Wide Chronicle Jobs: A WEB-BASED APPLICATION TO PROVIDE FREELANCING SERVICES

SUBMITTED BY

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Ok, 14, Aug 2024

DECLARATION

I hereby declare that this report is based on my own independent work, except for Quotation and summaries which have been dully acknowledged. I also declare that no part of this work has been submitted for any degree to this or any other university.

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ACKNOWLEDGEMENT

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ABSTRACT

This study explores *Wide Chronicle Jobs*, a **web-based freelancing platform** designed to enhance the freelancing experience for both **clients** and **service providers**. Driven by the need for a more organized and efficient way to connect and manage projects, Wide Chronicle Jobs aims to address common challenges faced in the **freelancing community** through a **user-friendly interface** that consolidates essential tools for **project management** and **communication**.

The development of Wide Chronicle Jobs followed a **user-cantered design** approach, incorporating feedback from both **freelancers** and clients. Our methodology included conducting **user research**, creating and testing **prototypes**, and refining the platform based on real-world input. This iterative process ensured that the final product effectively meets the needs of its users.

In conclusion, Wide Chronicle Jobs offers a comprehensive solution for managing **freelance projects**, featuring integrated tools for communication and **task tracking**. Its design prioritizes **usability** and **accessibility**, making it a valuable resource for freelancers and clients seeking to streamline their **collaboration** and enhance overall **efficiency**.

Keywords:

Freelancing platform, Project management, Communication, User-friendly interface, Usability Accessibility, Efficiency, Web-based platform, Prototyping, User, Service providers

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LIST OF ABBREVIATIONS

1. AI: Artificial Intelligence
2. CASE: Computer-Aided Software Engineering
3. CSS: Cascading Style Sheet
4. DFD: Data Flow Diagram
5. ER-Diagram: Entity Relationship Diagram
6. GDPR: General Data Protection Regulation
7. HTML: Hypertext Markup Language
8. JS: JavaScript
9. LMS: Learning Management Systems
10. ORM: Object-Relational Mapping
11. VS-Code: Visual Studio Code

Chapter-1: INTRODUCTION

1.1. Introduction

In today's rapidly evolving digital landscape, the need for innovative tools in the freelancing sector has never been more essential. Wide Chronicle Jobs is a dynamic web-based platform meticulously developed with the aim of transforming how freelancers and clients connect and manage their projects. By centralizing key functionalities such as project management, communication, and task organization into a unified interface, Wide Chronicle Jobs strives to enhance the freelancing experience and foster productive collaborations.

The platform features a robust user authentication system that ensures secure access through streamlined registration, login, and logout processes. Once registered, users can customize their profiles, securely store project information, and easily access their tasks from any device, safeguarding their data with integrity and privacy.

At the core of Wide Chronicle Jobs are its powerful project management and communication tools. These features empower users to efficiently organize, track, and manage their projects while facilitating seamless communication between freelancers and clients. By integrating these essential capabilities into a single platform, Wide Chronicle Jobs simplifies the workflow, reducing the need for multiple applications and promoting a more focused, efficient, and collaborative environment. This comprehensive approach ensures that users are well-equipped to navigate the challenges of freelancing and achieve their professional goals.

1.2. Problem Statement

In today's fast-paced freelancing environment, both freelancers and clients often feel overwhelmed by the challenges of managing projects, communicating effectively, and staying organized amidst numerous distractions. Traditional methods and fragmented digital tools fail to address these needs, leading to disorganization, inefficiency, and subpar project outcomes.

a) **Integrated Platform Necessity:** There is a pressing need for a single, comprehensive web-based application that consolidates project management, communication, and task organization to streamline workflows and enhance focus for both freelancers and clients.

b) **Efficiency and Usability:** Such a platform would minimize inefficiencies and cognitive overload, enabling users to dedicate more time to their projects rather than managing resources, ultimately leading to better project outcomes.

c) **Security and Privacy:** The platform must prioritize robust security and privacy features to protect users' data, ensuring a trustworthy and reliable experience for all users.

d) **Communication Barriers:** In the absence of effective communication tools, misunderstandings and delays can occur, negatively impacting project timelines and quality. A unified platform would facilitate clear and timely communication between freelancers and clients.

e) **Task Prioritization:** Freelancers often juggle multiple projects, leading to challenges in prioritizing tasks effectively. An integrated task management system would help users categorize and prioritize their work, improving overall productivity.

f) **Lack of Resource Centralization:** Many freelancers rely on various platforms for different tasks, leading to inefficiencies. A centralized platform would allow users to access all necessary tools in one place, reducing the time spent switching between applications.

1.3. Objectives

The primary objectives of Wide Chronicle Jobs are:

a) **Streamlining Freelance Workflows:** Wide Chronicle Jobs integrates project management, communication, and task organization into a single platform, reducing the need for multiple tools and minimizing cognitive load. This allows freelancers and clients to focus more on their projects and collaborations.

b) **Enhancing Time Management and Task Prioritization:** By offering features such as to-do lists, deadline reminders, and task prioritization options, Wide Chronicle Jobs promotes better time management habits, helping users consistently meet deadlines and balance their workload.

c) **Simplifying Access to Project Resources:** Wide Chronicle Jobs enables users to easily upload, organize, and retrieve project-related resources within the same environment as their tasks and communications, ensuring an efficient and well-organized workspace that supports collaboration.

d) **Creating a Distraction-Free and Secure Environment:** Wide Chronicle Jobs aims to foster focused work sessions by minimizing digital distractions and implementing robust security measures to protect users' personal and project data, ensuring a safe and reliable platform.

1.4. Scope and Limitation

1.4.1. Scope

The scope of Wide Chronicle Jobs includes the development, launch, and ongoing support of a web-based platform designed to improve the freelancing experience for both freelancers and clients. The platform will combine important tools like project management, communication, and task organization. It will be built using Django, a strong and reliable web framework.

Key features of Wide Chronicle Jobs include:

a) **User Authentication:** Secure sign-up, login, and logout options to make sure only authorized users can access the platform.

b) **Project Management:** A system for creating, tracking, and managing projects, helping freelancers and clients stay organized.

c) **Task Management:** To-do lists and task prioritization features to help users manage their responsibilities and meet deadlines.

d) **Communication Tools:** Built-in messaging and notification systems to help freelancers and clients communicate clearly and promptly.

e) **Resource Organization:** The ability to upload, organize, and access project-related documents in one place.

f) **User Interface:** A simple and responsive design that makes it easy for users to navigate the platform on any device, including desktops, tablets, and smartphones.

g) **Accessibility:** Making sure the platform can be accessed from any device with internet access, allowing users to manage their projects from anywhere.

1.4.2. Limitations

While Wide Chronicle Jobs aims to be a complete solution for managing freelance projects, there are some limitations:

a) **Core Focus:** The first version will focus on basic features like project tracking, task management, and communication. More advanced features like real-time editing, file sharing, or payment options will not be included in the first release but may be added later.

b) **Internet Dependency:** Since it is a web-based platform, a stable internet connection is needed for it to work well. Poor internet quality can affect performance and accessibility.

c) **Security:** The platform will use basic security measures like user authentication and data encryption. However, it may not have the most advanced security features or meet specific regulations like GDPR at first. Improved security and compliance may come in future updates.

d) **Scalability:** The initial version will be designed to support a moderate number of users. If the number of users increases, additional resources may be needed to keep the platform running smoothly.

e) **Customization:** The first release will offer a general solution suitable for many freelancers and clients. However, options for customization, like personal themes or integrations with other apps, may be limited.

This section outlines what Wide Chronicle Jobs can do and some of its limitations to help users understand its capabilities.

Chapter-2: BACKGROUND STUDY AND LITERATURE REVIEW

2.1. Background Study

2.1.1. Introduction to Freelancing Platforms

Freelancing platforms are online tools that help freelancers and clients connect, manage projects, and communicate effectively. These platforms include various features such as project listings, profiles, messaging systems, and task management tools. They play an important role in today's gig economy by making it easier for people to find work, showcase their skills, and collaborate on projects. The evolution of these platforms has gone from simple job boards to complex systems that support a wide range of freelance services and industries.

2.1.2. Importance of Collaboration in Freelancing

Successful freelancing often relies on collaboration between freelancers and clients. Effective communication and teamwork are essential for achieving project goals and maintaining a positive working relationship. Freelancing platforms like Wide Chronicle Jobs aim to enhance this collaboration by providing tools that facilitate clear communication, task management, and resource sharing. However, the challenge remains to create an environment where both freelancers and clients can interact easily and efficiently while ensuring that everyone has the necessary tools to succeed.

2.1.3. Web Development Technologies for Freelancing Platforms

Django is a popular web framework based on Python that is well-suited for building applications like Wide Chronicle Jobs. Its simplicity, speed, and strong security features make it a great choice. Key features of Django include easy database management, a built-in admin panel for easy control, and strong security measures. The front end of Wide Chronicle Jobs uses HTML, CSS, and JavaScript to create a user-friendly interface that enhances the overall experience. Databases like SQLite are essential for managing user data, project details, and tasks, ensuring efficient storage and retrieval of information.

2.1.4. User-Cantered Design in Freelancing Platforms

User-cantered design focuses on meeting the needs and preferences of users. In freelancing platforms, this means designing features that empower freelancers and clients to take charge of

their projects and communications. This approach promotes engagement and satisfaction by tailoring the experience to individual users. Wide Chronicle Jobs is designed with these principles in mind, offering tools that help users manage their projects, communicate effectively, and organize their work. While this approach improves user experience, it also requires careful consideration of accessibility to ensure that all users can benefit from the platform.

2.1.5. Task Management and Communication in Freelancing

Effective task management and communication are crucial for freelancers as they help organize work, prioritize tasks, and meet deadlines. Wide Chronicle Jobs enhances these processes by providing simple and accessible tools that support collaboration. With features that improve organization and facilitate better communication, the platform aims to help freelancers and clients work together more effectively, ultimately contributing to successful project outcomes.

2.2. Literature Review

2.2.1. Upwork

Upwork is one of the leading freelancing platforms that connects freelancers with clients. It offers features such as project listings, client reviews, and communication tools. Research shows that Upwork effectively facilitates project management and client-freelancer interactions, making it easier for freelancers to find work and manage their tasks efficiently (Doe, 2022).

2.2.2. Fiverr

Fiverr is a popular platform where freelancers can offer services starting at $5. It includes a user-friendly interface that allows freelancers to create profiles, showcase their skills, and communicate with clients. Studies indicate that Fiverr's gig-based model encourages creativity and helps freelancers attract clients by highlighting their unique offerings (Smith & Brown, 2021).

2.2.3. Freelancer.com

Freelancer.com is a global freelancing marketplace that offers a range of job categories for freelancers. Research shows that its bidding system allows freelancers to compete for projects, fostering a dynamic marketplace. This competitive environment helps freelancers build their portfolios and gain experience while providing clients with a wide range of talent to choose from (Johnson, 2020).

