

A MEDIATING PLATFORM FOR JOB SEEKERS
AND TALENT ACQUISITION MANAGERS

ICS1261- Software Development and Practice using Python

A PROJECT REPORT

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BONAFIDE CERTIFICATE

Certified that this project report titled “ A mediating Platform for Job seekers and Talent acquisition Managers” is the bonafide work of “ JAYASREE R (3122237001019) JOICE ANANCIA S A (3122237001020) MOOGAMBIGAI A (3122237001027) ” who carried out the project work in the ICS1261- Software Development and Practice using Python during the academic year 2023-24.

Internal Examiner

External Examiner

Date:

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ABSTRACT

The project, "A Mediating Platform for Job Seekers and Talent Acquisition Managers," aims to replicate the process of matching job seekers with recruiters, similar to the systems used by many online recruitment platforms. This project is important because it helps us understand the complex job matching process by simulating real-world recruitment scenarios.

By exploring these processes in detail, the project seeks to improve the connection between job seekers and talent acquisition managers, making recruitment more efficient and effective. This simulation not only helps us understand how job matching works but also serves as a useful tool for both academic research and practical use in human resource management.

1. Problem Statement

To create a mediating platform through which:

- i. Job seekers can explore open positions that match their profiles.
- ii. Talent acquisition managers can search for deserving applicants who meet their job requirements.

2. Extended exploration of problem statement

This project addresses the need for an efficient platform that connects job seekers and talent acquisition managers, streamlining the recruitment process.

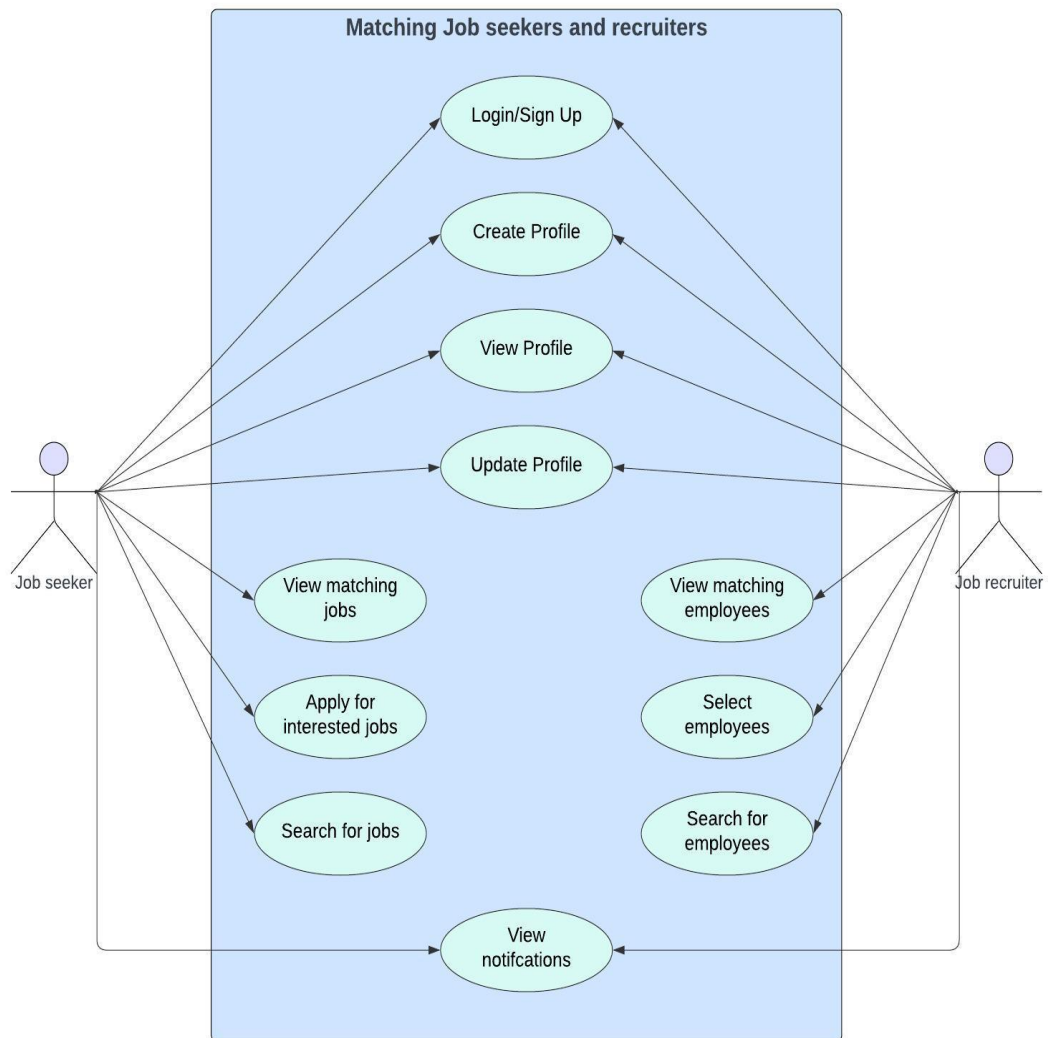
For job seekers, the platform offers a personalized job search experience. It matches job seekers with positions that align with their skills, experiences, and career goals. This approach saves time and increases the likelihood of finding suitable employment.

For talent acquisition managers, the platform provides powerful tools to identify and evaluate candidates. Recruiters can set specific criteria to find applicants who meet their job requirements, thus reducing recruitment time and effort while allowing focus on strategic hiring decisions. The platform also offers a personalized search for employees.

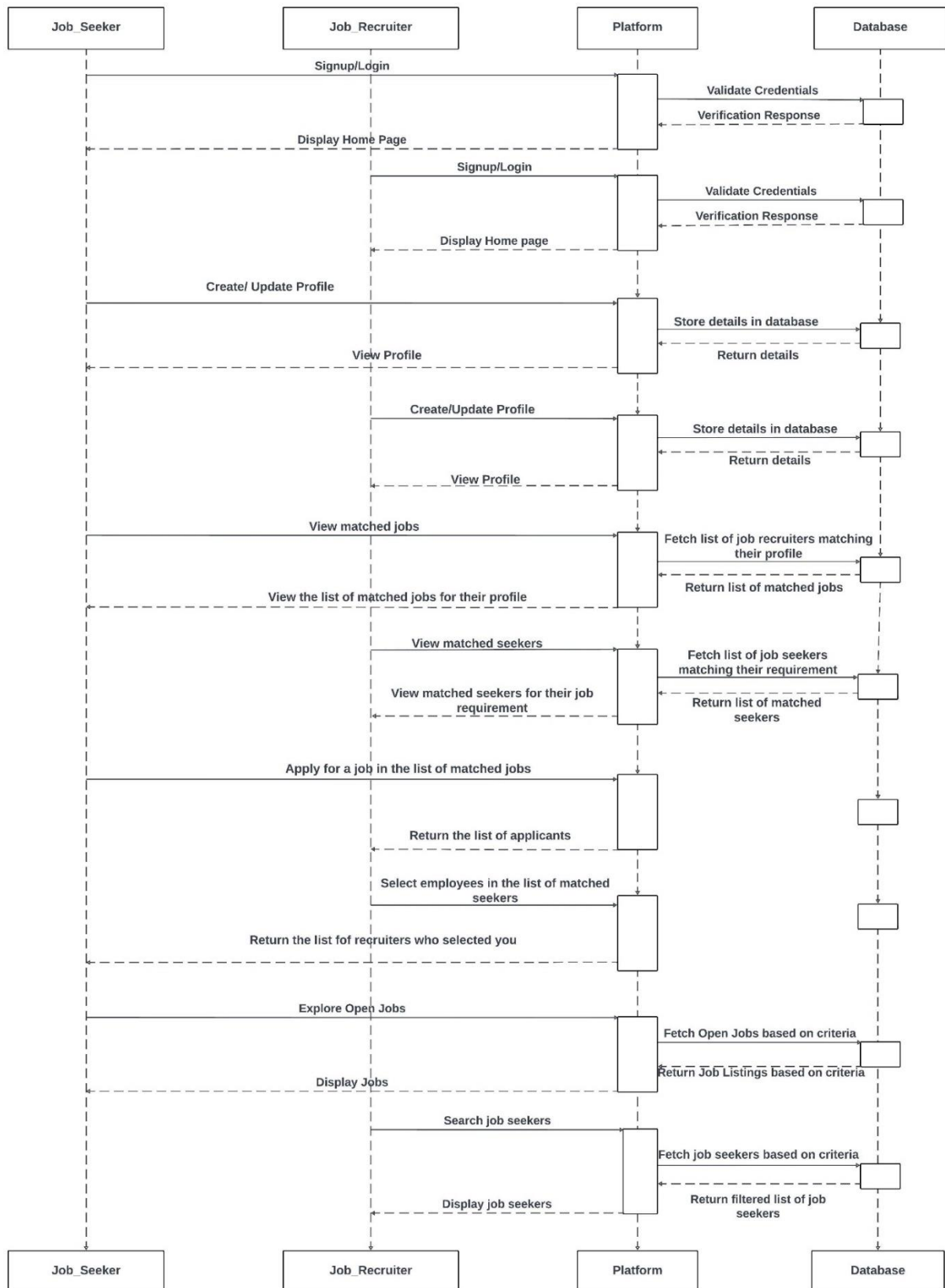
By simulating real-world recruitment scenarios and integrating innovative features, this project offers valuable insights into the hiring process. It aims to revolutionize the connection between job seekers and talent acquisition managers, leading to more effective recruitment outcomes.

