

Software Design Document

# **Insight Glass**

Aser Osama - 202101266  
Aya Sherif - 202100642  
Gehan Sherif - 201902069  
Omar Ayman 202100443

Version 1.0  
April 8, 2024

# Contents

<b>1</b>	<b>Project Overview</b>	<b>2</b>
1.1	Project idea . . . . .	2
1.2	Vision . . . . .	2
1.3	Competitive Analysis . . . . .	2
<b>2</b>	<b>System Technical Overview</b>	<b>3</b>
2.1	System Architecture . . . . .	3
2.2	Used Technologies . . . . .	3
<b>3</b>	<b>Biggest Challenges and Mitigations</b>	<b>4</b>
3.1	Challenges . . . . .	4
3.2	Solutions . . . . .	4
<b>4</b>	<b>Feasibility Matrix</b>	<b>4</b>
<b>5</b>	<b>GUI for functional requirements</b>	<b>5</b>
5.1	User Interfaces . . . . .	5
<b>6</b>	<b>System Design</b>	<b>11</b>
<b>7</b>	<b>Functional Requirements</b>	<b>15</b>
7.1	User Registration and Authentication: . . . . .	15
7.2	Profile Management: . . . . .	15
7.3	Advanced Job Search Filters: . . . . .	15
7.4	Comprehensive Company Profiles: . . . . .	15
7.5	Transparent Job Listings: . . . . .	15
7.6	Career Advice: . . . . .	16
7.7	Interactive Discussion Forums: . . . . .	16
7.8	Direct Communication Channels: . . . . .	16
7.9	Salary Benchmarking Tools: . . . . .	16
7.10	Feedback and Ratings System: . . . . .	16
7.11	Integration with Social Media Platforms: . . . . .	16
7.12	Interview Preparation Resources: . . . . .	17
7.13	Analytics and Insights Dashboard: . . . . .	17
<b>8</b>	<b>Non-Functional Requirements</b>	<b>17</b>
8.1	Performance and Scalability . . . . .	17
8.2	Data Privacy and Security Compliance . . . . .	17
<b>A</b>	<b>Appendix A: Glossary</b>	<b>17</b>
<b>B</b>	<b>Appendix B: Feasibility Study</b>	<b>17</b>
<b>C</b>	<b>Appendix C: Issue Log</b>	<b>17</b>

# 1 Project Overview

## 1.1 Project idea

Our project's main goal is to help professionals from different disciplines start their careers at companies where they can thrive. This will be achieved through radical transparency of the companies, breaking down all barriers and problems in the Egyptian job markets that lead to discrimination, pay gaps, and toxic work environments.

## 1.2 Vision

The vision is to transform the Egyptian job market by empowering individuals to make informed decisions about their career path. The project aims to address common issues of job seekers struggling to identify suitable employment opportunities and being locked into unfavorable work environments due to contractual obligations. By providing comprehensive insight into the company and facilitating transparent communication between job seekers and employers, the project seeks to create a dynamic ecosystem that fosters mutual growth, and they are satisfied

## 1.3 Competitive Analysis

In Egypt's job market, traditional methods of hiring still dominate, with a reliance on personal connections and in-person applications. However, the emergence of online platforms has introduced new avenues for job seekers. Two prominent competitors in this space are Glassdoor.

### **Glassdoor**

Glassdoor, our main competitor, is a well-established platform known for providing company reviews, salary information, and job listings. While it offers valuable insights into company cultures and employee experiences globally, its adaptation to the Egyptian context might be limited. Glassdoor primarily relies on user-generated content, which may vary in quantity and quality, especially for companies with a smaller presence in Egypt. Additionally, the platform's focus on larger corporations might overlook opportunities within smaller or niche companies in the Egyptian job market.

## 2 System Technical Overview

### 2.1 System Architecture

We will use a simple, reliable, yet scalable architecture. We will use a Frontend and API connecting to a backend model. It is a simple model, however, it will be comfortably scalable using Kubernetes, Azure, or any other load balancers as we expand to have more people using our service. We will use virtualization in expandability and have spare servers be there in case of breakdowns to minimize downtime.

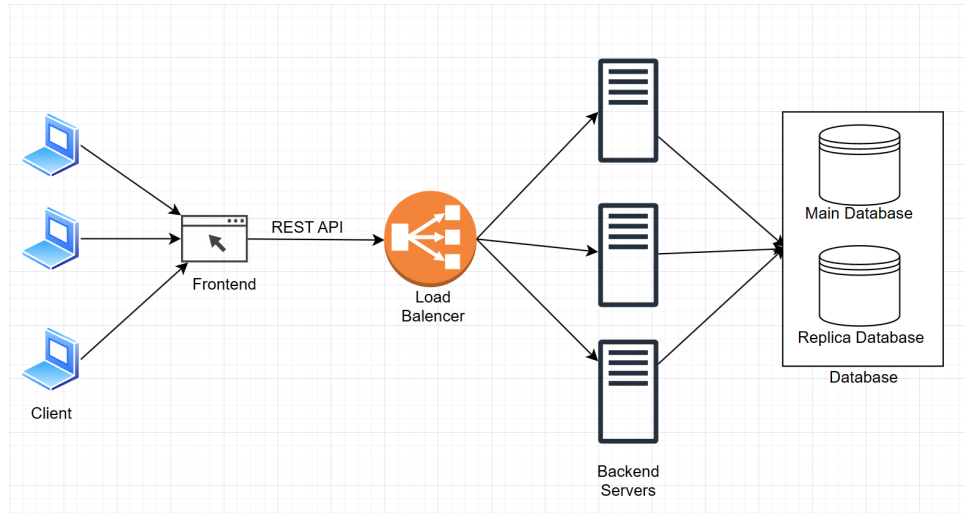


Figure 1: System Architecture Overview

### 2.2 Used Technologies

- **Frontend:** React.js for building a responsive and dynamic user interface
- **Backend:** ASP.NET Web API in .NET 8 for server-side logic, providing a reliable and efficient foundation.
- **Database:** MySQL/MariaDB for storing user data, reviews, and job listings, chosen for its flexibility with schema design and easy to find support. Interaction with the database will be through the Entity Framework Core ORM
- **Authentication:** Identity framework with cookie-based authentication will be used.