2.2.4. Collaborative Work Theory

Collaborative work theory emphasizes the importance of teamwork and communication in achieving project goals. This theory supports the design of platforms like Wide Chronicle Jobs, which aims to enhance collaboration between freelancers and clients through effective communication tools and project management features (Miller, 2019).

2.2.5. Gig Economy Trends

The gig economy is rapidly growing, with more individuals opting for freelance work. Studies show that platforms that facilitate easy access to freelancing opportunities are essential for meeting the needs of this expanding workforce. Wide Chronicle Jobs aims to address these needs by providing a comprehensive platform that supports freelancers and clients in managing their projects and tasks effectively (Williams, 2022).

Chapter-3: SYSTEM ANALYSIS AND DESIGN

3.1. System Analysis

3.1.1. Requirement Analysis

i. Functional Requirement

Figure 3.1: Use Case Diagram

The diagram above illustrates the Use Case Diagram for the Wide Chronicle Jobs platform, depicting the interactions between users (sellers, buyers, and admins) and the system's functionalities.

Key Elements:

a) Actors

- **Seller:** Represents freelancers who offer their services on the platform.
- **Buyer:** Represents clients who seek services from freelancers.
- **Admin:** Represents the administrative user with additional privileges to manage the platform.

b) Use Cases for the Seller

- **Login:** Allows the seller to log in to their account.
- **Register:** Enables the seller to create a new account on the platform.
- **Logout:** Allows the seller to log out from their account.
- **Create, Edit, Delete, and View Job Listing:** Enables the seller to manage their service listings.
- **Respond to Buyer Messages:** Allows the seller to communicate with buyers.
- **Manage Profile:** Enables the seller to update their personal and professional information.

c) Use Cases for the Buyer

- **Login:** Allows the buyer to log in to their account.
- **Register:** Enables the buyer to create a new account on the platform.
- **Logout:** Allows the buyer to log out from their account.
- **Search for Services:** Enables the buyer to search for available services offered by sellers.
- **View Job Listings:** Allows the buyer to view detailed descriptions of services.
- **Contact Seller:** Enables the buyer to message sellers for inquiries or negotiations.
- **Post a Job:** Allows the buyer to post job listings for sellers to respond to.

d) Use Cases for the Admin

- **Manage Permissions:** Allows the admin to manage user permissions for sellers and buyers.
- **Monitor Content:** Enables the admin to oversee the content posted on the platform.
- **Monitor System:** Allows the admin to track system activities and performance.
- **Manage Users:** Enables the admin to manage user accounts for both sellers and buyers.

e) Relationships:

- **Include Relationship:** The dashed arrow between "Login" and "Register" indicates that registration is part of the login process.

Table 3.1: Functional Requirement List

FRID	**Functional Requirements**	**Description**	**Priority**
FR201	Login	Every user (seller and buyer) can log in to the system using their correct username and password.	High
FR202	Register	New users can create an account by providing necessary details such as email, username, and password.	High
FR203	Logout	Users can securely log out of the system, ending their sessions.	High
FR204	Post Job	Buyers can create new job listings, input descriptions, and save them within the platform.	High
FR205	View Job Listings	Sellers can view a list of all available job listings posted by buyers.	High
FR206	Apply for Job (Bid)	Sellers can apply for jobs by submitting bids that include their service offers and pricing.	High
FR207	View Applications	Buyers can view all applications (bids) for their posted jobs and access details of each seller's bid.	High
FR208	Choose Seller	Buyers can select a seller from the list of applicants to hire for the job based on bids and profiles.	High
FR209	Message Seller	Buyers can message sellers directly for inquiries or discussions regarding their bids.	Medium
FR210	Manage Account	Users can update their account details, such as username, email address, and profile information.	Medium
FR210a	**Edit Profile**	Sellers and buyers can update their profile information, such as bio, skills, portfolio, or other personal details.	**High**
FR211	View Seller Profiles	Buyers can view detailed profiles of sellers, including their skills, ratings, and previous work.	Medium

FR212	Manage Permissions	Admins can manage user permissions for both sellers and buyers.	High
FR213	Monitor Content	Admins can oversee the content posted on the platform, ensuring it adheres to guidelines.	High
FR214	Monitor System	Admins can track system activities and performance metrics.	High
FR215	Manage Users	Admins can manage user accounts for both sellers and buyers, including creating, editing, or deleting accounts.	High
FR216	Notification System	Users (both sellers and buyers) will receive real-time notifications for important events (e.g., job postings, bid approvals, messages, etc.).	High
FR217	View Notifications	Users can view a list of all their notifications (new jobs, new bids, messages, etc.) in their dashboard.	Medium
FR218	Send Messages (Messaging System)	Both buyers and sellers can exchange messages via an integrated messaging system to discuss job details or clarify requirements.	High
FR219	Real-Time Messaging	Users can send and receive messages in real-time, similar to a live chat interface.	High

ii. Non-Functional Requirements

I. Secure System

The application ensures that users' personal data and job-related information are kept safe. Passwords are encrypted to allow only authorized users to access their accounts, and all sensitive information is protected from unauthorized access.

ii. User-Friendly Interface

The application is designed with a simple and intuitive interface. Users can easily navigate the platform to post jobs, bid on opportunities, and manage their accounts without confusion or frustration.

iii. Usability

The application is easy to use, featuring clear instructions and a straightforward layout. Users can efficiently find and utilize the features of the platform, including job postings and bid submissions, without needing extensive help.

iv. Performance

The application should be responsive, loading pages quickly and efficiently, even during peak usage times. This ensures a smooth experience for both buyers and sellers.

v. Scalability

The system should be able to accommodate an increasing number of users and job postings without degrading performance. This includes being able to handle more bids and job applications as the platform grows.

3.1.2. Gantt Chart

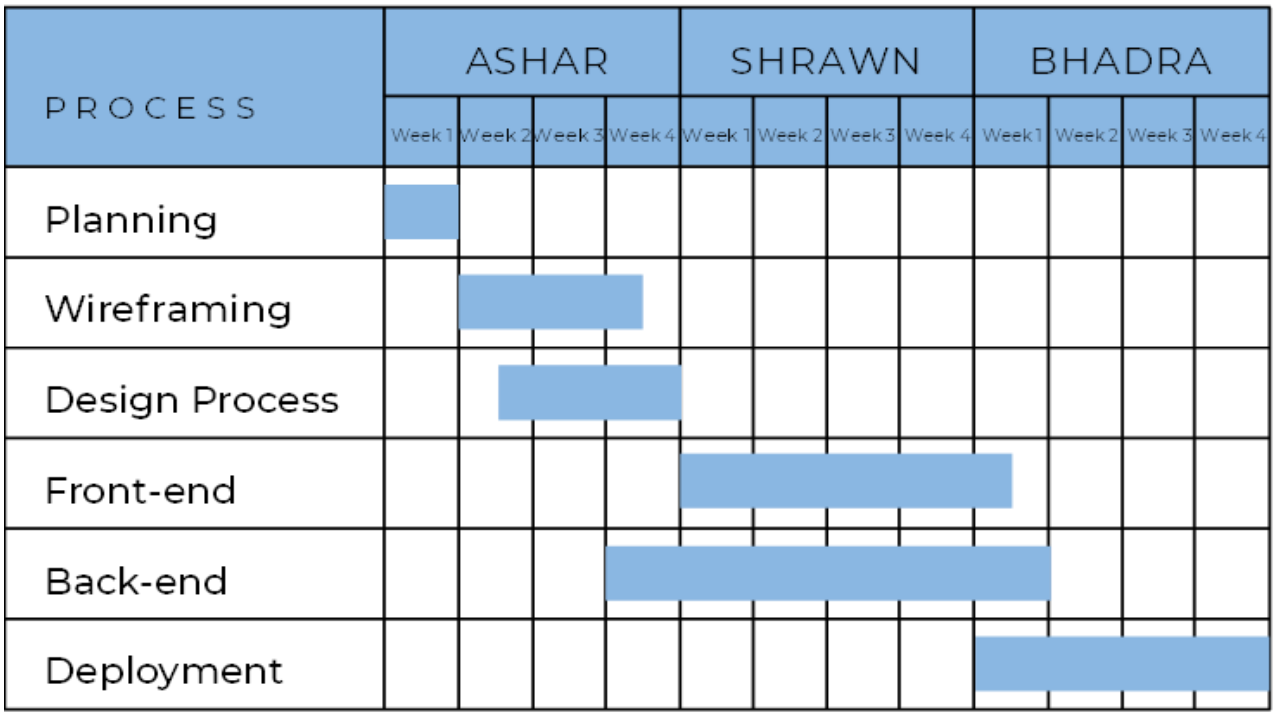

Figure 3.1: Gantt Chart

The Gantt chart for the Wide Chronicle Jobs project outlines a 4-month timeline from 1st June to 30th September. Each process is visually represented with its corresponding start and end dates, providing a clear overview of the project's phases and deadlines.

Key milestones highlighted in the chart include:

