussions, while MySQL ensures efficient storage and retrieval of user data and content. Though the current version is basic, it forms a strong foundation for future enhancements, such as user authentication, post categorization, and search functionality. This project showcases key skills in database management, GUI design, and user interaction, demonstrating the potential of Python, Tkinter, and MySQL to create interactive, data-driven applications

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