## 3 Biggest Challenges and Mitigations

### 3.1 Challenges

Egypt is currently very behind in terms of modernizing the hiring process, therefore it would be incredibly difficult to try and convince companies and people to change their old ways. Adoption of the application will also be difficult due to the reason we would most likely function as a startup which is also not looked to highly of in Egypt. Aside from initial adoption of the application, building a community of verified employees to provide us with reviews and insight might be also difficult as people tend to not be as open with salaries or job experience here. We will be challenging a lot of old stereotypes and set in stone rules of the workplace with our application. A more technical issue we might face are fake reviews. Finally, the legalities of sharing job reviews and such are not too certain in Egypt so it could be risky if not dealt with correctly.

### 3.2 Solutions

The technical issue of fake reviews could be easily solved by adding multiple human verification stages to our website as well as requiring identification and proof of employment to be able to post reviews that would affect the overall company rating while also keeping a section for unverified reviews. As for the adoption issues, however, we could attempt to gain the user's trust by getting affiliation with trusted companies or businesses figures. However, it is most likely that the issue would simple be resolved with time and we have no real choice to kickstart our popularity. Finally, for the legalities, we could employ a part time or on demand legal team to help us sort it out.

## 4 Feasibility Matrix

Table 1: Feasibility Assessment

Criteria	Description	Score	Weight	Total Score
Technical Feasibility	The project's technical requirements include platform development and data gathering processes.	4	25	100
Economic Feasibility	The financial viability of the project, including initial investment, operating costs, and revenue generation.	3	20	60
Legal Feasibility	Compliance with legal regulations and potential risks related to data privacy, intellectual property, etc.	4	20	80
Operational Feasibility	The project's practical implementation and operational processes, including user engagement and support.	5	35	175

## 5 GUI for functional requirements

### 5.1 User Interfaces

Below are pages that shows the main flow and functionality of Insight Glass

1. First view of the home page

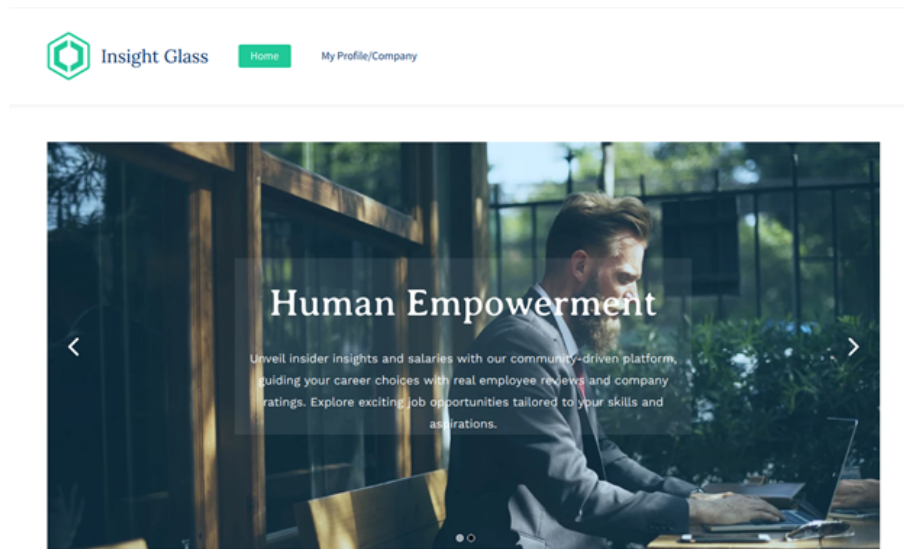


Figure 2: First view of the home page (1 out of 2)

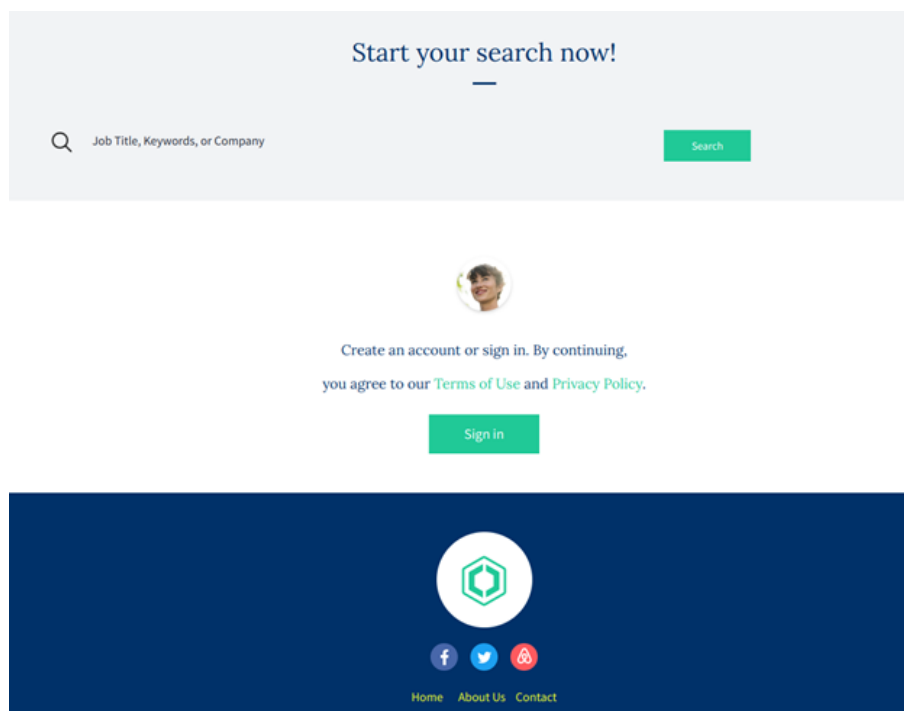


Figure 3: First view of the home page (2 out of 2)