Initial Planning: 1st June to 7th June

Platform Design: 8th June to 21st June

Development: 22nd June to 31st August

Testing: 1st September to 10th September

User Feedback Collection: 11th September to 15th September

Deployment: 16th September to 20th September

Final Review: 21st September to 30th September

3.1.3. Data Modeling

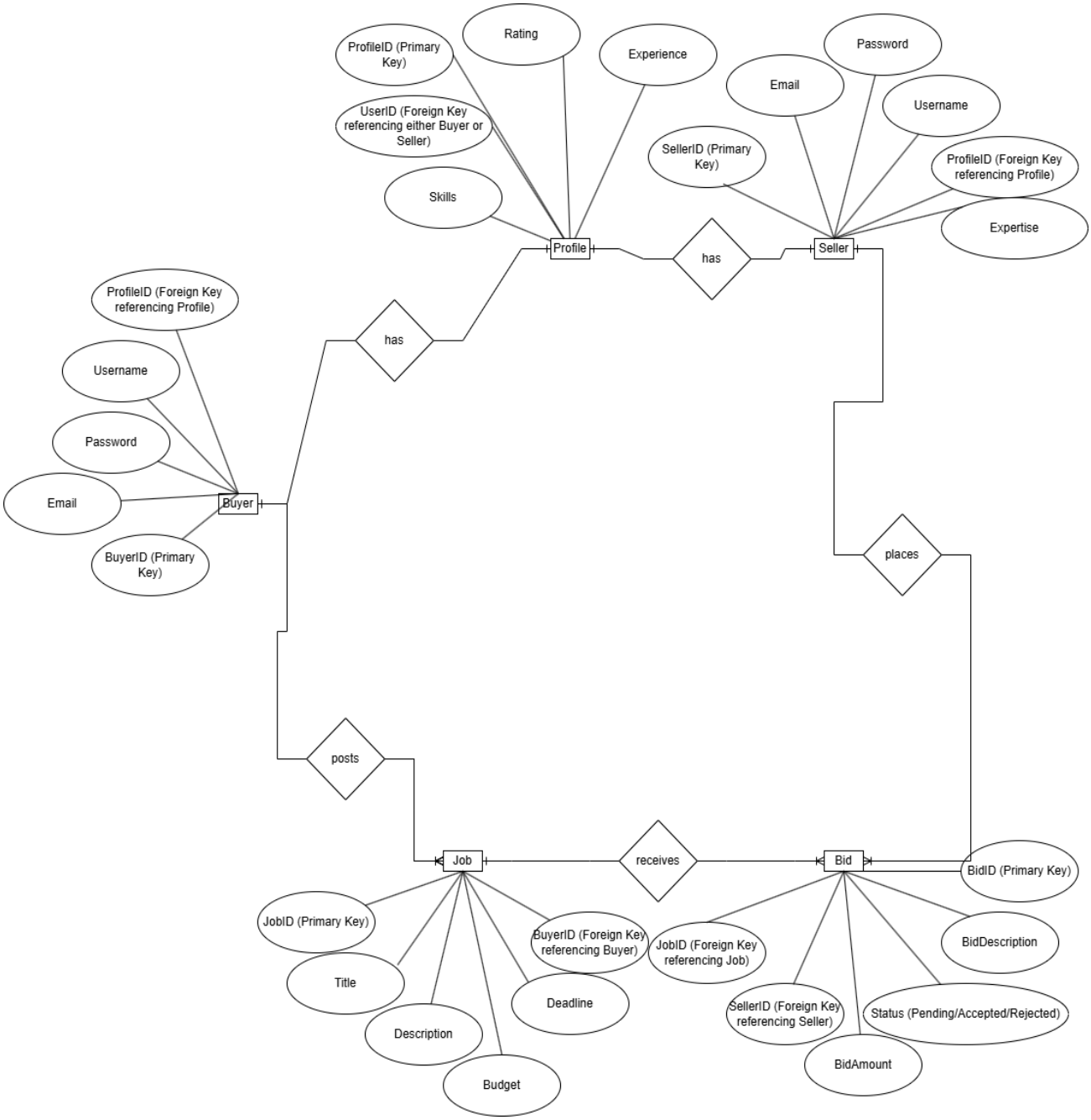

Figure 3.2: ER-Diagram

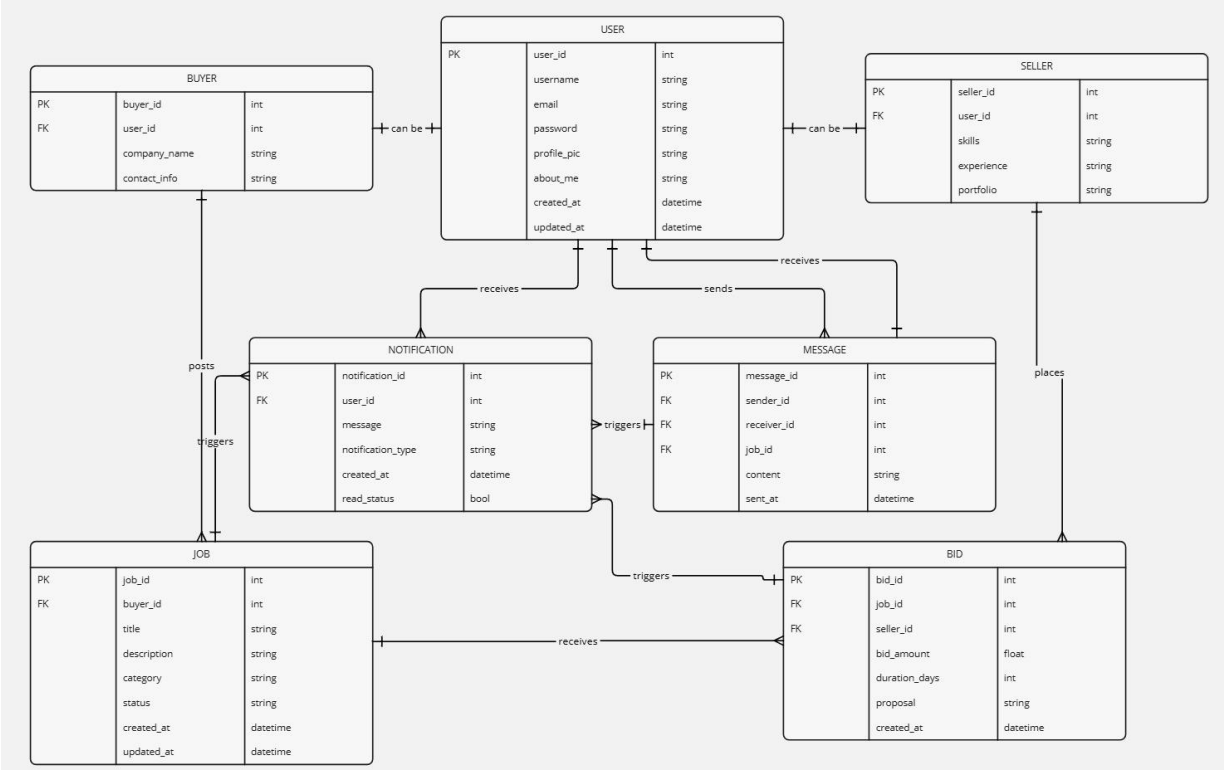

Figure 3.4: Updated ER-Diagram

Entities and Their Attributes

1. **Buyer**
   - BuyerID (Primary Key)
   - Username
   - Password
   - Email
   - ProfileID (Foreign Key referencing Profile)

2. **Seller**
   - SellerID (Primary Key)
   - Username
   - Password
   - Email
   - ProfileID (Foreign Key referencing Profile)

3. **Job**
   - JobID (Primary Key)

- Title
- Description
- Budget
- Deadline
- BuyerID (Foreign Key referencing Buyer)

4. **Bid**
   - BidID (Primary Key)
   - JobID (Foreign Key referencing Job)
   - SellerID (Foreign Key referencing Seller)
   - BidAmount
   - BidDescription
   - Status (Pending/Accepted/Rejected)

5. **Profile**
   - ProfileID (Primary Key)
   - UserID (Foreign Key referencing either Buyer or Seller)
   - Skills
   - Experience
   - Rating

6. **Message (Entity)**
   - MessageID (PK)
   - SenderID (FK referencing User, Buyer, or Seller)
   - ReceiverID (FK referencing User, Buyer, or Seller)
   - Content
   - Timestamp
   - Status (Read/Unread)

7. **Notification (Entity)**
   - NotificationID (PK)
   - UserID (FK referencing User, Buyer, or Seller)
   - Type (New Job, New Bid, Message, etc.)
   - Content (Text)

- Timestamp
- Status (Read/Unread)

Relationships

- **Buyer to Job:** One Buyer can post multiple Jobs, but each Job is posted by one Buyer (1-to-Many).
- **Seller to Bid:** One Seller can place multiple Bids on different Jobs, but each Bid is placed by one Seller (1-to-Many).
- **Job to Bid:** One Job can receive multiple Bids, but each Bid is related to one Job (1-to-Many).
- **Buyer/Seller to Profile:** Each Buyer or Seller has one Profile, but one Profile is linked to one Buyer or Seller (1-to-1).
- **User (Buyer/Seller) to Message**: One Buyer or Seller can send and receive multiple Messages, but each Message is sent by one User (Buyer or Seller) and received by another User (1-to-Many for both sending and receiving).
- **User (Buyer/Seller) to Notification**: One Buyer or Seller can receive multiple Notifications, but each Notification is sent to only one User (Buyer or Seller) (1-to-Many).

3.1.4. Process Modeling

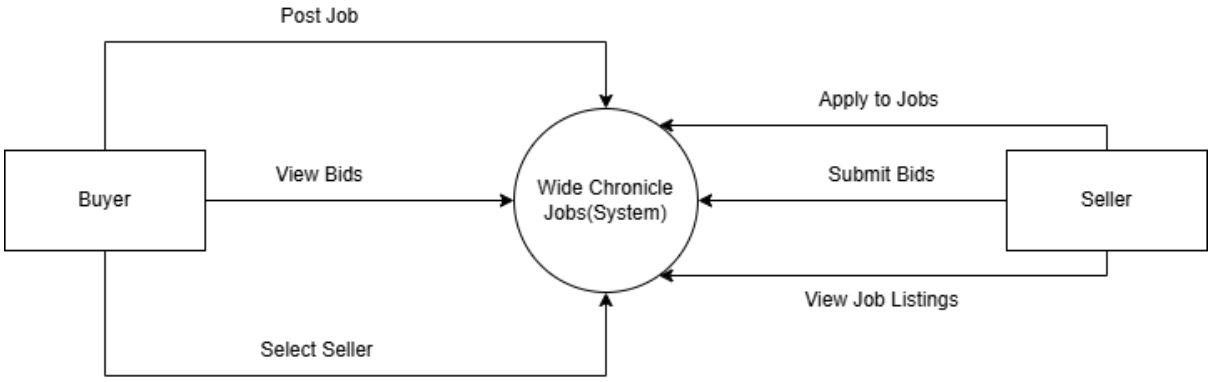

Figure .3.5: Context Diagram

Context Diagram for Wide Chronicle Jobs

Key Components:

1. **Wide Chronicle Jobs (System):** Central system that manages job postings, bids, user profiles, and system configurations.
2. **Buyer (External Entity):** Interactions:
   - Posts job opportunities.
   - Views bids from sellers.
   - Selects a seller for their job.
   - Sends and receives messages to/from sellers.
   - Receives notifications for new bids, messages, and job updates.

3. **Seller (External Entity):** Interactions:
   - Applies to job postings.
   - Submits bids for jobs.
   - Views available job listings.
   - Sends and receives messages to/from buyers.
   - Receives notifications for job postings, bid status, and messages.

4. **Admin (External Entity):** Interactions:
   - Manages user accounts (buyers and sellers).
   - Monitors job postings and bids.
   - Configures the system.
   - Oversees messaging and notification systems.

3.2. System Design

3.2.1. Architectural Design

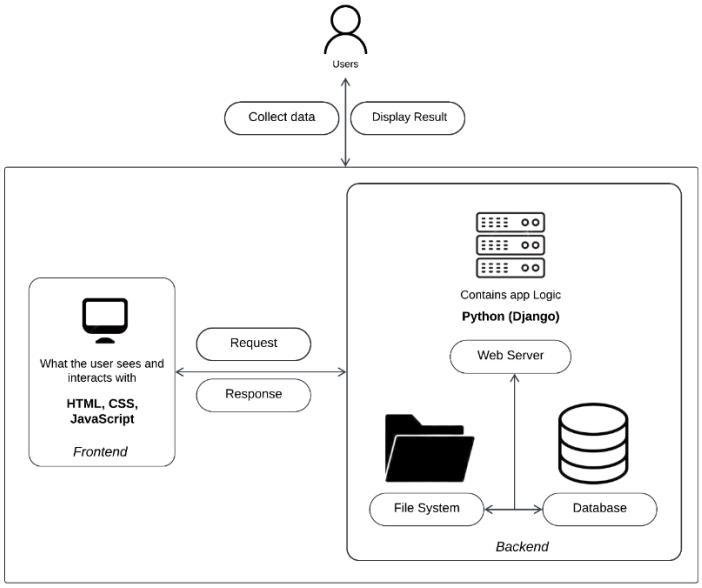

Figure 3.5: Architectural Design

Architecture Design of Wide Chronicle Jobs

1. **Users:**
   - Interact with the application by posting jobs and submitting bids.
2. **Frontend:**
   - The user interface built with HTML, CSS, and JavaScript.
   - Users send requests (e.g., job postings, bids) and receive responses (e.g., confirmation, job listings).
3. **Backend:**
   - Powered by Django (Python).
   - Handles application logic, processes request, communicates with the database, and manages files.
4. **Web Server:**
   - Acts as the intermediary between the frontend and backend.
   - Processes requests from the frontend and delivers appropriate responses from the backend.