3. Analysis using UML Diagrams

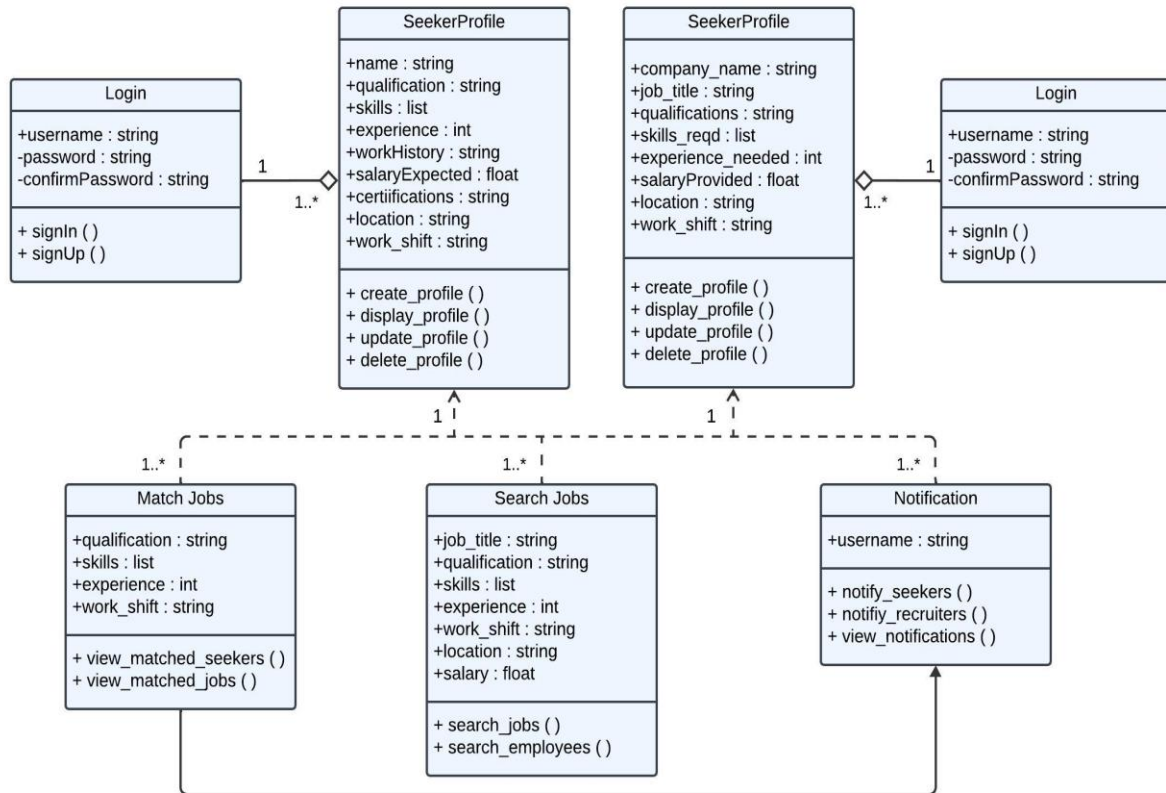
3.1. Use case Diagram :