## 2. Second view of the home page

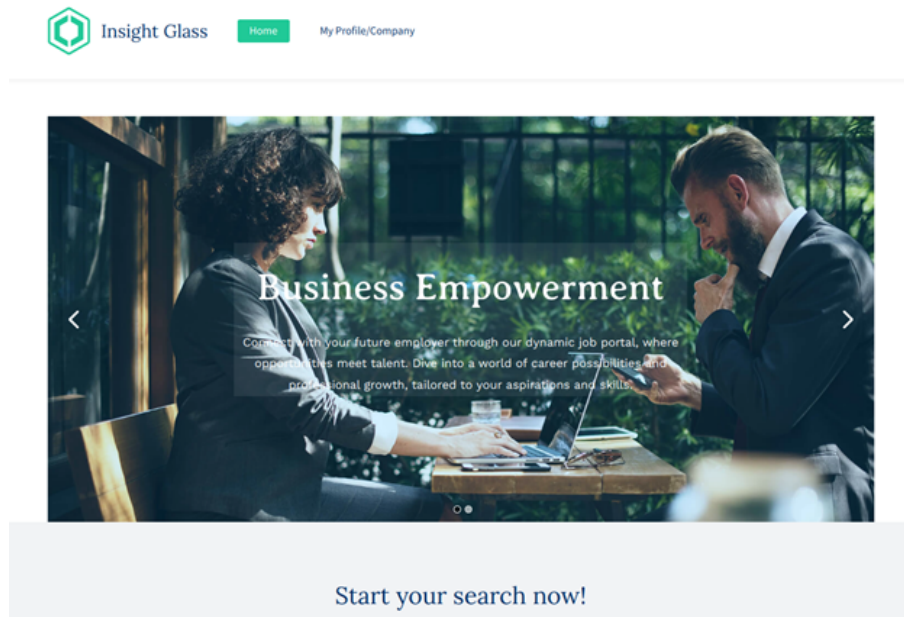


Figure 4: Second view of the home page

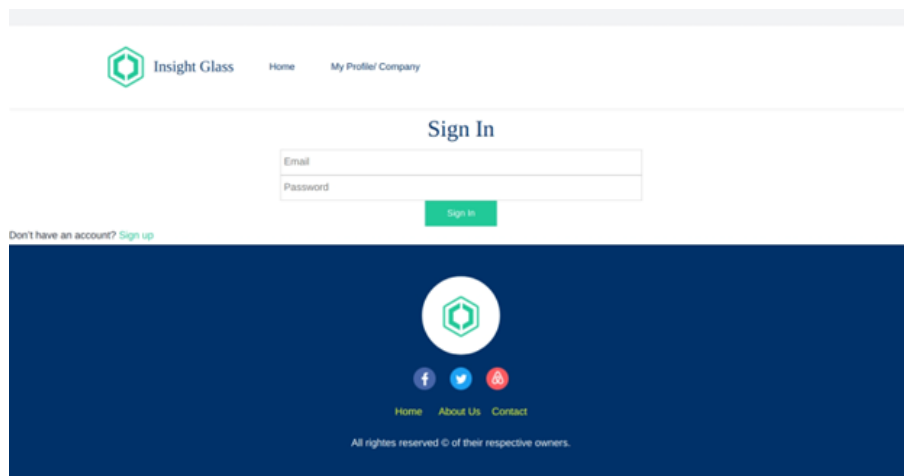
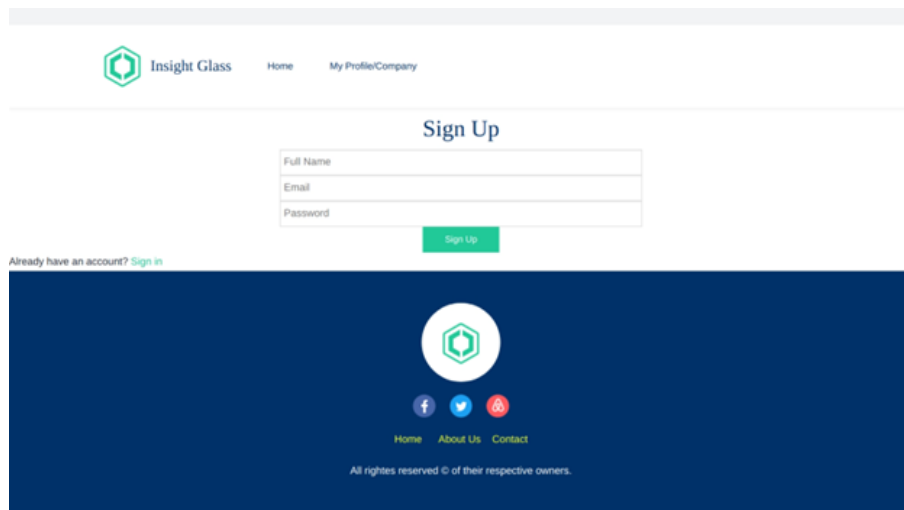


Figure 5: Sign in page

### 3. Sign up page



The Sign Up page features a header with the Insight Glass logo and navigation links for Home and My Profile/Company. The main content area is titled "Sign Up" and contains a form with three input fields: Full Name, Email, and Password. A green Sign Up button is positioned below the form. A link for "Already have an account? Sign in" is located to the left of the button. The footer includes a dark blue section with the Insight Glass logo, social media icons for Facebook, Twitter, and LinkedIn, and links for Home, About Us, and Contact. A copyright notice is also present.