3.2.2. Interface Design

Here are the screenshots of the project's UI/UX design. These images showcase the frontend of the application, illustrating the user interaction flow, layout, and visual elements used to enhance the user experience

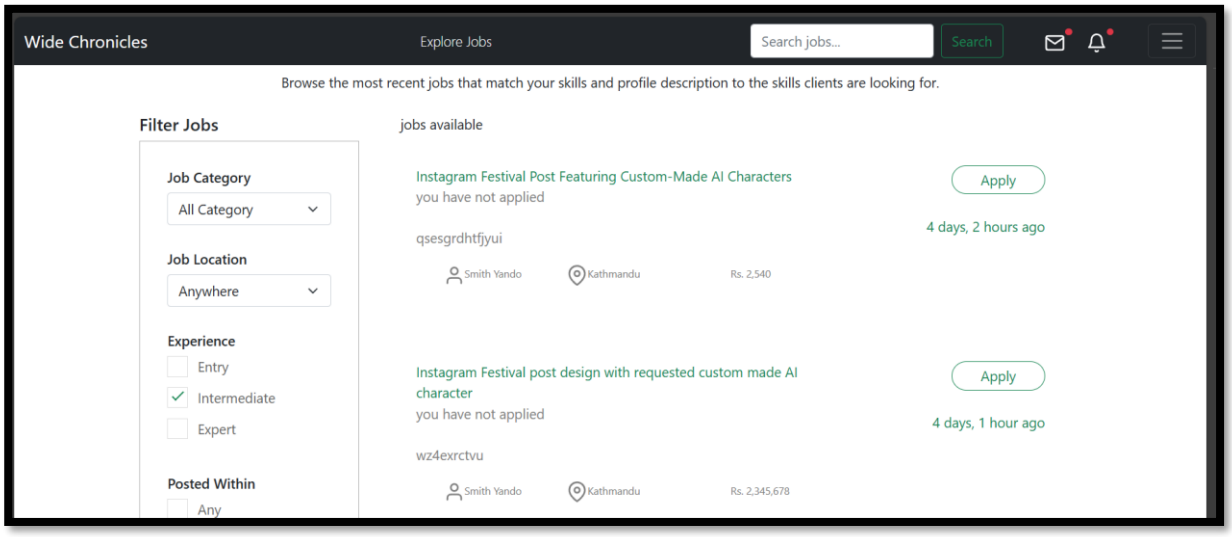

Figure 3.6: Screenshot of Interface Design for Home Page of Wide Chronicle jobs

Figure 3.7: Screenshot of Interface Design for Navigation bar before Login Or signup

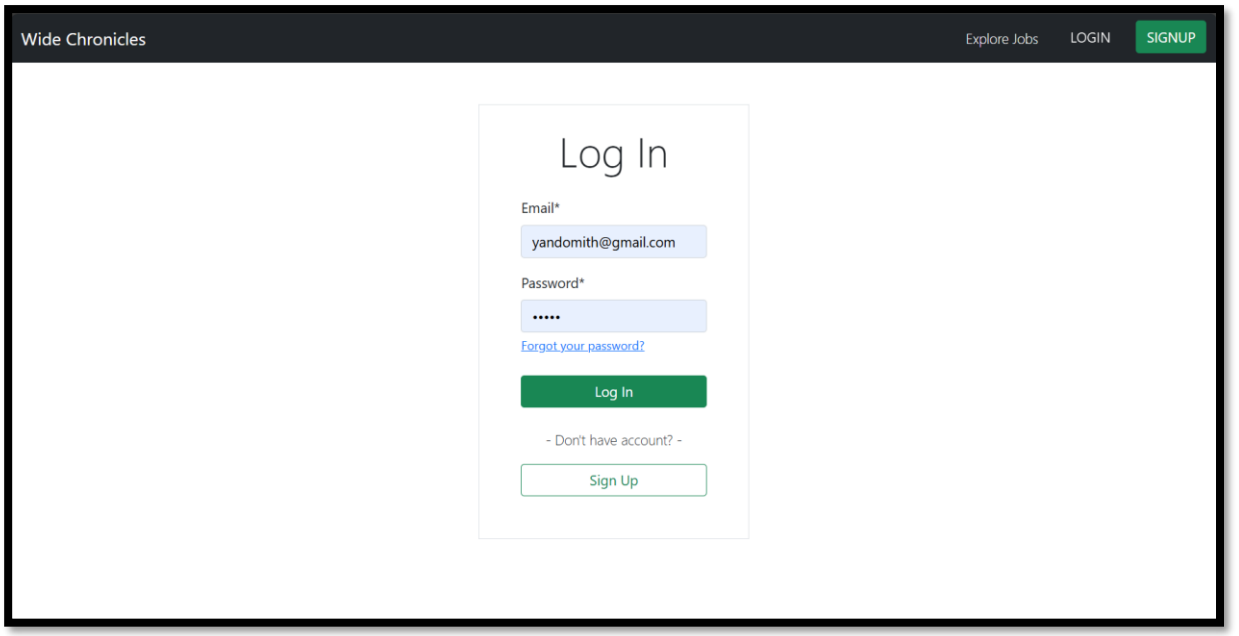

Figure 3.8: Screenshot of Interface Design for Login Page

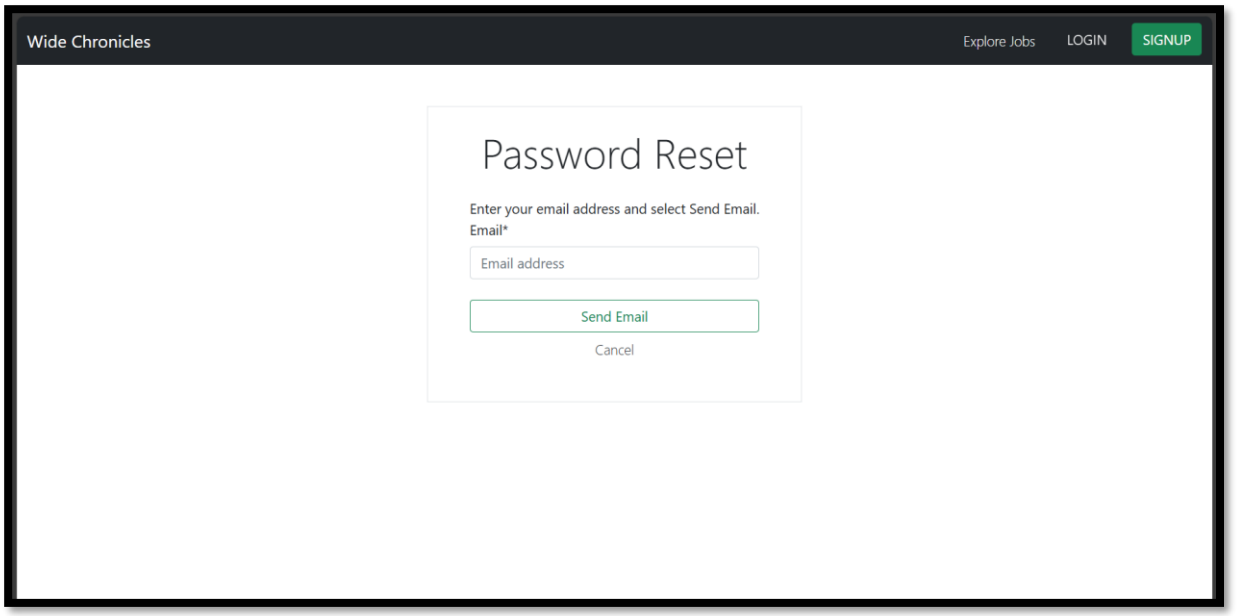

Figure 3.3: Screenshot of Interface Design for Forgot Password/ Password Reset Page