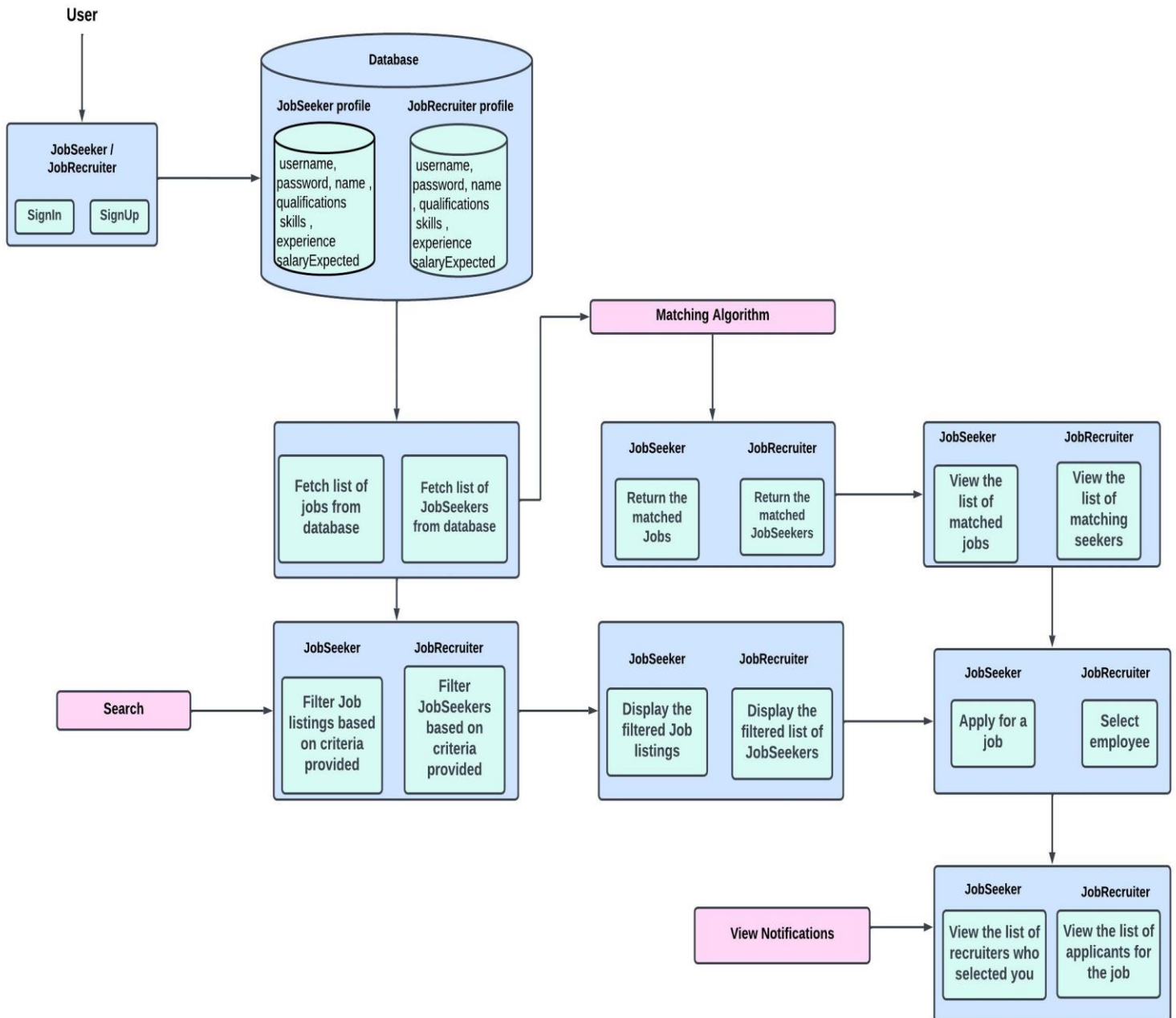
3.2 Sequence Diagram



3.3 Class Diagram

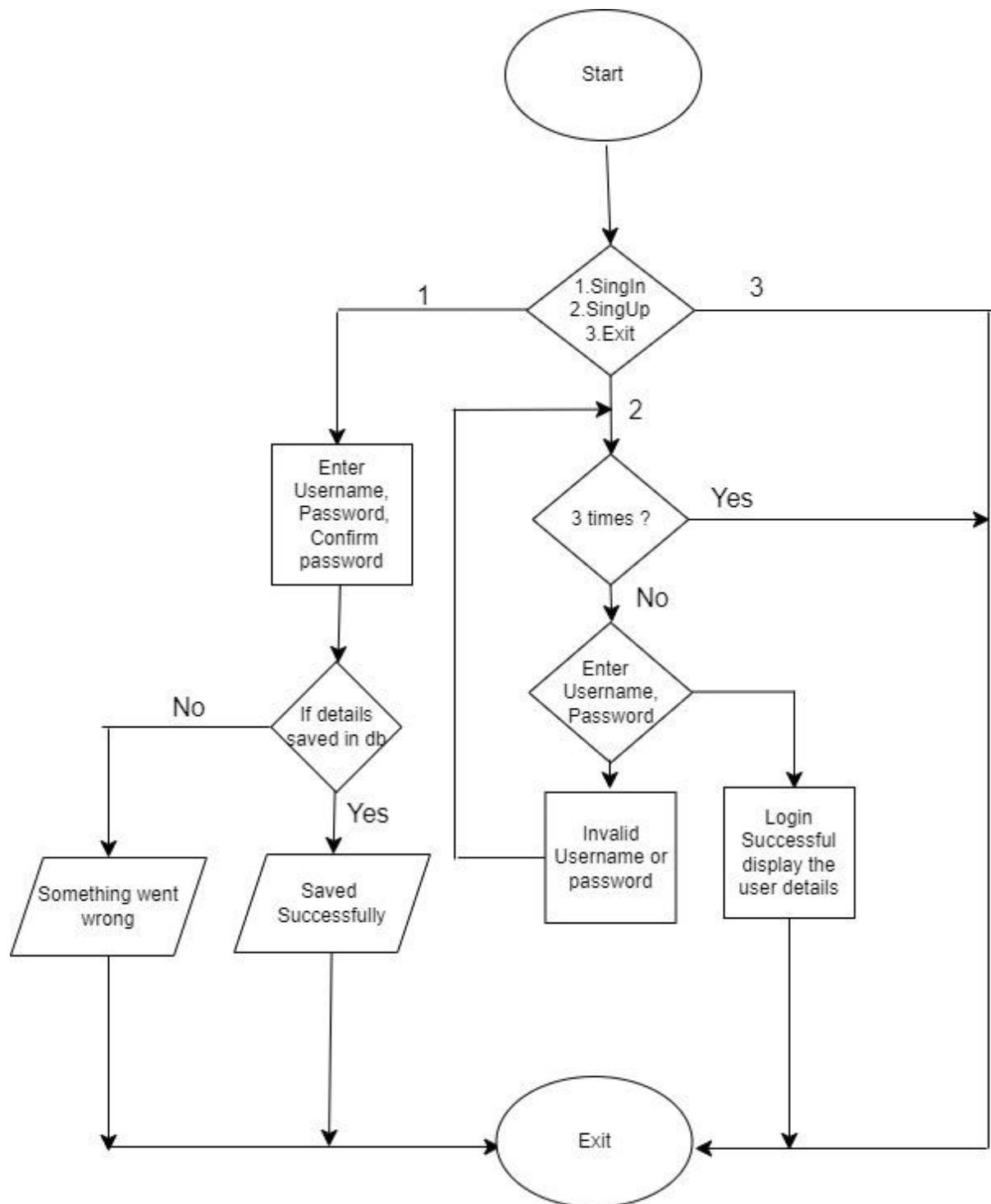


4.1 Architecture Diagram :

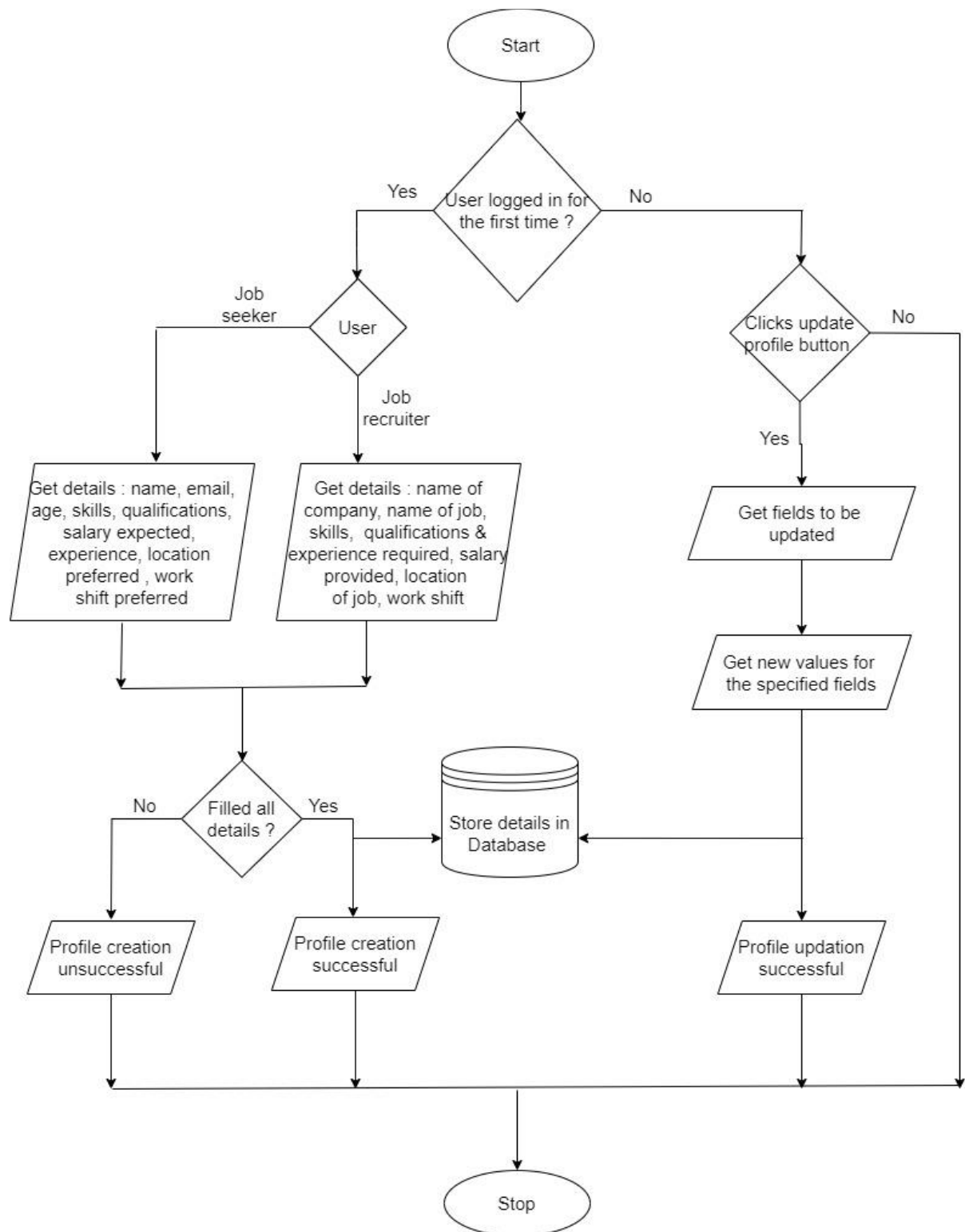


4.2 Flowcharts

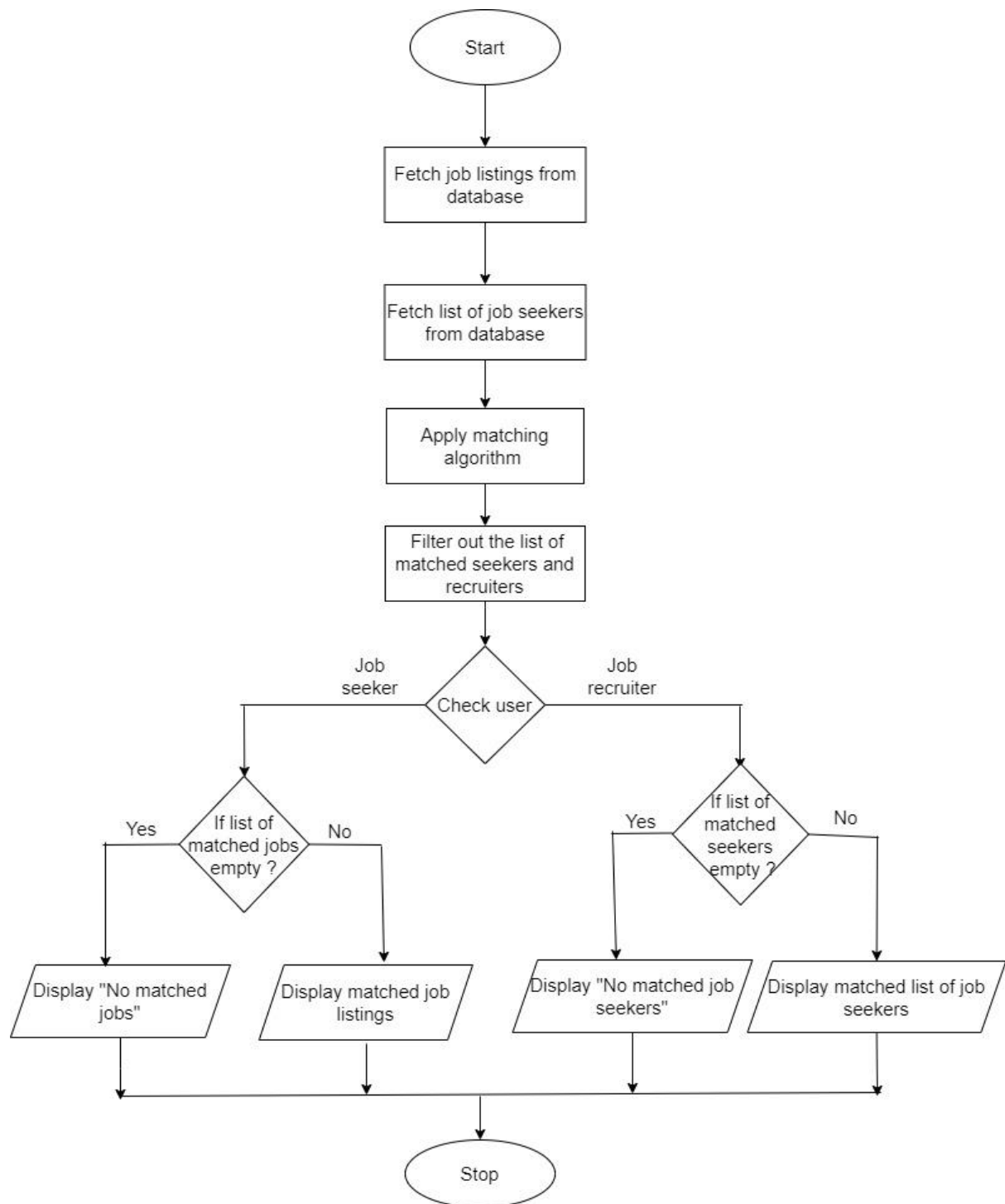
4.2.1 Login Page



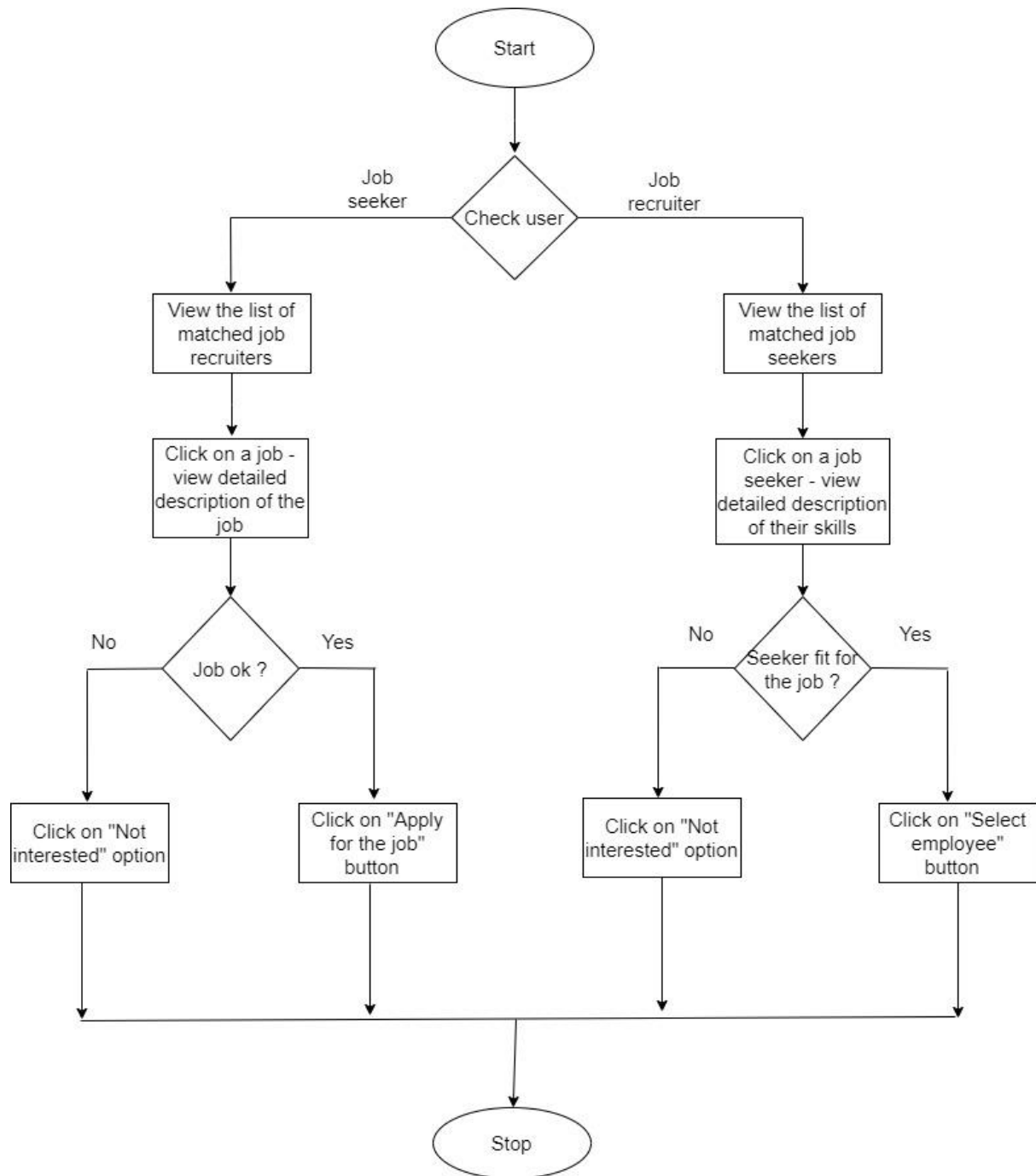
4.2.2 Profile Management



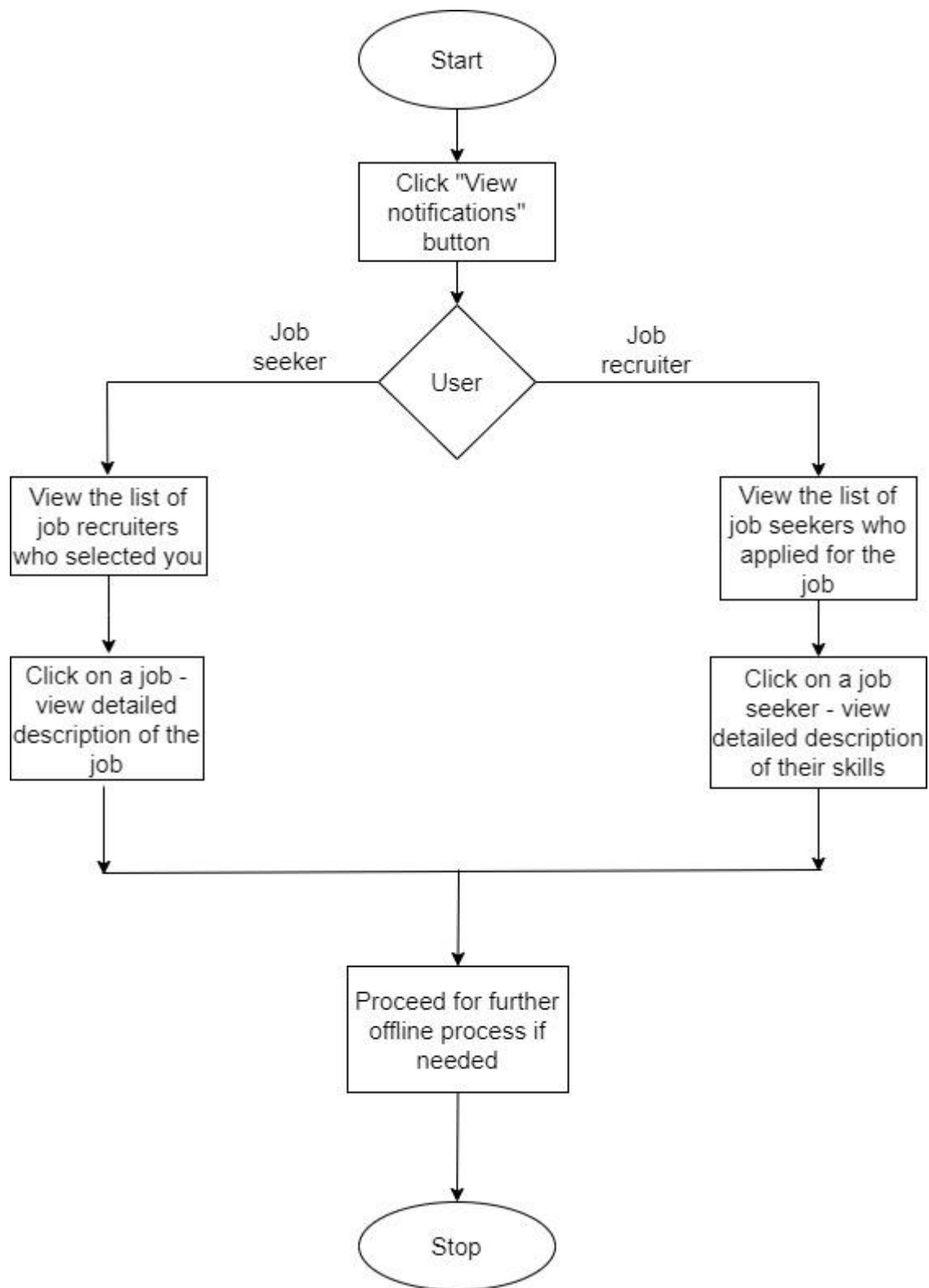
4.2.3 Match Jobs



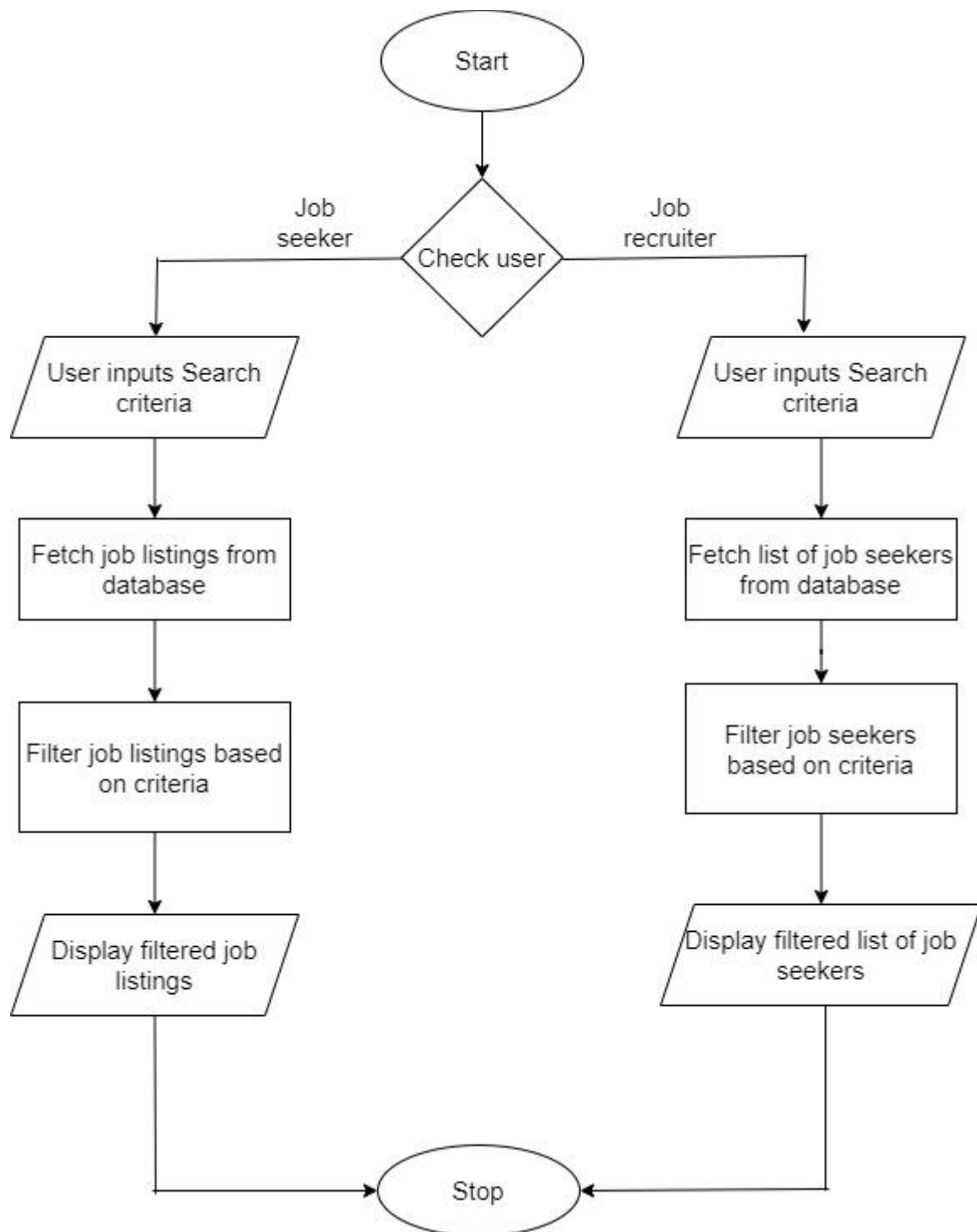
4.2.4 View matched jobs



4.2.5 View Notifications



4.2.6 Search



5. Description of Each Module

5.1. Login (inside `login_page.py`):

- **SignIn()**: Prompts users to enter their username and password to access their accounts.
- **SignUp()**: Allows new users to create an account by entering a username, password, and confirming the password.

5.2. Job Seeker Profile Management (inside `seeker_profile.py`):

- **create_profile()**: Enables job seekers to create a new profile by providing their personal and professional information.
- **display_profile()**: Displays the job seeker's profile information.
- **update_profile()**: Allows job seekers to update their profile details.
- **delete_profile()**: Allows job seekers to permanently log off from the platform

5.3. Recruiter Profile Management (inside `recruiter_profile.py`):

- **create_profile()**: Enables recruiters to create a new profile with their company and contact details.
- **display_profile()**: Displays the recruiter's profile information.
- **update_profile()**: Allows recruiters to update their profile details.
- **delete_profile()**: Allows job recruiters to permanently log off from the platform

5.4. Matching Algorithm (inside `match.py`):

- **view_matching_jobs()**: Job seekers can view job listings that match their profiles.
- **view_matching_seekers()**: Recruiters can view job seekers who match their job requirements.