Insight Glass Home My Profile/Company

## Sign Up

Full Name

Email

Password

Sign Up

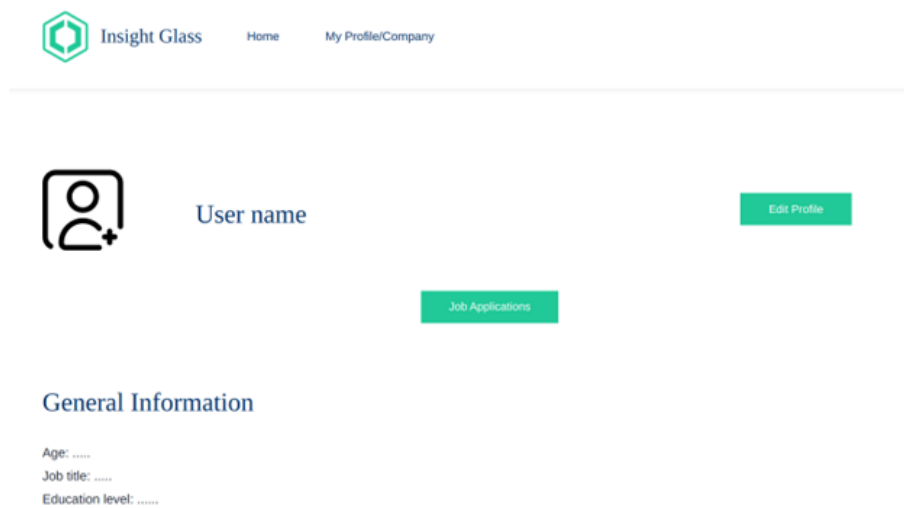
Already have an account? [Sign in](#)

Home About Us Contact

All rights reserved © of their respective owners.

Figure 6: Sign up page

### 4. User profile



The User profile page features a header with the Insight Glass logo and navigation links for Home and My Profile/Company. The main content area displays a user profile card with a placeholder icon for a profile picture, the text "User name", and an Edit Profile button. Below the profile card is a Job Applications button. The footer section is titled "General Information" and contains three input fields for Age, Job title, and Education level.

Insight Glass Home My Profile/Company

User name

Edit Profile

Job Applications

## General Information

Age: .....

Job title: .....

Education level: .....

Figure 7: User profile page (1 out of 2)



## Experience

Position: .....  
Company: .....  
Start date: .....  
End date: .....  
Location: .....  
Location Type: .....

## Education

Degree: .....  
Institution: .....  
Graduation year: .....

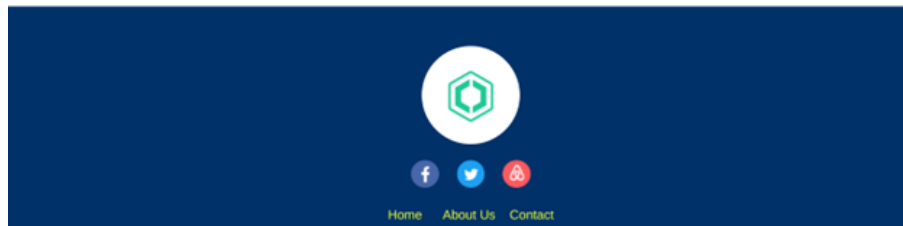


Figure 8: User profile page (2 out of 2)

## 5. Company Profile

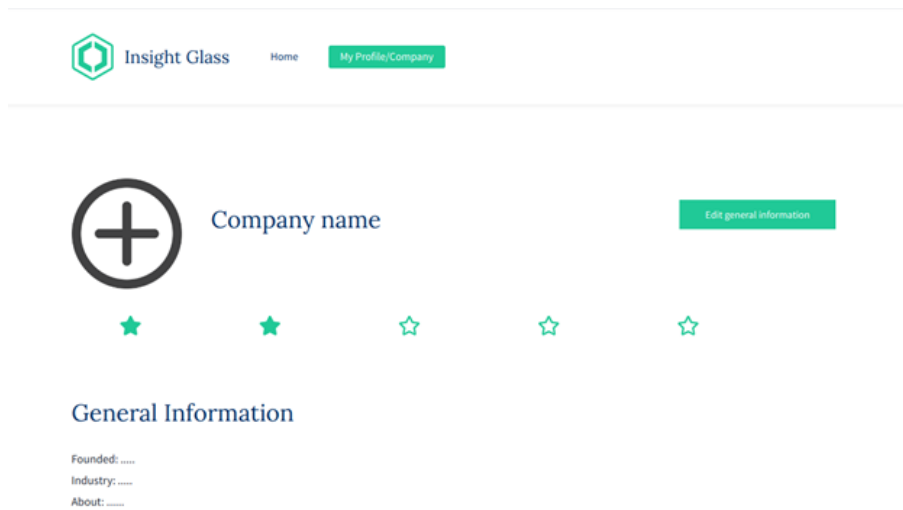


Figure 9: Company profile page (1 out of 2)

## Reviews

Reviewer name: .....

Rating: ★★★★★

Comment: .....

Reviewer name: .....

Rating: ★★★★★

Comment: .....