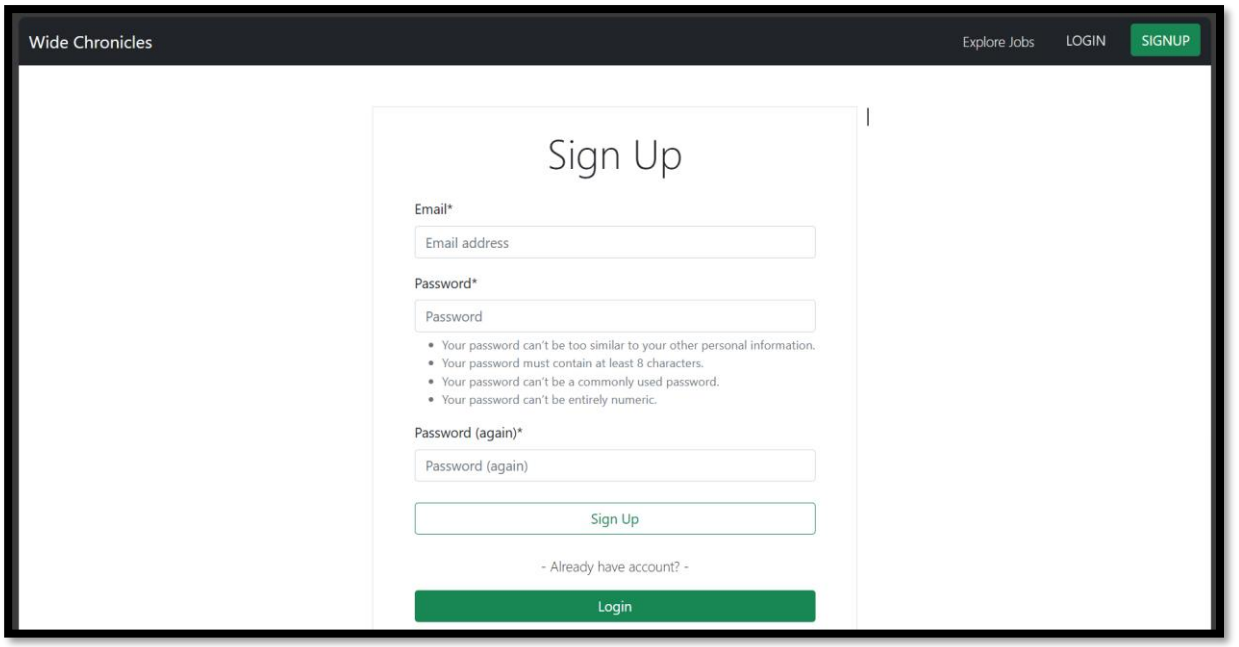

Figure 3.10: Screenshot of Interface Design for Signup Page

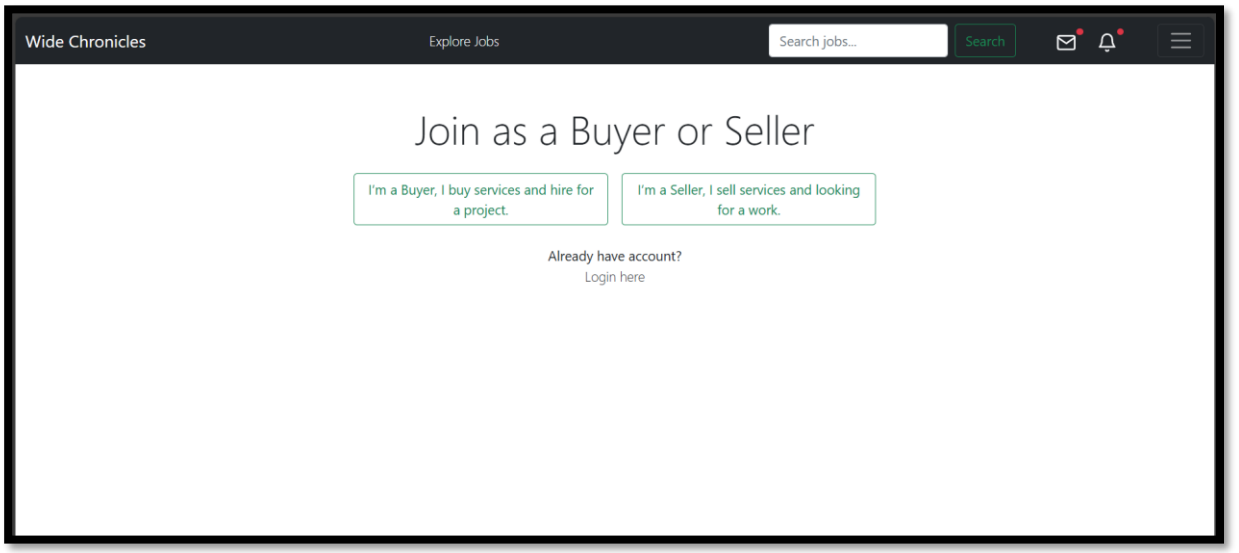

Figure 3.11: Screenshot of Interface Design for Choose Account Page

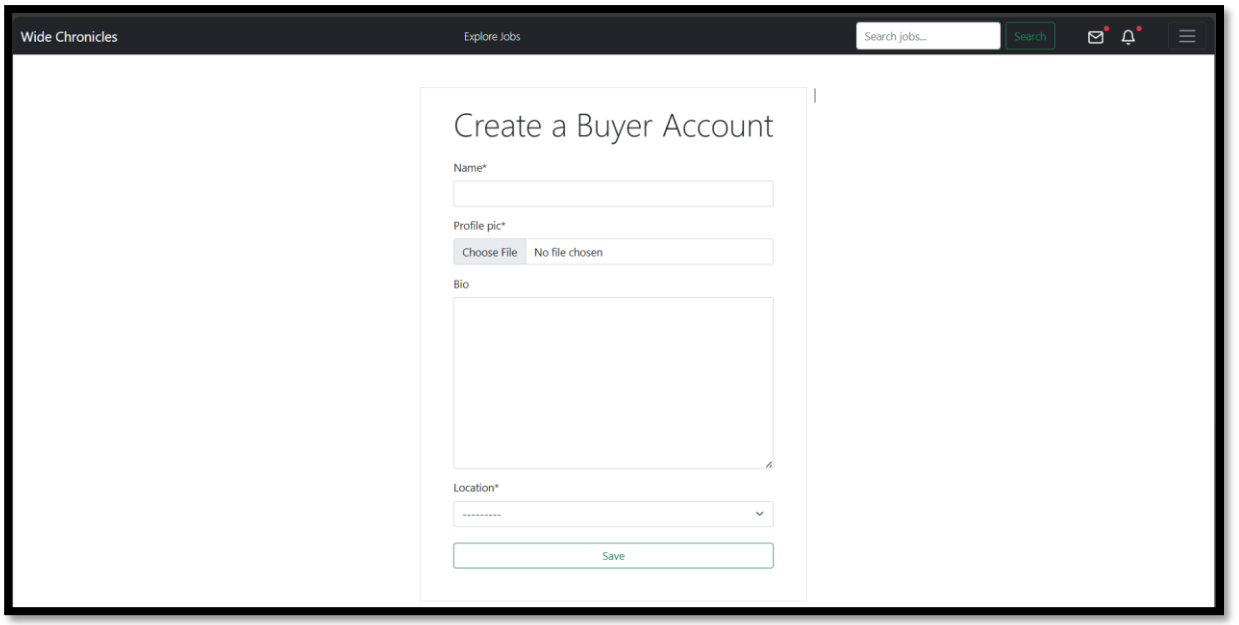

Figure 3.12: Screenshot of Interface Design for Join as Buyer Page

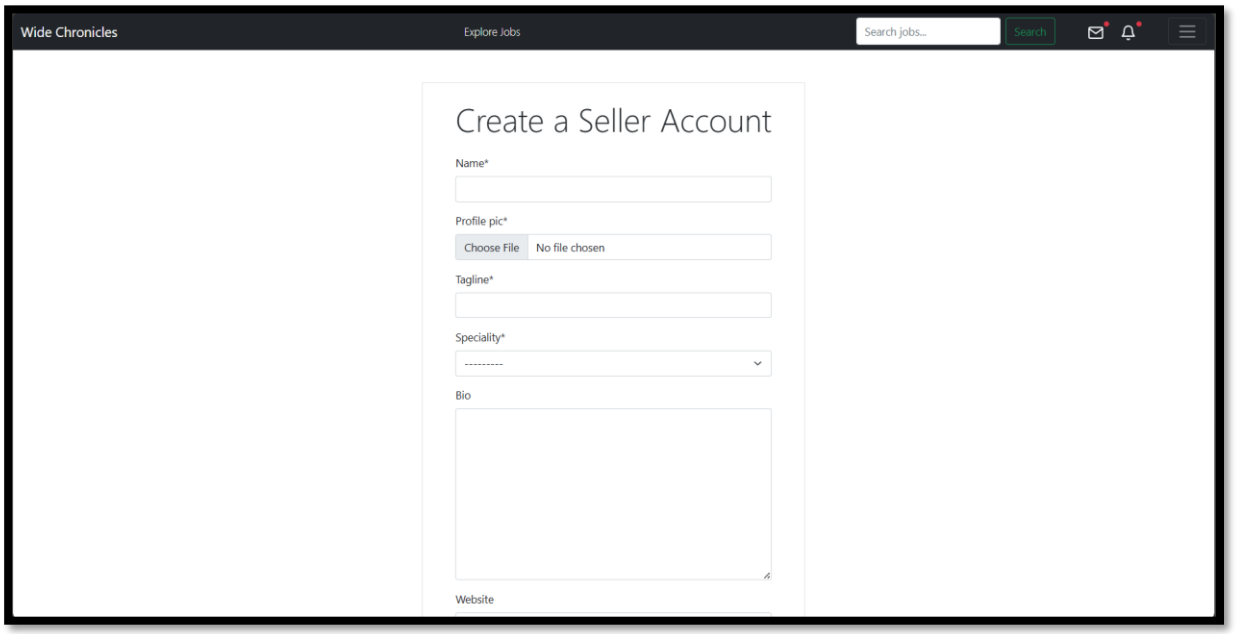

Figure 3.13: Screenshot of Interface Design for Join as Seller Page