5.5. Search Jobs (inside `search_jobs.py`):

- **search_jobs()**: Job seekers can search for job openings based on various criteria.
- **search_employees()**: Recruiters can search for potential employees.

5.6. Notifications (inside `notifications.py`):

- **notify_seekers()**: Sends notifications to job seekers about the job recruiters who had selected them .
- **notify_recruiters()**: Sends notifications to recruiters about the job seekers who had applied for their job

5.7. FAQ (inside `faq.py`):

- **view_faqs()**: Allows users to see the frequently asked questions related to that job and also allows them to ask questions.

6. Implementation

Data Organization and Rationale:

- **Lists:** Used for storing temporary data such as search results.
- **Dictionaries:** Employed to store user profiles and job listings, providing efficient key-value pair lookups.
- **Files:** Utilized for storing frequently asked questions
- **Image Files :** For storing the profile pictures of seekers and company logos of recruiters.

Libraries and APIs:

- **Django:** Framework used for building the web application. Functions like `render` and `redirect` facilitate webpage rendering and URL redirection, respectively.
- **SQLite3 :** Database system used to store user data, job listings, and other relevant information. It ensures robust data management and retrieval capabilities.
- **Messages:** Django's messaging framework to display one-time notifications to users about the success or failure of actions.

User Interface Design:

- Designed to be intuitive and user-friendly, ensuring a seamless experience for both job seekers and recruiters.
- Forms and input fields are designed for easy data entry.
- Notifications are displayed prominently to keep users informed of updates.