## Job Opened Positions

Add

Remove

Job Title: .....

Description: .....

Qualifications: .....


Job Title: .....

Description: .....

Qualifications: .....

Figure 10: Company profile page (2 out of 2)

### 6. Search for a job page


 Insight Glass

HomeMy Profile/Company

Search Results


Q Devops Engineer

Search

 IBM


DevOps Engineer

Remotely.

 Google


DevOps Engineer

On Site: Cairo, Egypt.

 Nokia

DevOps Engineer

Hybrid: Aswan, Egypt.

 Nokia

DevOps Engineer

Hybrid: Aswan, Egypt.

**Job Description:** The DevOps Engineer optimizes and automates development and operational tasks to improve software deployment cycles, ensuring high performance and scalability of systems. This role involves collaboration with cross-functional teams to implement CI/CD pipelines, manage cloud infrastructure, and maintain system security and reliability.


**Qualifications:** Required skills include a Bachelor's degree in Computer Science or a related field, experience with cloud services (AWS, Azure, Google Cloud), proficiency in scripting (Python, Bash), and knowledge of CI/CD tools. Preferred qualifications encompass certifications in cloud technologies, experience with containerization (Docker, Kubernetes), and a background in network security.

Submitted


Withdraw

Figure 11: Search for a job page


7. Search for a company page



Facebook  
Industry: Social Media  
Rate: ★★☆☆



X  
Industry: Social Media  
Rate: ★★★★★



Facebook  
Industry: Social Media  
Rate: ★★☆☆

Founded:

About:

Reviews:

Reviewer name: .....

Rating: ★★☆☆

Comment: .....

.....

Reviewer name: .....

Rating: ★★☆☆

Comment: .....

Submit Review

Job Opened Positions:

Job Title: .....


Description: .....

Qualifications: .....

Apply

Figure 12: Search for a company page

8. Admin page

 Insight Glass

[Home](#)

[My Profile/Company](#)

Admin

Reviewer name: .....

Company: .....

Rating: ★☆☆☆

Comment: .....

.....

Reviewer name: .....

Company: .....

Rating: ★★☆☆

Comment: .....

.....

Reviewer name: .....

Company: .....

Rating: ★★★★★

Comment: .....

Remove all selected

Figure 13: Admin page

## 6 System Design

Below is the class diagram of the main objects in Insight Glass:

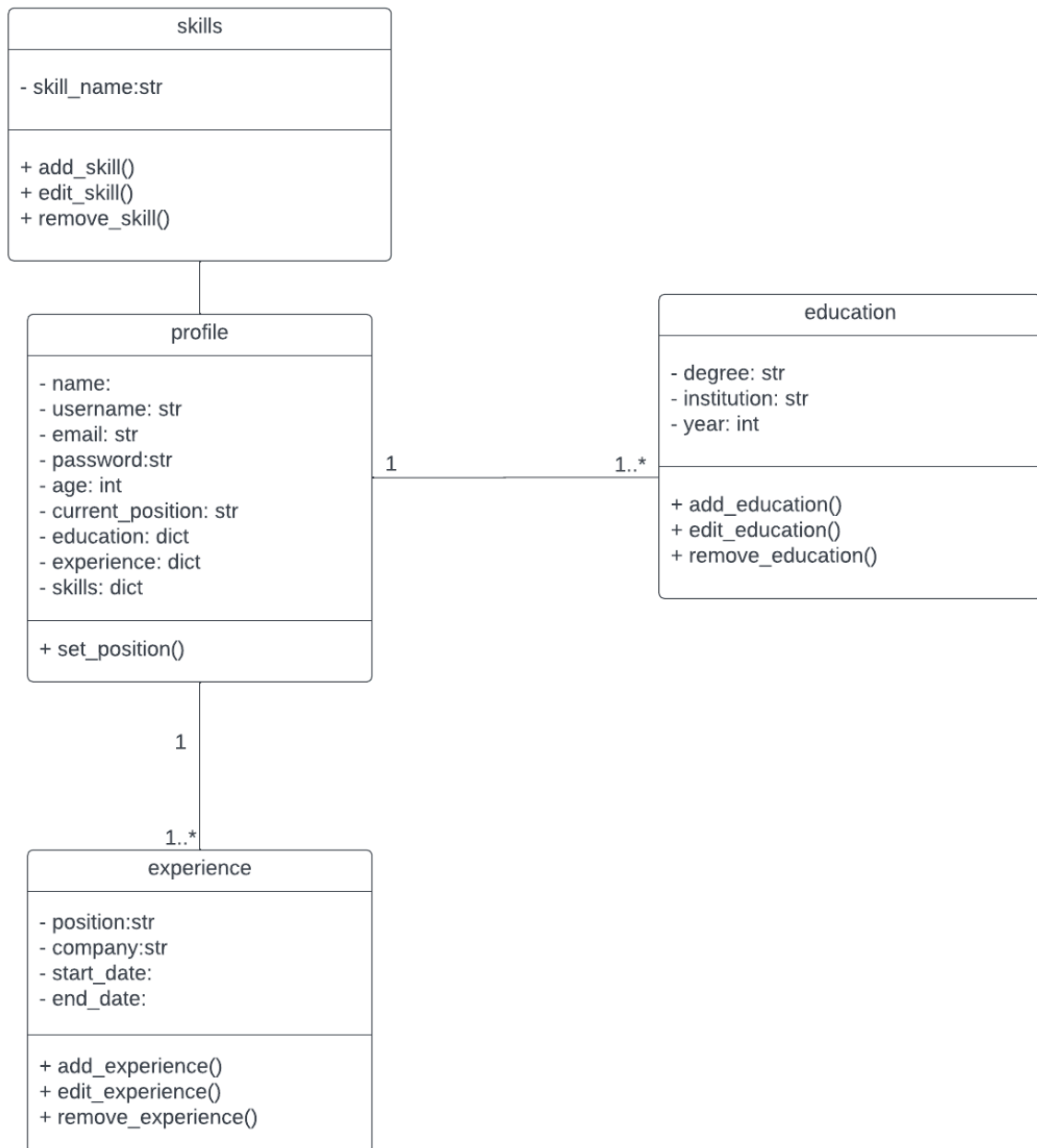


Figure 14: Classes of Insight Glass

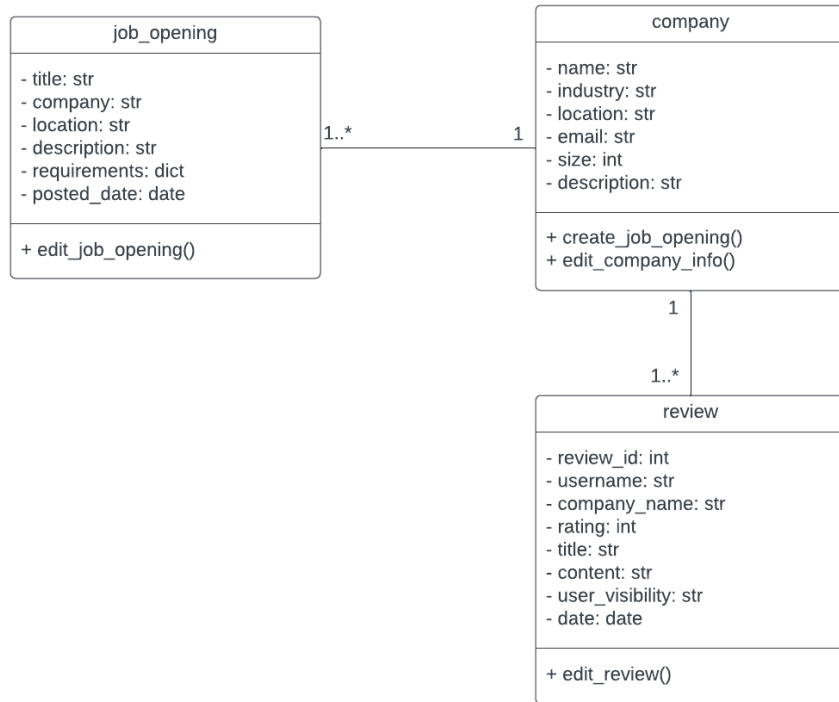


Figure 15: Classes of Insight Glass

In the following use case diagram, we depict how a user can search for some company and sort their choices using Insight Glass functionalities.

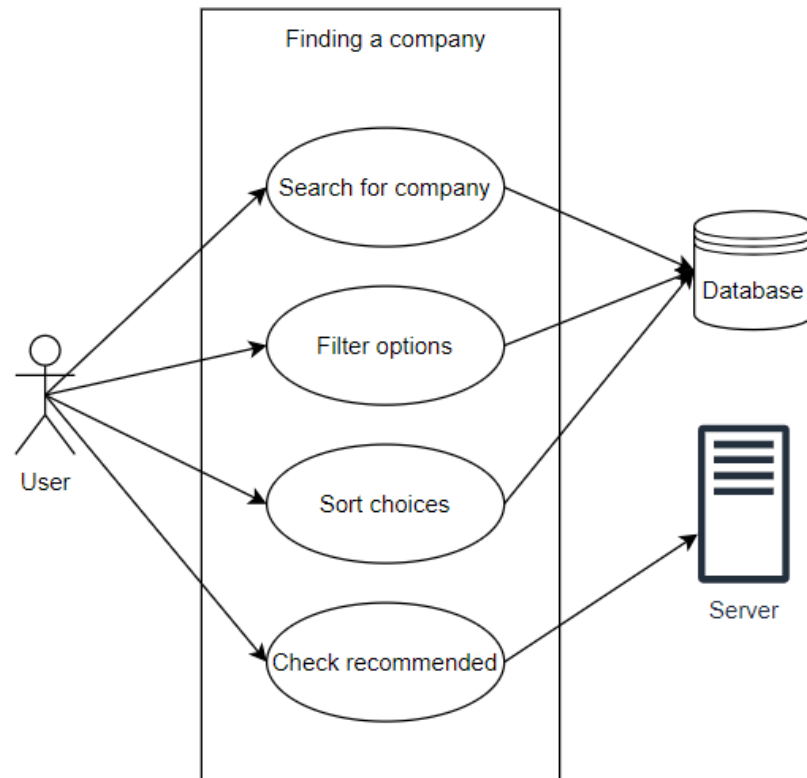


Figure 16: Use case diagram for finding a company

Another use case diagram shows how an employee can give a feedback for a certain company.