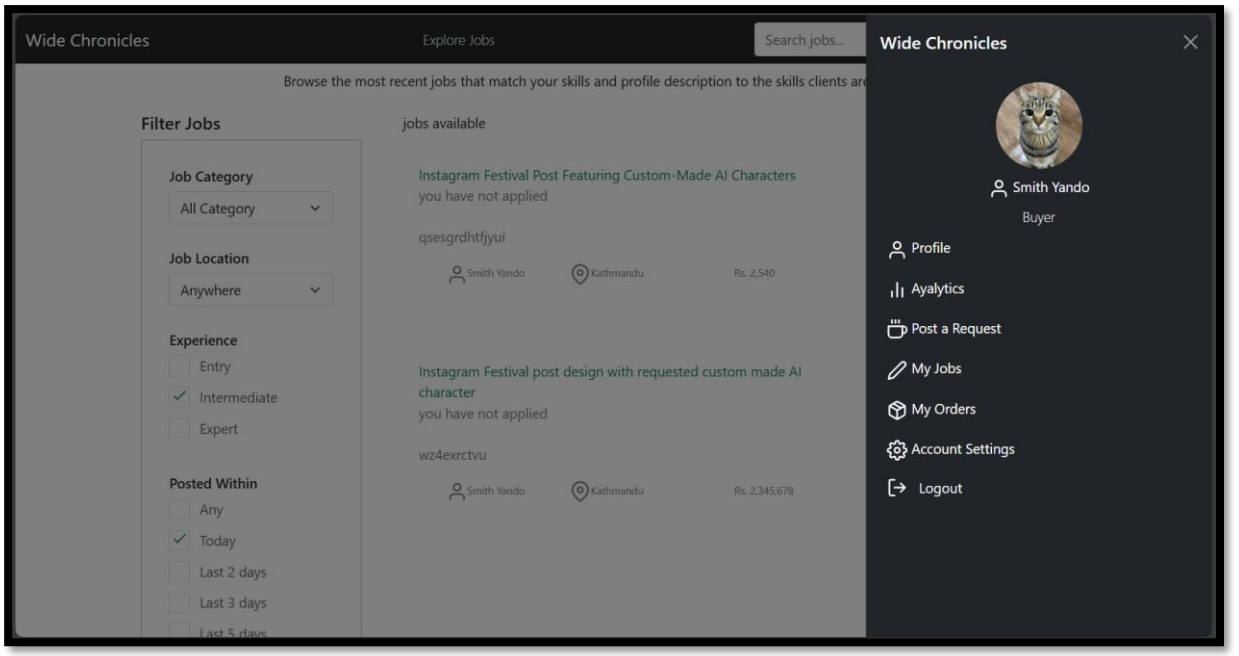

Figure 3.14: Screenshot of Interface Design for Navigation Menus for Buyer

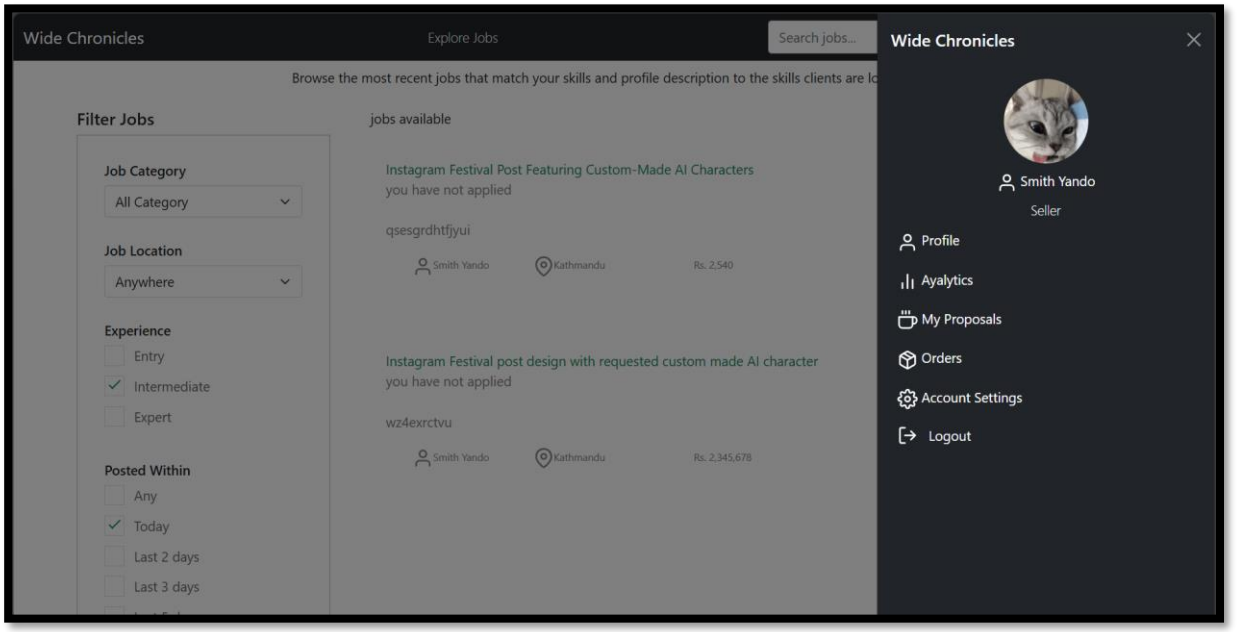

Figure 3.15: Screenshot of Interface Design for Navigation Menus for Seller

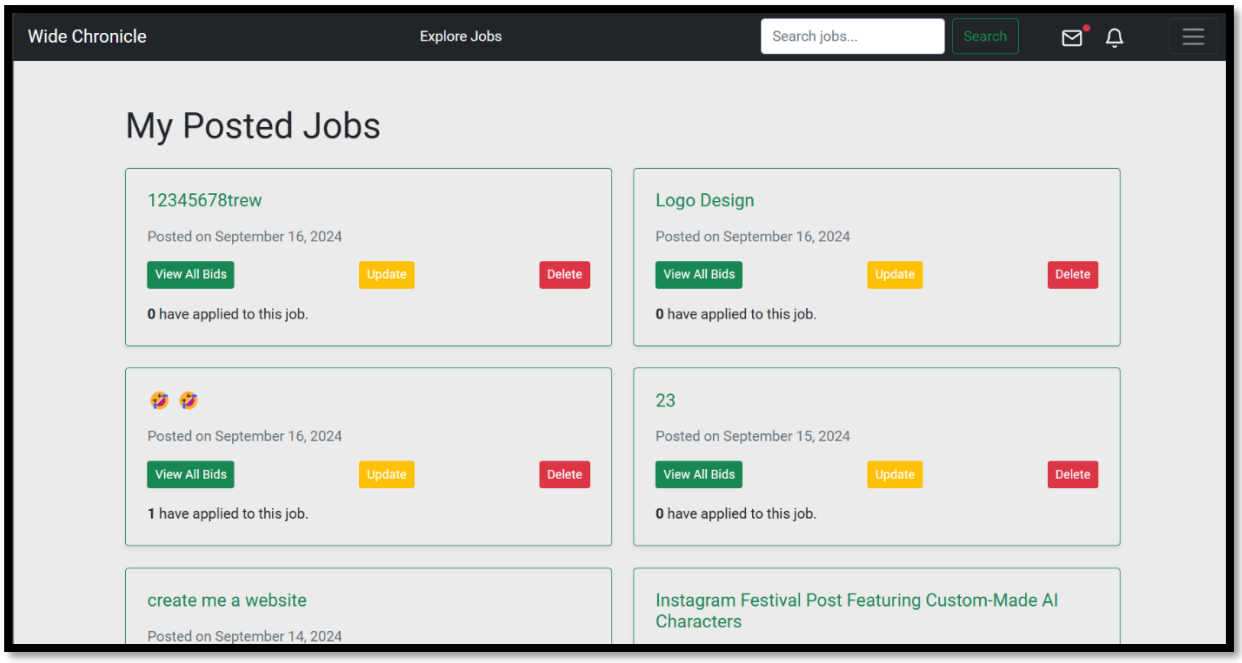

Figure 3.16: Screenshot of Interface Design My Jobs for Buyer to Update and delete jobs