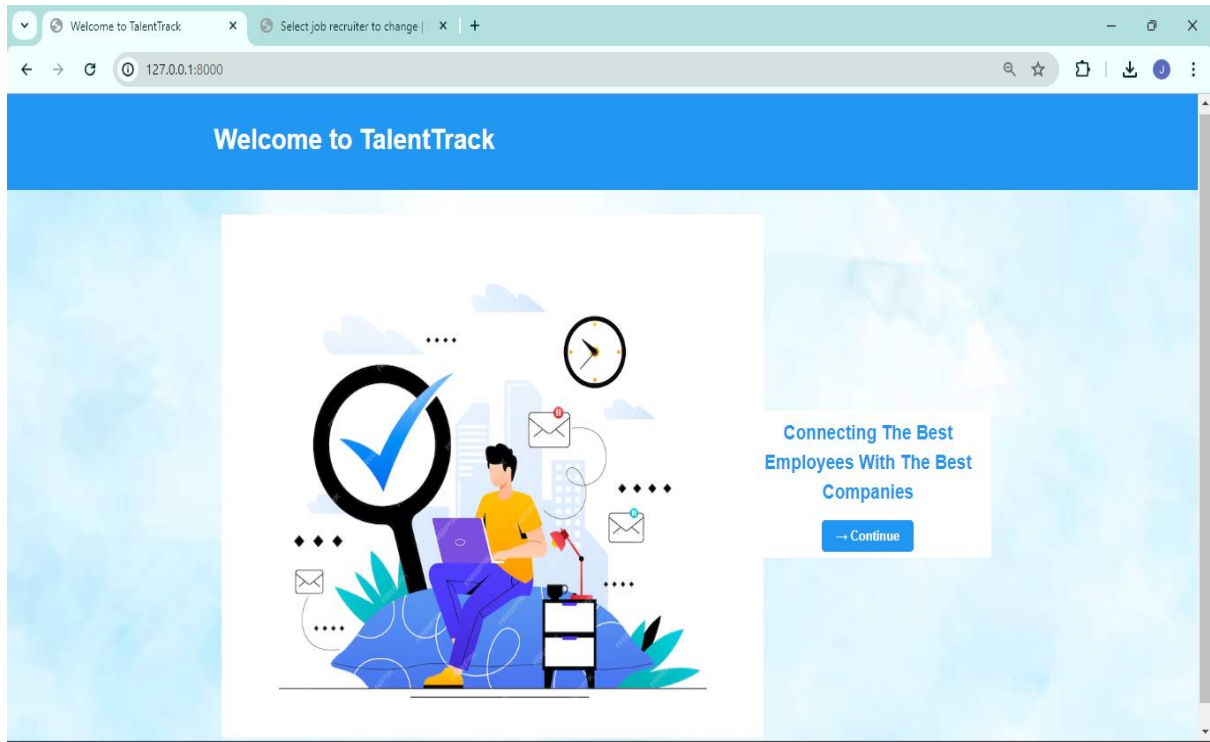
Platform Used for Code Development:

- **VS Code:** Chosen for its robust features like IntelliSense, debugging capabilities, and a vast array of extensions.

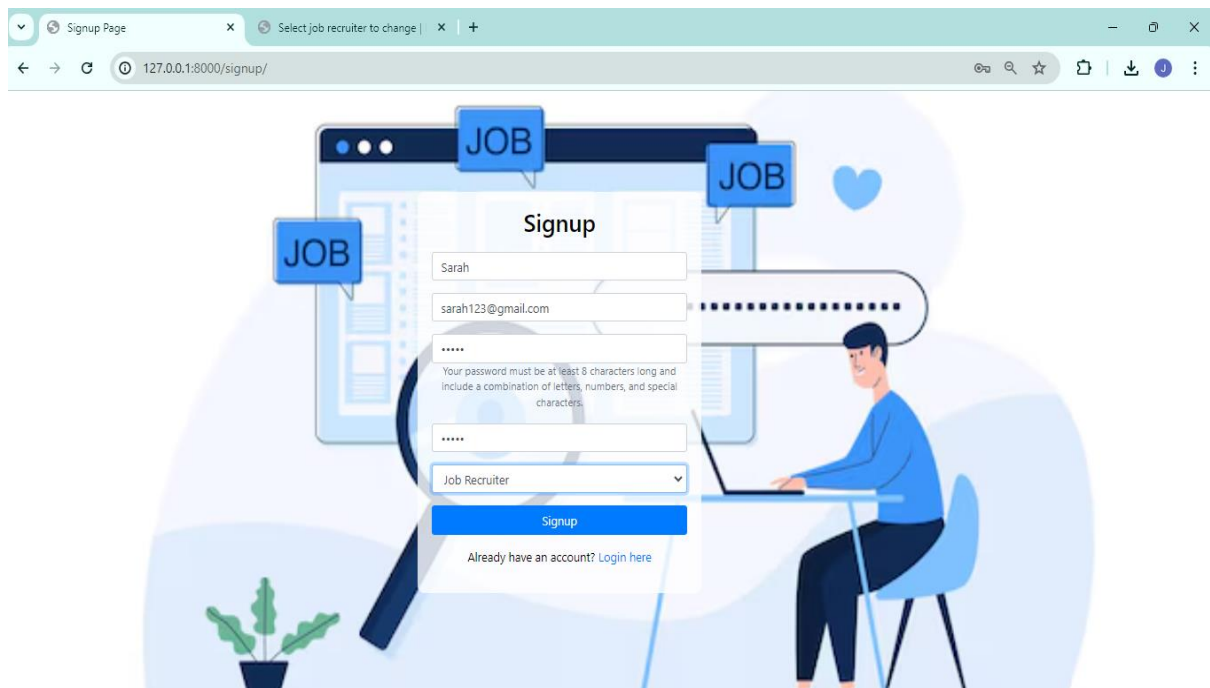
7. Validation through Detailed Test cases for various scenarios

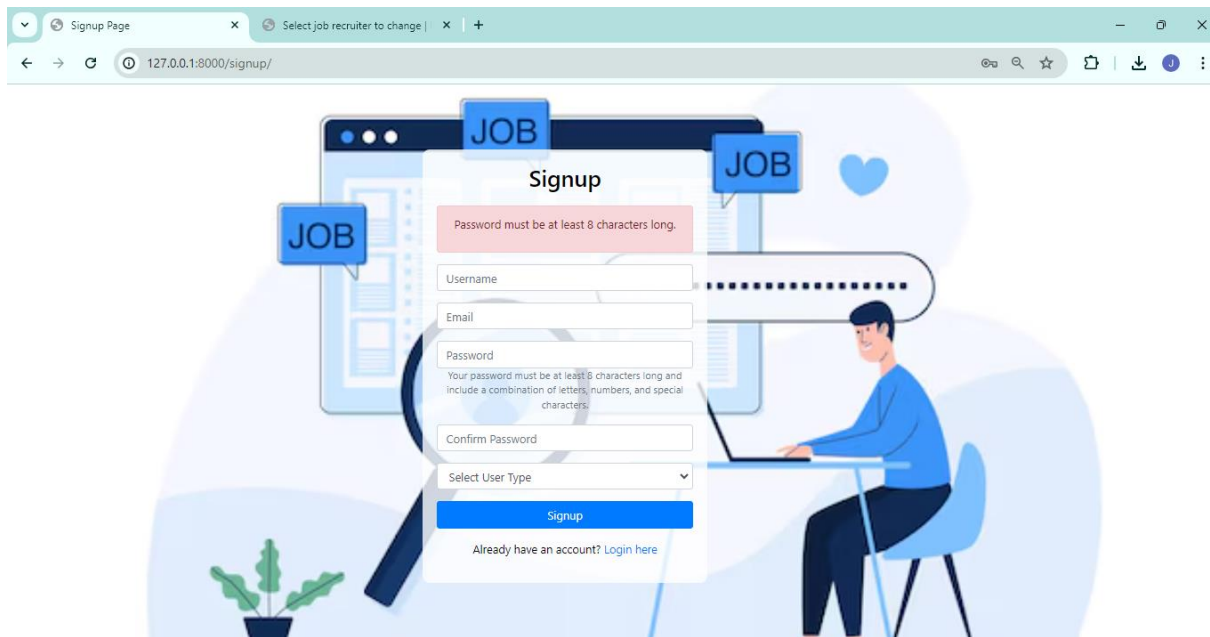
Output Screenshots :

Welcome page :

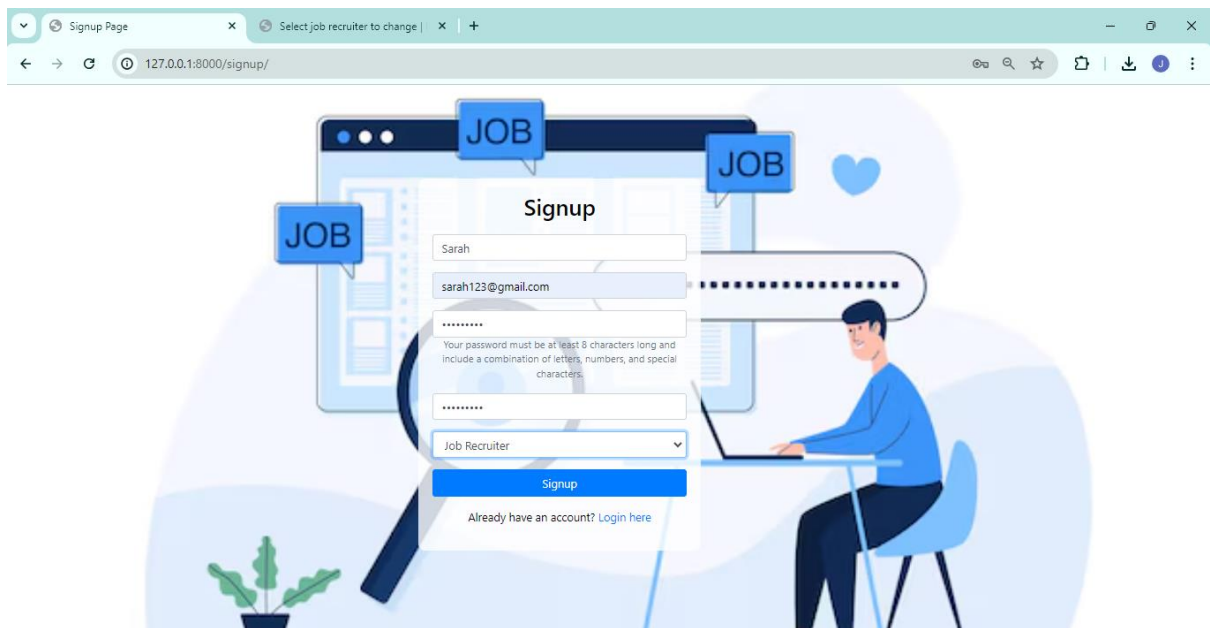


Signup Page :





(appropriate validations are handled)



For Job Recruiters :

Profile Creation :

The screenshot shows a web browser window with two tabs: "Job Seeker Profiles" and "Select job recruiter to change". The address bar shows the URL "127.0.0.1:8000/createjr/". The main content area displays a "Job Recruiter Profile" form. The form includes the following fields:

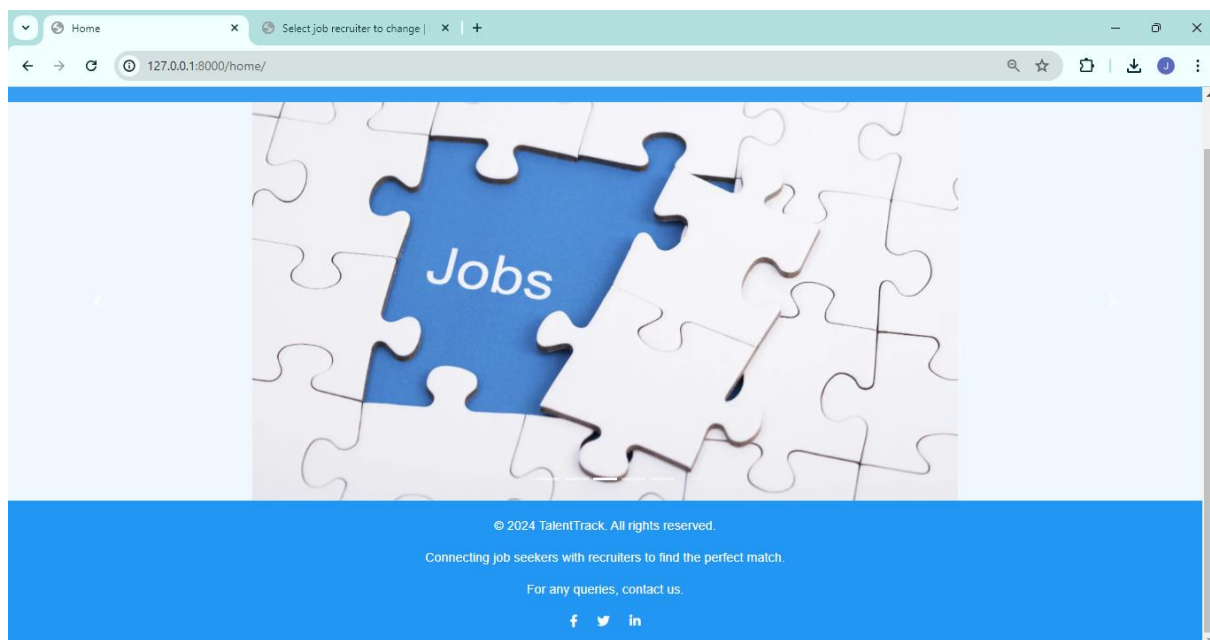
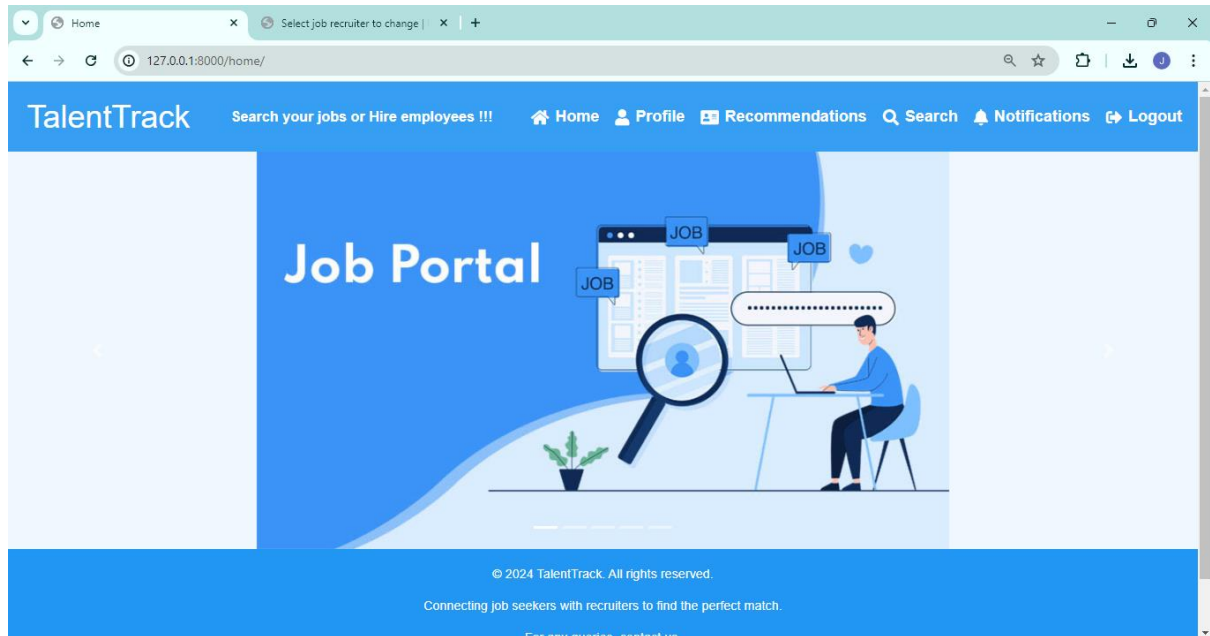
- Company logo: A file upload button labeled "Choose File" with the text "No file chosen".
- Company Name: A text input field.
- Description: A large text area with a placeholder icon.
- Job post: A text input field.
- Qualifications Required: A text input field and a dropdown menu set to "Mandatory".
- Skills Required: A text input field and a dropdown menu set to "Mandatory".
- Experience Required: A text input field with the placeholder "Enter number of years" and a dropdown menu set to "Mandatory".
- Salary Provided: A text input field with a "Min" button and a unit selector set to "lpa".
- Certifications: A text input field and a dropdown menu set to "Mandatory".

The screenshot shows the same "Job Recruiter Profile" form, but with the following data entered:

- Job post: Software Developer
- Qualifications Required: B.Tech, Mandatory
- Skills Required: HTML, CSS, Flutter, Django, Mandatory
- Experience Required: 5, Desired
- Salary Provided: 10, lpa
- Certifications: XYZ Certificate, ABC certificate, Mandatory
- Location of job: Bangalore
- Work Shift: Day Shift
- Upload FAQ Document: A file upload button labeled "Choose File" with the text "faq.txt".

A "Save Profile" button is visible at the bottom left of the form area.

Home Page :




Profile page :

Job Recruiter Profile | Select job recruiter to change | 127.0.0.1:8000/home/profile/

TalentTrack Search your jobs or Hire employees !!! Home Profile Recommendations Search Notifications Logout

Profile



Username:
Sarah

Email:
sarah123@gmail.com

Name:
HCL

Description:
Software Developer posts vacant !!
Applications are welcome !

Job Recruiter Profile | Select job recruiter to change | 127.0.0.1:8000/home/profile/

Experience Constraint:
Desired

Salary Provided:
10

Certifications:
XYZ Certificate, ABC certificate

Certificates Constraint:
Mandatory

Location of Job:
Bangalore

Job Work Shift:
Day Shift

[Update](#) [Delete](#)

Update Profile :

Update Profile | Select job recruiter to change | 127.0.0.1:8000/home/updatejr/

3

Experience Constraint:
Desired

Salary Provided:
10

Certifications Required:
XYZ Certificate, ABC certificate

Certificates Constraint:
Mandatory

Location of Job:
Bangalore

Job Work Shift:
Day Shift


Save Cancel

Recommendations :

Seeker Recommendations | Select job recruiter to change | 127.0.0.1:8000/home/recommendations/seekers/

TalentTrack Search your jobs or Hire employees !!! Home Profile Recommendations Search Notifications Logout

Recommended Seekers



Name: Jayasree
Job Post: Software Developer
Recommendation: 81.25%

View details

View details :

3

Work History:

Worked at abc company for 3 years

Minimum Salary Expected:

8 lpa , Desired

Certifications:

XYZ certificate, ABC certificate

Location:

chennai, Desired

Work Shift:

Day Shift, Desired

[<- Back](#) [Select](#) [Remove from recommendations](#)

23

Job Seeker Search

Software Developer

Qualifications:

Skills:

Experience (Min):

3

Experience (Max):


Certifications:


Gender:

Select Gender

Search

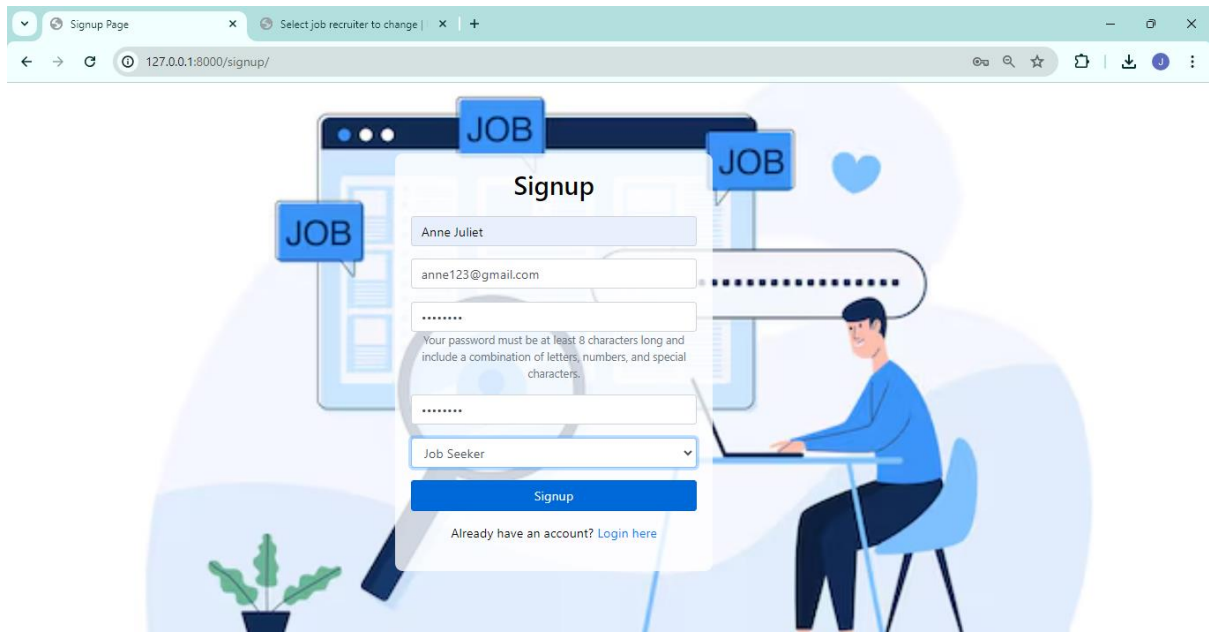
Search Results

 Name: Jayasree
Job Post: Software Developer
[View details](#)

 Name: Moogambigai
Job Post: Software Developer
[View details](#)