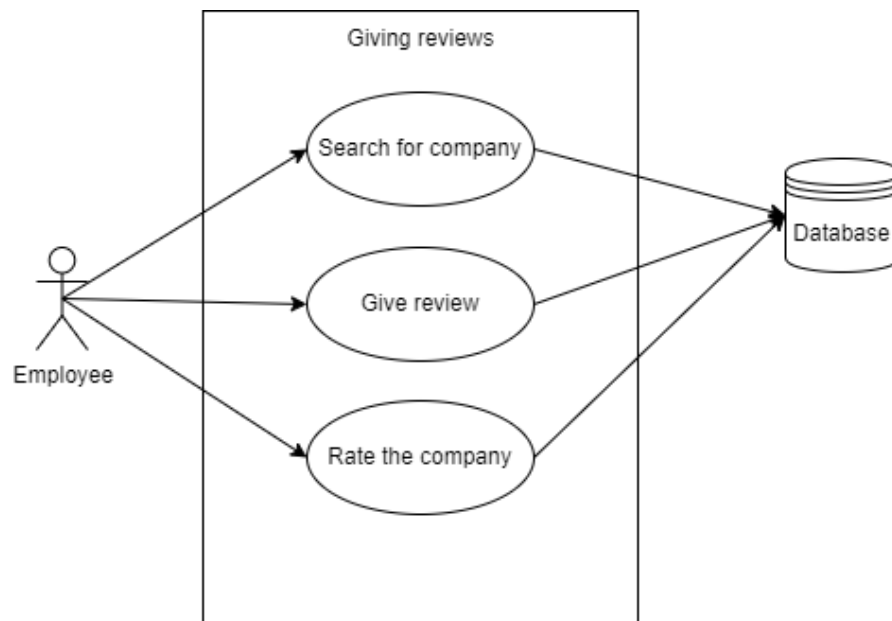


Figure 17: Context diagram for Insight Glass

A third use case diagram shows how a job seeker can search for a job, shown below.

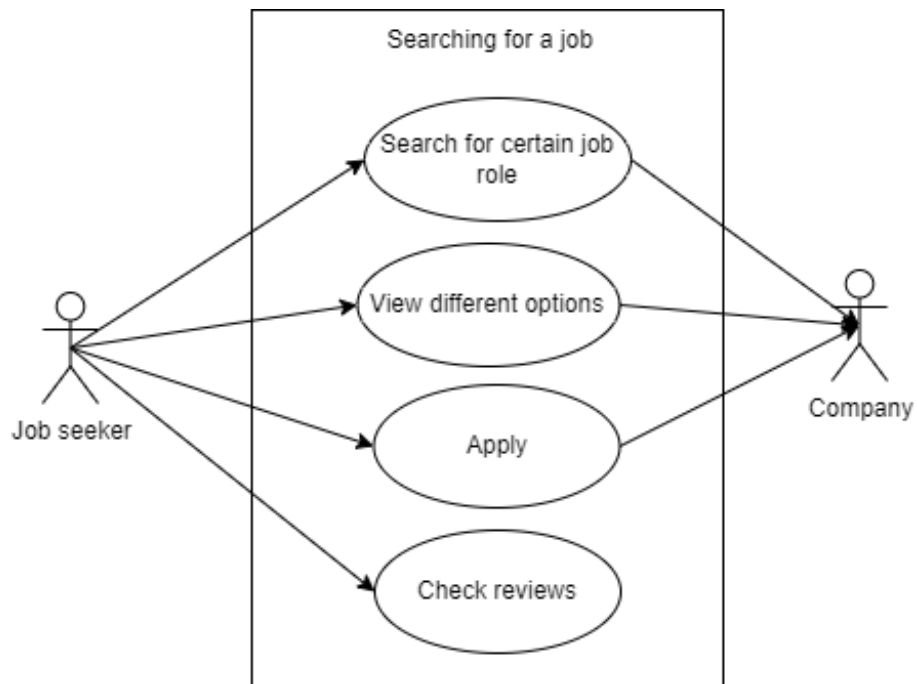


Figure 18: Context diagram for Insight Glass

The following is a context diagram that represents the relationship between data and business processes visually.

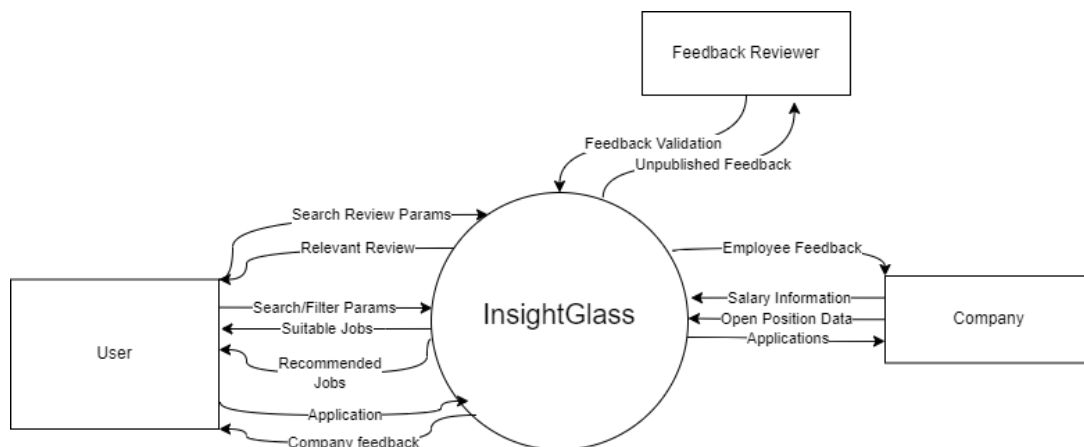


Figure 19: Context diagram for Insight Glass

The relations between different classes and packages of the system can be shown using a conceptual model as in the figure below.