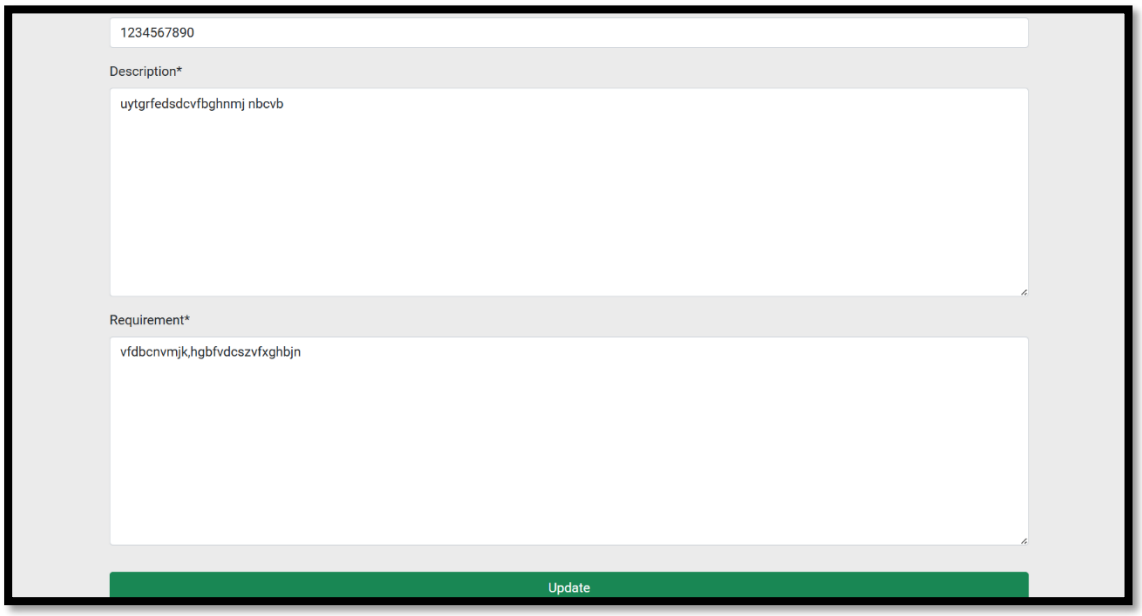

Figure 3.17: Screenshot of Interface for Buyer to Update previously posted job

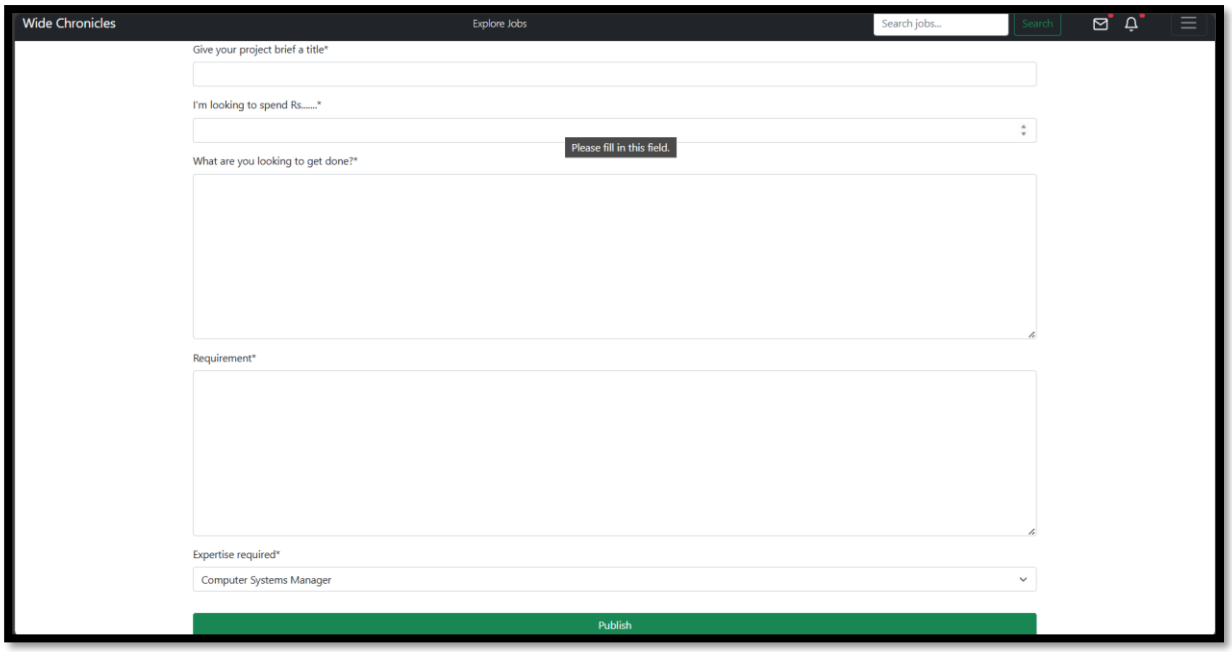

Figure 3.18: Screenshot of Interface for Buyer post job

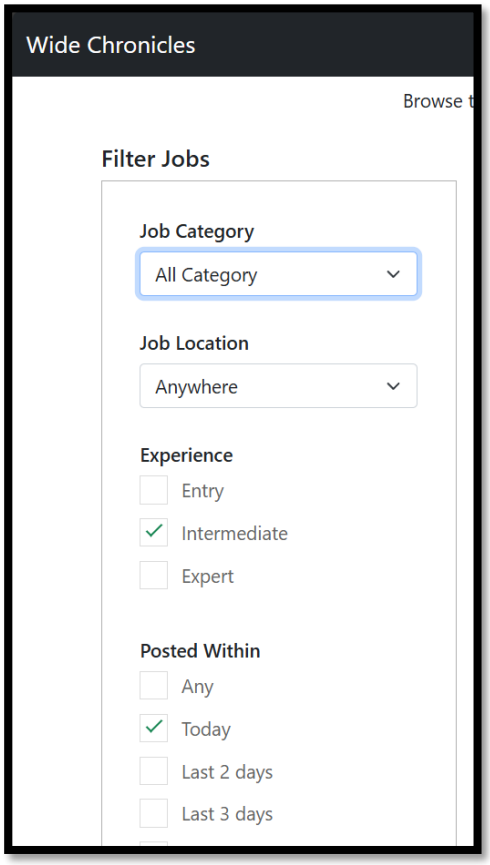

Figure 3.19: Screenshot of Interface for Filtering posted job in Realtime

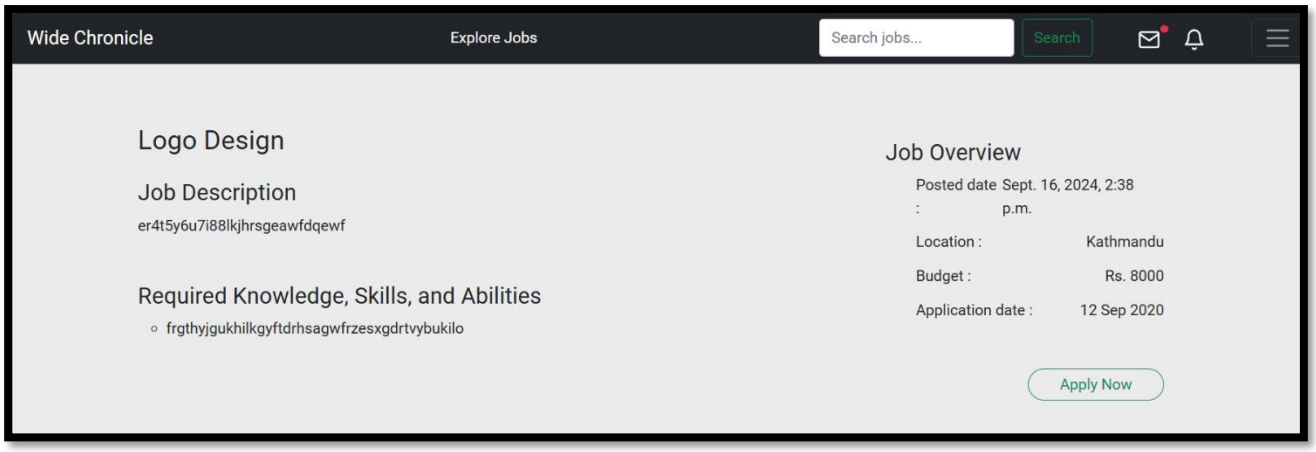

Figure 3.20: Screenshot of Interface for Applying to job

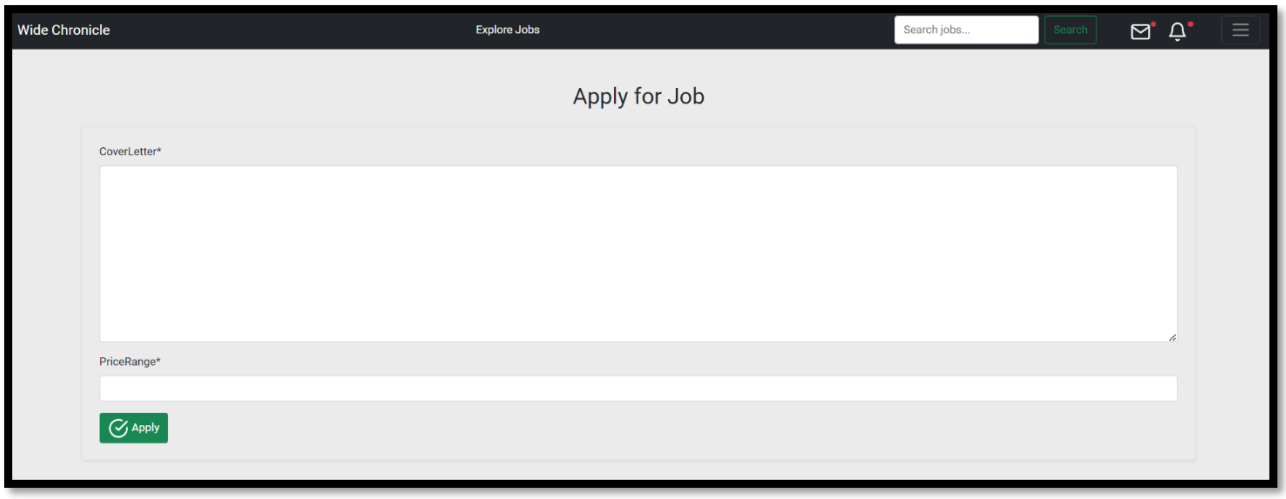

Figure 3.21: Screenshot of Interface for Apply conformation Page

Figure 3.22: Screenshot of Interface for Showing the previously applied jobs in job list page

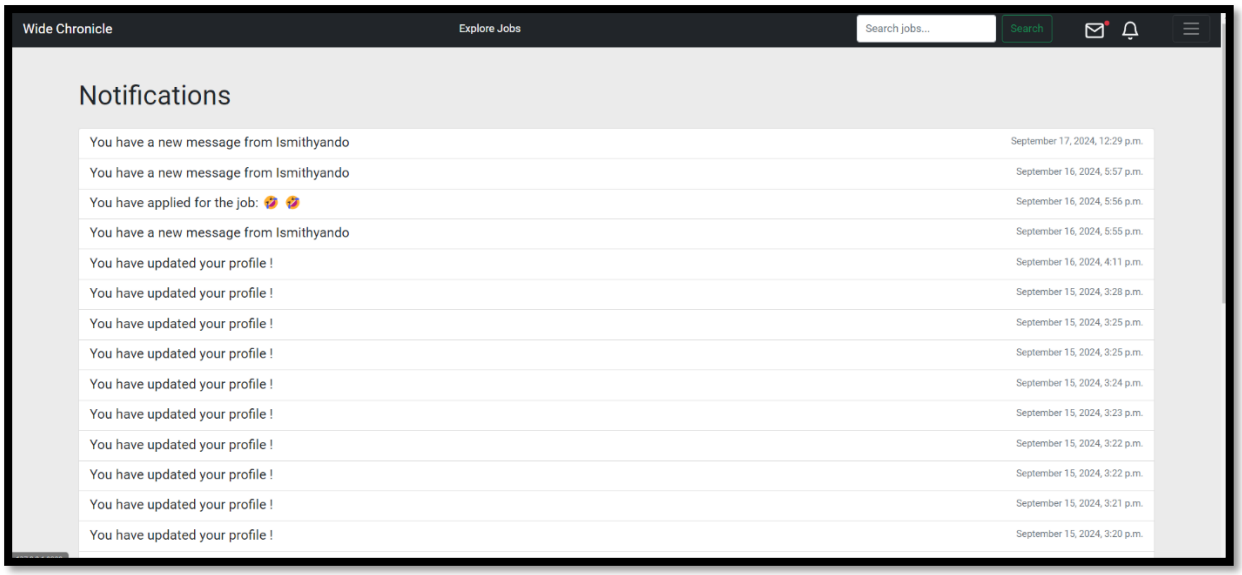

Figure 3.22: Screenshot of Interface for Notification page

Figure 3.22: Screenshot of Interface for Showing the previous chat list

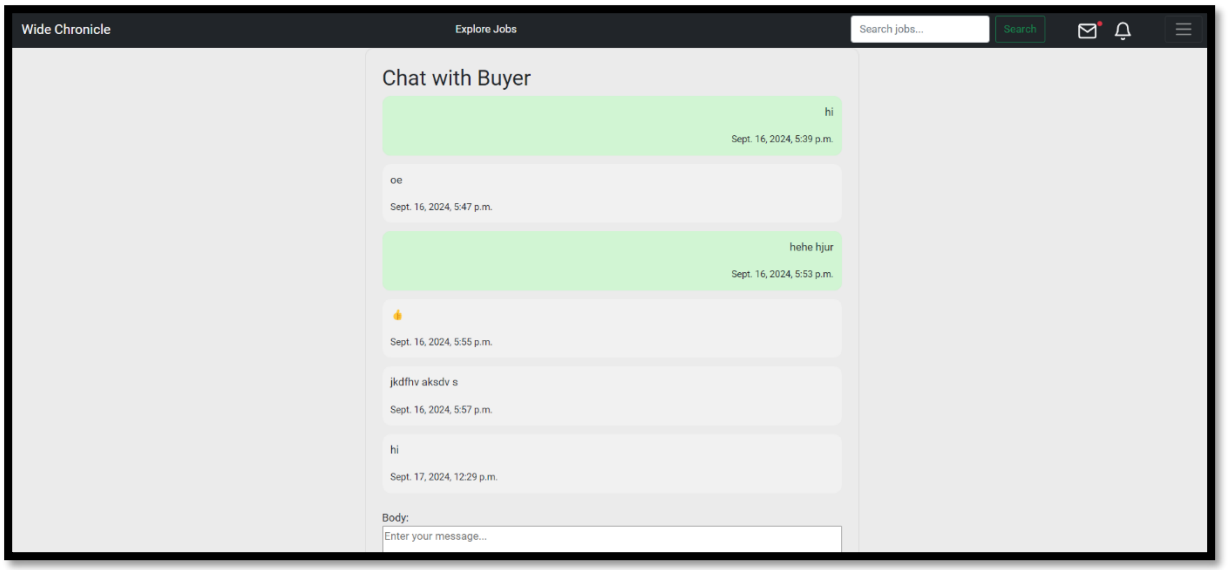

Figure 3.22: Screenshot of Interface for Showing the messaging page

Chapter-4: IMPLEMENTATION AND TESTING

4.1. Implementation

4.1.1. CASE Tool

a) **Visual Studio Code (VS Code)**

Visual Studio Code (VS Code) is a powerful and versatile source code editor used in the development of the Wide Chronicle Jobs project. It provides features like syntax highlighting, intelligent code completion, debugging, and integrated Git support, which streamline the coding process. Its extensibility through plugins allows developers to enhance the editor's functionality, making it suitable for working with different languages and frameworks, such as Python and Django, used in the project.

b) **GitHub**

GitHub is an essential platform for version control and collaboration in the Wide Chronicle Jobs project. It enables the tracking of code changes, collaborative development, and efficient management of the project's repository. By using GitHub, multiple team members can work simultaneously on different aspects of the project, ensuring smooth integration and continuous development. It also provides features like pull requests, issues tracking, and code review, which contribute to maintaining code quality and project management.

c) **Lucid chart**

Lucid chart is a diagramming tool used in the Wide Chronicle Jobs project for creating visual representations of system architectures, database schemas, and workflows. It helps in conceptualizing and communicating the project's structure and design elements effectively. By using Lucid chart, complex processes and relationships within the application can be clearly mapped out, aiding in better understanding and collaboration among team members during the development process.