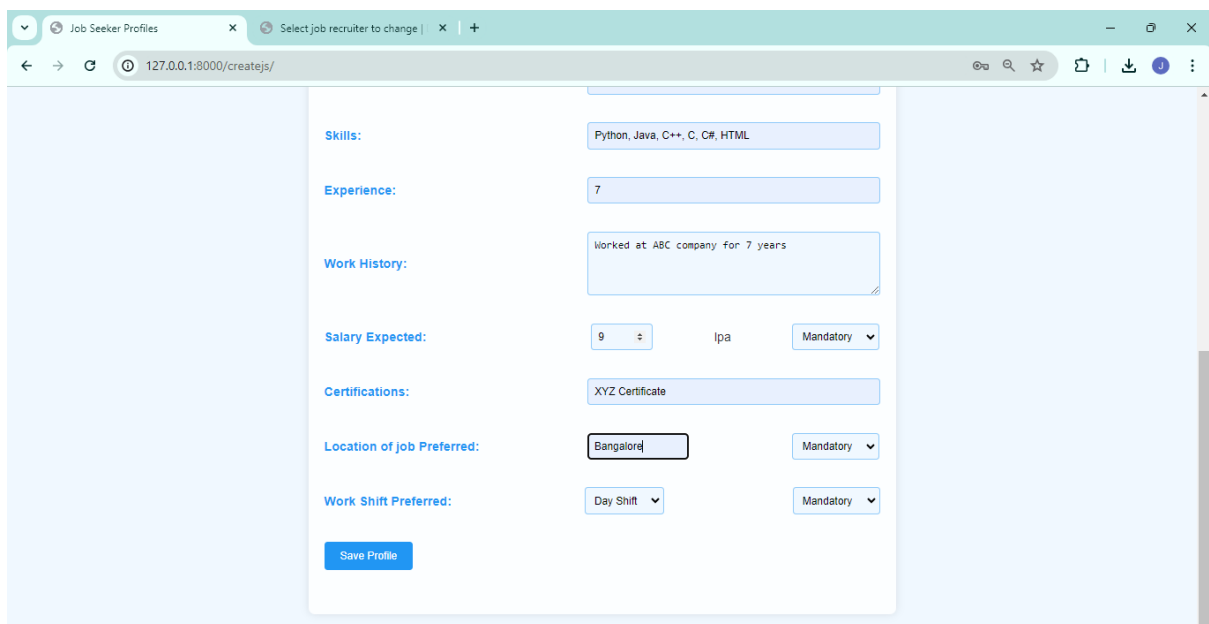
For Job seekers :

Signup :



The screenshot shows a web browser window with the address bar displaying "127.0.0.1:8000/signup/". The page features a "Signup" form with the following fields: Name (Anne Juliet), Email (anne123@gmail.com), Password (masked with dots), and a dropdown menu for "Job Seeker". A blue "Signup" button is at the bottom of the form, and a link "Already have an account? Login here" is below it. The background includes a stylized illustration of a person sitting at a desk with a laptop, a potted plant, and a heart icon. The word "JOB" appears in blue boxes around the form.

Profile Creation :



The screenshot shows a web browser window with the address bar displaying "127.0.0.1:8000/createjs/". The page displays a "Profile Creation" form with the following fields: Skills (Python, Java, C++, C, C#, HTML), Experience (7), Work History (Worked at ABC company for 7 years), Salary Expected (9 Lpa, Mandatory), Certifications (XYZ Certificate), Location of job Preferred (Bangalore, Mandatory), and Work Shift Preferred (Day Shift, Mandatory). A blue "Save Profile" button is at the bottom of the form.

Profile Page :

TalentTrack Search your jobs or Hire employees !!! Home Profile Recommendations Search Notifications Logout

Profile

Username:
Anne Juliet

Email:
anne123@gmail.com

Name:
Anne Juliet

Age:
23 years

Update and delete Profiles :

7

Work History:
Worked at ABC company for 7 years

Minimum Salary Expected:
9 lpa , Mandatory

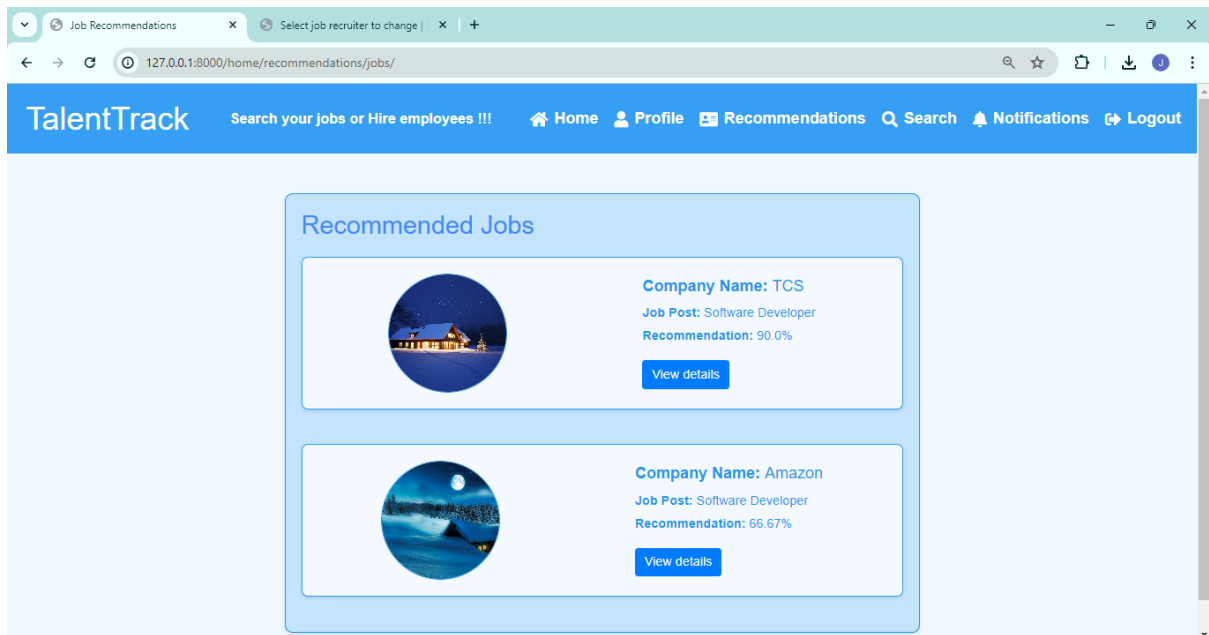
Certifications:
XYZ Certificate

Location:
Bangalore, Mandatory

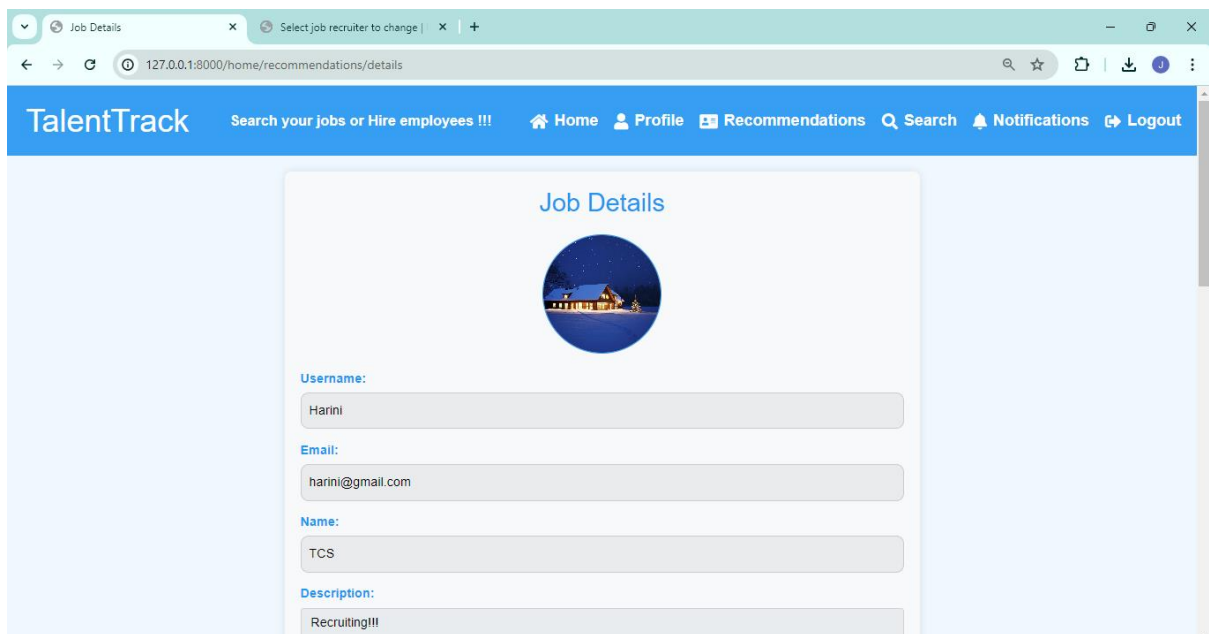
Work Shift:
Day Shift, Mandatory

Update Delete

Recommendations :



View details :



Job Details

Select job recruiter to change |

127.0.0.1:8000/home/recommendations/details

Experience Constraint:

Desired

Salary Provided:

9

Certifications:

XYZ Certificate

Certificates Constraint:

Desired

Location of Job:

Hyderabad

Job Work Shift:

Day Shift

<-- Back Apply FAQ Remove from recommendations

Search Jobs :

Job Search

TalentTrack Search your jobs or Hire employees !!! Home Profile Recommendations Search Notifications Logout

Job Search

Company Name:

Job Post:

Accountant

Qualifications:

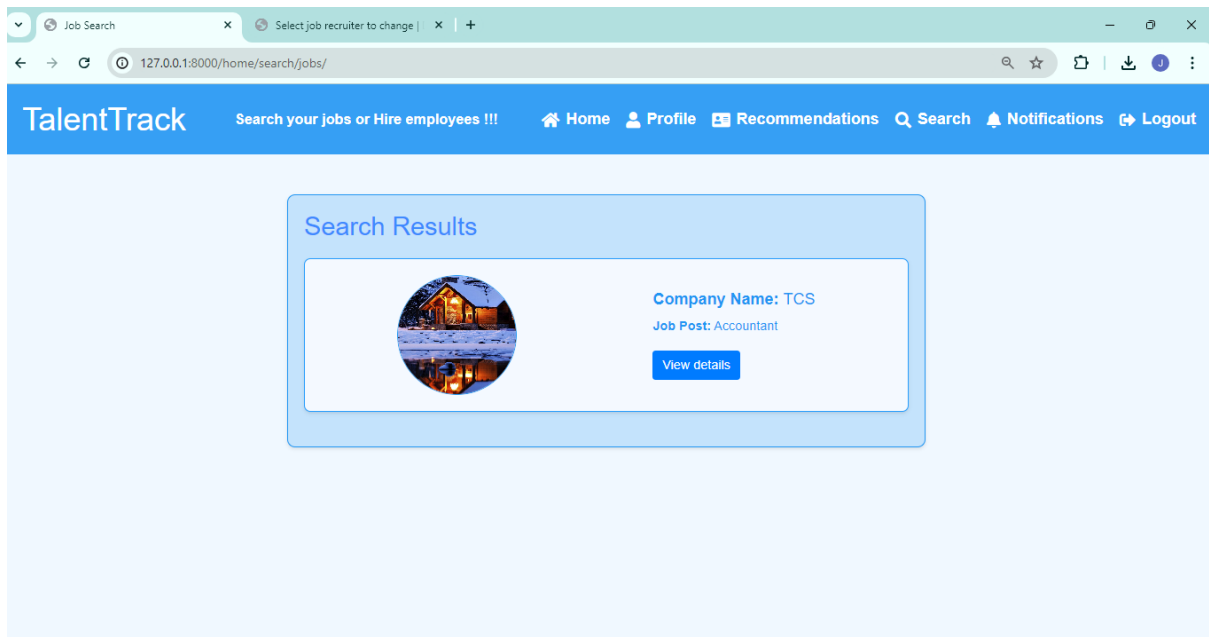
Salary Greater Than:

Location:

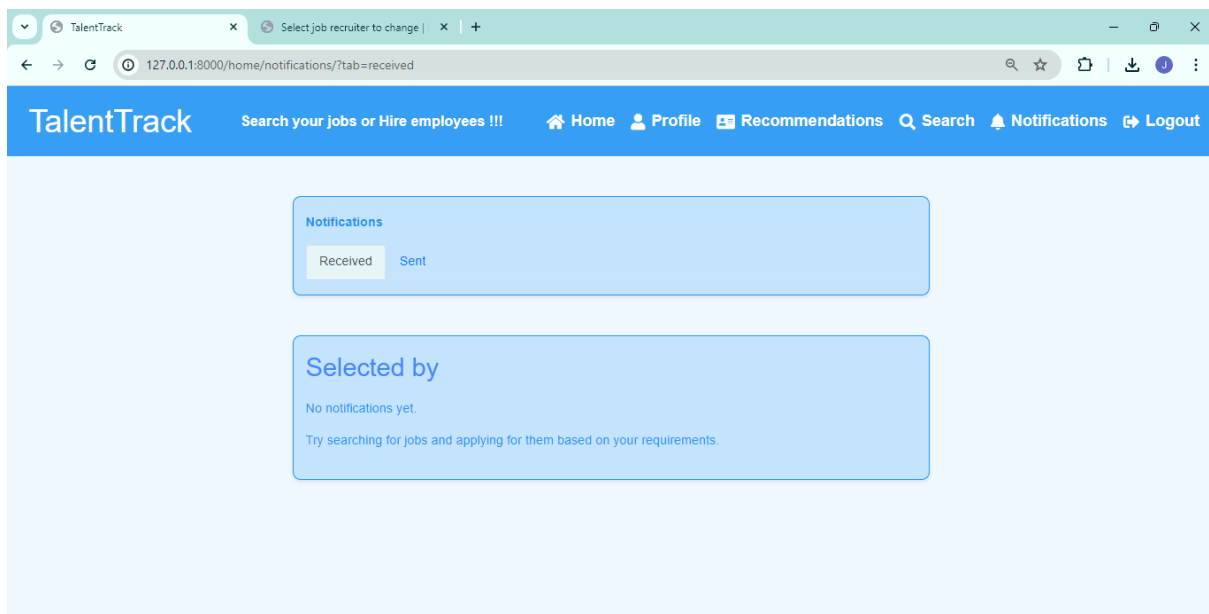
Work Shift:

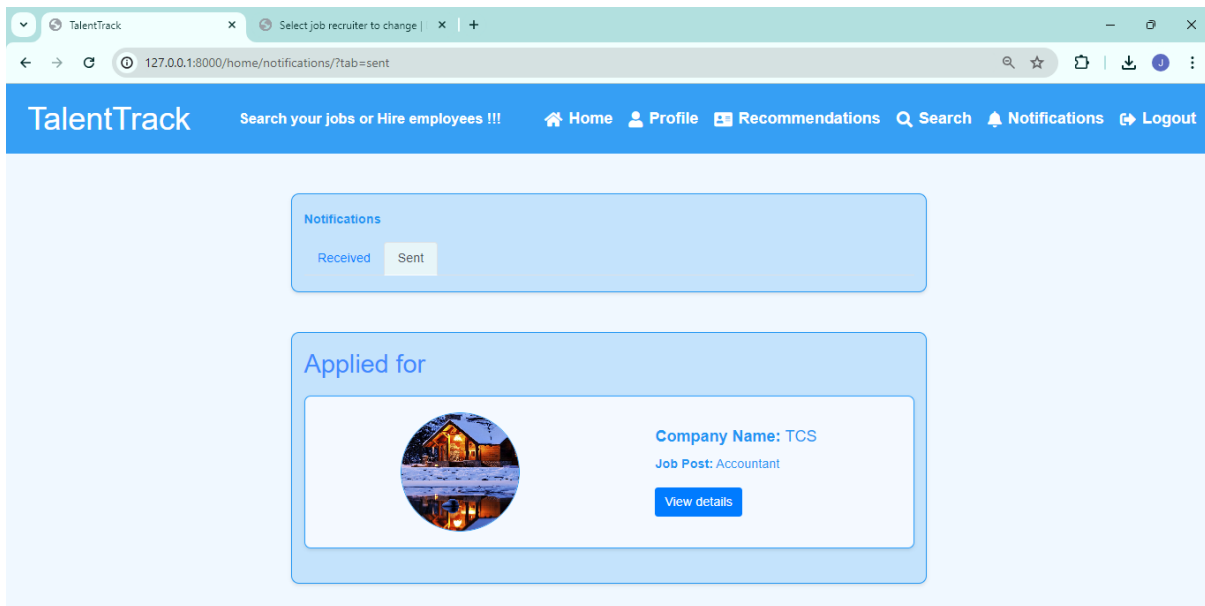
Any

Search Results :



Notifications :





8. Limitations of the solution provided :

1. Lack of Google Authentication:

- The platform does not include Google authentication, which limits users to standard registration and login methods. Integrating Google authentication could enhance user convenience and security by allowing them to log in using their existing Google accounts.

2. Portal-Only Notifications:

- Users can view notifications only within the portal. Notifications are not sent to their emails, which may lead to users missing important updates if they are not regularly checking the portal.

3. No Feedback Mechanism:

- The system currently lacks a feedback mechanism, meaning users cannot provide feedback on their experience. Implementing a feedback system would help in gathering valuable user insights to improve the platform.

4. Limited Integration with External Job Platforms:

- While the platform includes match, search, notifications, FAQ, and profile management modules, it does not integrate with external job platforms. Integration with platforms like LinkedIn, Indeed, or Glassdoor could expand the reach of job postings and enhance job matching by providing more opportunities for users.

5. No Direct Communication Channel:

The platform does not provide ways for direct communication between job seekers and recruiters. Adding features such as messaging or chat would facilitate more efficient and immediate interactions, improving the overall recruitment experience.

9. Observations from the Societal, Legal, Environmental and Ethical perspectives:

Equal Opportunity:

Ensuring equal opportunity for all job seekers regardless of their background, gender, race, ethnicity, religion, or any other characteristic is essential. The platform should avoid any discriminatory practices in job matching and recruitment processes to promote fairness and inclusivity in the job market.

Privacy Protection:

Respecting the privacy of job seekers' personal information and data is paramount. The platform must adhere to strict privacy policies and regulations to safeguard sensitive information such as resumes, contact details, and employment history. Consent should be obtained before sharing any personal data with recruiters or third-party entities.

Transparency:

Maintaining transparency in job matching algorithms and processes is crucial to building trust among users. Job seekers and recruiters should understand how matches are made and the criteria used in the selection process. Transparency also includes disclosing any fees or charges associated with using the platform.

Anti-discrimination:

The platform must actively prevent discrimination in job matching based on protected characteristics. Algorithms and processes should be carefully designed and regularly monitored to identify and mitigate biases that could lead to unfair treatment of certain groups of job seekers.

Compliance with Employment Laws:

Adhering to local and international employment laws and regulations is essential. This includes compliance with anti-discrimination laws, minimum wage requirements, employment eligibility verification, and other labor standards. Failure to comply with these laws could result in legal liabilities and reputational damage.

Ethical Job Posting:

Job postings should accurately represent the job requirements, responsibilities, and compensation to ensure transparency and fairness to job seekers. Misleading or deceptive job postings can lead to dissatisfaction among applicants and damage the reputation of both recruiters and the platform.

Protection Against Exploitation:

Preventing exploitation of vulnerable job seekers, such as interns, entry-level workers, or individuals in precarious employment situations, is crucial. The platform should prohibit postings that promote exploitative practices, such as unpaid internships, unpaid trial work, or unsafe working conditions

10. Learning Outcomes

Understanding of Recruitment Processes: Gained deep insights into the complexities of job matching and recruitment by simulating real-world scenarios.

Collaboration and Teamwork: Emphasized effective collaboration and communication, coordinating tasks, and leveraging team strengths to achieve goals.

Problem-Solving and Critical Thinking: Fostered critical thinking and creative problem-solving by addressing the needs of job seekers and recruiters and designing appropriate solutions.

Project Management: Acquired practical project management experience, including planning, organizing, and executing tasks within set timelines.

User Experience Design: Gained experience in designing user-friendly interfaces, crucial for creating an intuitive and engaging platform. Encountered various kinds of errors during the design phase and learnt how to resolve different kinds of error thereby improving our debugging skills.

11. References

11.1. Articles

Allen, D., Mahto, R., & Otondo, R. (2007). Web-based recruitment: Effects of information, organizational brand, and attitudes toward a Web site on applicant attraction. *Journal of Applied Psychology*, 92(6), 1696–1708. doi:10.1037/0021-9010.92.6.1696

Cober, R., Brown, D., Keeping, L., & Levy, P. (2004). Recruitment on the net: How do organizational web site characteristics influence applicant attraction? *Journal of Management*, 30(5), 623–646.

11.2. Web Sites

Job Portal System

<https://www.slideshare.net/shahsmzh/online-job-portal-uml-diagrams>

Online Job Portal UML Diagrams

https://www.slideshare.net/Umang_jain/job-portal-project-documentary

Job Portal Project Documentary

https://www.slideshare.net/tawseef_sofi/virtual-job-portal-system

Virtual Job Portal System

LinkedIn Talent Solutions. (2023). "How LinkedIn Matches Job Seekers and Recruiters." Retrieved from <https://business.linkedin.com/talent-solutions>