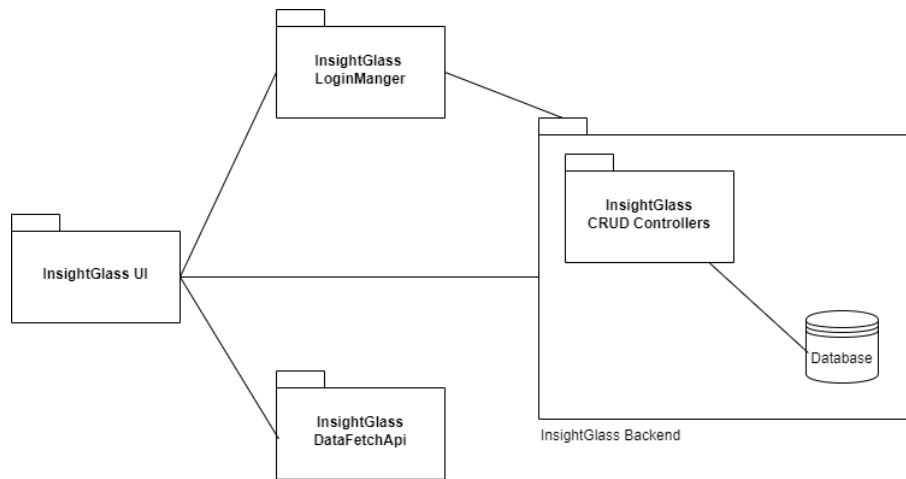


Figure 20: Conceptual model for Insight Glass

## 7 Functional Requirements

### 7.1 User Registration and Authentication:

- Users can create an account by providing basic information such as email, username, and password.
- Users can authenticate their account through email verification or other methods to ensure security.

### 7.2 Profile Management:

- Users can create and maintain a personal profile showcasing their skills, experience, and education.
- Users can edit and update their profile information, including work history, education, certifications, and skills.
- Users can upload and manage their resume, cover letters, and other relevant documents.

### 7.3 Advanced Job Search Filters:

- Users can search for job openings by keyword, location, industry, or company.
- User can filter job listings based on criteria such as salary, job type, and experience level.

### 7.4 Comprehensive Company Profiles:

- Users can request the inclusion of companies not listed on the platform, expanding the range of available job opportunities. For example, a CEO of a software company can create a profile for his company.
- Users can access detailed profiles of companies, providing comprehensive information about the organization.
- Users can view key details such as company size, revenue, headquarters location, and founding year.
- Users can view employee testimonials to gain insights into the workplace environment.

### 7.5 Transparent Job Listings:

- Users can access job listings that provide detailed information about the position, including responsibilities, qualifications, and benefits.
- Users can access insights or reviews from current or former employees about the hiring company to gain context about the work environment.



- Users can track the status of their applications and receive updates or notifications about changes in the job listing, such as application deadlines or interview invitations.

## **7.6 Career Advice:**

- Users can access articles, tips, and resources related to career development, job searching, and workplace issues.
- Users can participate in forums or Q&A sections to seek advice from experts and peers.
- Users can receive personalized career advice based on their interests, goals, and experience level,

## **7.7 Interactive Discussion Forums:**

- Users can join specialized chat channels or forums dedicated to some disciplines as software engineering to discuss different offers and job opportunities.
- Users can engage with industry experts or mentors through Q&A sessions, AMA (Ask Me Anything) events, or one-on-one consultations.

## **7.8 Direct Communication Channels:**

- Users can directly message companies or hiring managers to inquire about job openings, company culture, and application processes.
- Job seekers can gather more information about potential employers before applying to a specific job opening.

## **7.9 Salary Benchmarking Tools:**

- Users should have access to comprehensive salary data for various job positions and industries, giving insights into average salaries, salary ranges, and compensation trends for specific roles and geographic locations.
- Users can compare their salary against peers with similar backgrounds, roles, and experience.
- Salary benchmarking tools offer visualizations such as charts, graphs, and reports to present salary data in an easily digestible format.

## **7.10 Feedback and Ratings System:**

- Users can provide feedback and ratings on their experiences with companies, including aspects such as company culture, work-life balance, management, and career growth opportunities. Reviews and ratings may be subject to verification processes to ensure their authenticity and reliability.
- Users can rate companies, job listings, and interview experiences on a standardized scale (e.g., star ratings or numerical scores).
- Users have the option to provide feedback anonymously, allowing them to share honest and candid opinions without fear of repercussions.

## **7.11 Integration with Social Media Platforms:**

- Users can easily share job listings, company profiles, and other relevant content from the platform to their social media accounts.
- Users have the option to link their platform profiles with their social media accounts, increasing their visibility and networking opportunities.
- Employers and recruiters can promote job openings and employer branding initiatives through their social media channels, reaching a broader audience of potential candidates.

### **7.12 Interview Preparation Resources:**

Users can share and access interview experiences specific to the Egyptian job market, including insights on common interview questions, cultural expectations, and company-specific practices.

- Users can access comprehensive guides and resources to prepare for various types of interviews, including behavioral interviews, technical interviews, case interviews, and competency-based interviews.
- Users can receive feedback on their resumes, cover letters, and portfolios from industry experts or career coaches.

### **7.13 Analytics and Insights Dashboard:**

- Administrators should have access to an analytics and insights dashboard to track user engagement, job market trends, and platform performance metrics. The dashboard should provide comprehensive data visualization and analysis tools for monitoring user activity, such as job searches, applications, and interactions.

## **8 Non-Functional Requirements**

### **8.1 Performance and Scalability**

The platform should be highly responsive, with fast loading times and smooth navigation, ensuring a seamless user experience for job seekers and employers accessing the platform from various devices and locations across Egypt. The system architecture should be scalable to accommodate growing user traffic and data volume, allowing the platform to handle increased user activity and maintain performance reliability during peak usage periods.

### **8.2 Data Privacy and Security Compliance**

The platform should adhere to strict data privacy and security standards, ensuring the confidentiality, integrity, and availability of user data. Compliance measures should align with Egyptian data protection regulations, such as the Data Protection Law, ensuring that user information is stored, processed, and transmitted securely to mitigate the risk of unauthorized access, data breaches, and privacy violations.

## **A Appendix A: Glossary**

## **B Appendix B: Feasibility Study**

## **C Appendix C: Issue Log**