4.1.2. Programming Language

a) **HTML**

HTML (Hypertext Markup Language) is the backbone of the Wide Chronicle Jobs project's user interface. It defines the structure and content of web pages, allowing the creation of a seamless and user-friendly experience. HTML is used to organize and display text, images, forms, and other multimedia elements within the application, making it an integral part of the front-end development.

b) **CSS**

CSS (Cascading Style Sheets) is utilized in the Wide Chronicle Jobs project to style and layout web pages. It controls the visual presentation of the application, including the design, colours, fonts, and spacing. CSS ensures that the Wide Chronicle Jobs interface is not only aesthetically pleasing but also responsive across different devices and screen sizes, providing users with a consistent and engaging experience.

c) **JS**

JavaScript (JS) plays a crucial role in adding interactivity and dynamic content to the Wide Chronicle Jobs project. It allows for the creation of features like real-time form validation, interactive elements, and asynchronous content updates without reloading the page. JavaScript enhances the user experience by making the application more responsive and engaging, ensuring that users can interact with the platform seamlessly.

d) **Python with Django Framework**

Python, combined with the Django framework, forms the core of the Wide Chronicle Jobs project's backend development. Python's simplicity and readability make it ideal for rapid development, while Django provides robust tools for building secure, scalable, and maintainable web applications. Together, they manage the server-side logic, database interactions, and business logic, enabling features like user authentication, job posting, and application management within Wide Chronicle Jobs.

4.1.3. Database

a) **SQLite**

SQLite is the database management system used in the Wide Chronicle Jobs project. As a lightweight, serverless, and self-contained database, SQLite is ideal for managing the application's data with minimal configuration. It stores all the necessary information, including user profiles, job listings, applications, and other related data, in a single file on the server. SQLite's ease of use and reliability make it a suitable choice for the project's development and testing phases, allowing for efficient data storage and retrieval without the need for a complex database setup.

4.1.4. Documentation Tool

a) **MS-Word**

Microsoft Word (MS-Word) is utilized in the Wide Chronicle Jobs project for creating and managing project documentation. It is a powerful word processing tool that allows for the preparation of various documents, including project reports, user manuals, and technical documentation. With features like text formatting, tables, graphs, and templates, MS-Word ensures that all written materials related to the project are well-organized, professionally formatted, and easy to share among team members and stakeholders. Its compatibility with other Microsoft Office tools also facilitates seamless integration with other project management and presentation tasks.

4.2. Testing

4.2.1. Test Case for Unit Testing

Table 4.1: Test Case

TID	Test Case	Expected Input	Expected Output	Actual Output	Test Result
T101	Register	Valid Details (Username, Email, Password)	"Registration Successful!" Go to Login Page	"Registration Successful!" Go to Login Page	Pass
T102	Register	Existing Username	"A user with that username already exists." message	"A user with that username already exists." message	Pass
T103	Register	Invalid Email Format (E.g.: abc.com)	"Please include an @ in the email address." warning	"Please include an @ in the email address." warning	Pass
T104	Register	Weak password (E.g.: 12345678)	"This password is too common." message	"No message displayed"	Fail
T105	Register	Weak password (E.g.: 12345678)	"This password is too common." message	"This password is too common."	Pass
T106	Register	Password and Confirm Password mismatch	"The two password fields didn't match." message	"The two password fields didn't match." message	Pass
T107	Login	Correct Username and Correct Password	Redirect to homepage with username displayed on navbar	Redirect to homepage with username displayed on navbar	Pass
T108	Login	Correct Username and	"Please enter a correct username	"Please enter a correct username	Pass

		Incorrect Password	and password." message	and password." message	
T109	Login	Incorrect Username and Correct Password	"Please enter a correct username and password." message	Redirect to homepage with username displayed on navbar	Fail
T110	Login	Empty Username and Password	"Please fill out this field" warning	"Please fill out this field" warning	Pass
T111	Profile Update	Update with Valid Details	"Your account has been updated" message	"Your account has been updated" message	Pass
T112	Profile Update	Update with empty fields	"Please fill out this field" warning	"Please fill out this field" warning	Pass
T113	Profile Picture Upload	Upload valid image file	"Your account has been updated." message	"Your account has been updated." message	Pass
T114	Profile Picture Upload	Upload non-image file (e.g., .exe)	"Upload a valid image. The file you uploaded was either not an image or a corrupted image." message	"Upload a valid image. The file you uploaded was either not an image or a corrupted image." message	Pass
T115	Job Posting	Post a job with valid details	"Job posted successfully." message	"Job posted successfully." message	Pass
T116	Job Posting	Post job with empty title	"Please fill out this field" warning	"Please fill out this field" warning	Pass
T117	Job Bidding	Bid on a job with valid details	"Bid submitted successfully." message	"Bid submitted successfully." message	Pass

T118	Job Bidding	Bid on job with empty bid amount	"Please enter a bid amount." warning	"Please enter a bid amount." warning	Pass
T119	Job Selection	Select a bid from multiple submissions	"Bid selected successfully." message	"Bid selected successfully." message	Pass
T120	Job Selection	Attempt to select a bid that does not exist	"Bid selection failed. Please try again." message	"Bid selection failed. Please try again." message	Pass
T121	Job Listing	View job listings	User can view available jobs.	User can view available jobs.	Pass
T122	Job Detail View	Click on a job to view details	User can view job details.	User can view job details.	Pass
T123	User Role Assignment	Assign seller role to user	"User role assigned successfully." message	"User role assigned successfully." message	Pass
T124	User Role Assignment	Assign invalid role to user	"Invalid role assignment." message	"Invalid role assignment." message	Pass
T125	**Message Sending**	Send a message from Buyer to Seller with valid content	"Message sent successfully." message	"Message sent successfully." message	Pass
T126	**Message Sending**	Send a message with empty content	"Message cannot be empty." warning	"Message cannot be empty." warning	Pass
T127	**Message Viewing**	View messages in the inbox	User can view all received messages.	User can view all received messages.	Pass
T128	**Message Status Update**	Read a message	Message status updated to "Read."	Message status updated to "Read."	Pass
T129	**Notification for New Bid**	Seller submits a new bid	Buyer receives "New bid received." notification	Buyer receives "New bid received." notification	Pass
T130	**Notification for Job Update**	Job is updated by Buyer	Seller receives "Job updated" notification	Seller receives "Job updated" notification	Pass

T131	**Notification Status Update**	Read a notification	Notification status updated to “Read.”	Notification status updated to “Read.”	Pass
T132	**Profile Picture Update**	Upload a new valid profile picture	“Your profile picture has been updated successfully.” message	“Your profile picture has been updated successfully.” message	Pass
T133	**Profile Skills Update**	Add new skills to profile	“Your profile has been updated successfully.” message	“Your profile has been updated successfully.” message	Pass
T134	**Profile Bio Update**	Update bio with valid input	“Your bio has been updated successfully.” message	“Your bio has been updated successfully.” message	Pass
T135	**Notification for New Message**	Receive a new message from a user	“You have a new message” notification	“You have a new message” notification	Pass
T136	**Job Posting Notification**	Buyer posts a job	Sellers receive “New job posted” notification	Sellers receive “New job posted” notification	Pass
T137	**Notification Settings Update**	Turn off notifications for bids or messages	Notification settings updated successfully	Notification settings updated successfully	Pass

Chapter-5: CONCLUSION AND FUTURE RECOMMENDATIONS

5.1. Conclusion

In conclusion, **Wide Chronicles Jobs** has successfully established itself as a dynamic platform that effectively connects buyers and sellers in the freelancing market. By allowing buyers to post job opportunities and sellers to bid on these jobs, the platform creates a transparent and competitive environment that fosters better hiring decisions. The user-friendly interface, designed with simplicity and efficiency in mind, enables users to easily navigate the system and engage with various functionalities, such as job postings, applications, and notifications. Throughout the development process, the project has leveraged modern web technologies and best practices, ensuring that the platform is responsive, reliable, and secure. Overall, **Wide Chronicles Jobs** serves as a valuable resource for freelancers seeking opportunities and employers looking for skilled professionals, enhancing their collaboration and job-finding experience.

5.2. Future Recommendations

To further enhance the functionality and user experience of **Wide Chronicles Jobs**, several recommendations can be considered:

1. Feedback and Rating System: Implementing a robust feedback and rating system could help users evaluate the quality of services provided by freelancers and the reliability of employers. This transparency would foster trust within the community and encourage high standards of work.
2. Direct Communication Features: Introducing a chat feature would facilitate direct communication between buyers and sellers, allowing them to discuss project details, negotiate terms, and clarify expectations. This real-time interaction could lead to better project outcomes and satisfaction for both parties.
3. Payment Processing Integration: Expanding the platform's capabilities by integrating secure payment processing options would simplify transactions, making it easier for buyers to pay for services and for sellers to receive compensation. This would enhance the overall user experience and attract more users to the platform.

4. Mobile Application Development: Developing a dedicated mobile application would increase accessibility for users, allowing them to manage their jobs and bids on the go. A mobile-friendly experience would cater to the needs of users who prefer to engage with the platform through their smartphones or tablets.
5. Data Analytics and Insights: Incorporating data analytics tools could provide valuable insights into market trends, helping both buyers and sellers make informed decisions. Features like market demand analysis, pricing trends, and user behavior patterns could enhance the decision-making process for users.
6. Skill Development Resources: Offering educational resources, such as tutorials, webinars, or articles, could help freelancers enhance their skills and stay competitive in the market. This initiative would add value to the platform and encourage users to engage more deeply with the community.
7. Community Building Initiatives: Creating forums or discussion boards where users can share experiences, ask questions, and collaborate could foster a sense of community among freelancers and employers. This would enhance user engagement and retention on the platform.
8. Enhanced Search and Filtering Options: Improving the search and filtering functionalities would help buyers find suitable sellers more efficiently. Advanced filtering options based on skills, experience, ratings, and location could streamline the hiring process.
9. File Upload and Management: Implementing a feature that allows users to upload and manage project files directly on the platform would streamline the workflow. This could include file sharing between buyers and sellers, version control, and secure file storage.
10. Real-Time Chat and Notifications: Developing a real-time chat feature integrated with notifications would enhance communication between buyers and sellers. Instant notifications about new messages, job updates, bid status changes, and other important events would ensure that users stay informed and engaged.
11. Integration with External Tools: Consider integrating the platform with popular external tools and services, such as calendar applications, task management tools, and cloud storage services. This integration would allow users to manage their projects and deadlines more effectively.
12. Customizable Notification Preferences: Allow users to customize their notification settings based on their preferences. This feature would enable users to receive notifications for specific events, such as new job postings or bid updates, according to their interests.

13. Advanced Reporting and Analytics: Provide users with advanced reporting tools to track their performance, earnings, and job metrics. This feature would help users make data-driven decisions and optimize their freelancing strategies.
14. Enhanced Security Measures: Continuously update and enhance the platform's security measures to protect user data and transactions. This includes implementing advanced encryption, secure authentication methods, and regular security audits.

By implementing these recommendations, **Wide Chronicles Jobs** can enhance its platform's overall functionality, user satisfaction, and market competitiveness. These enhancements would not only attract more users but also create a thriving ecosystem for freelancing opportunities.

Chapter-6: References

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