

# ISLAMIC UNIVERSITY OF TECHNOLOGY

*Board Bazar, Gazipur, Dhaka*



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## Software Design and Architecture: SWE 4602 Structural , Behavioral , and UI Design of a Software

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# 1 Introduction

HireNow is a Java-based software application developed to provide a streamlined platform for job posting and recruitment. The system is designed with two distinct user roles: *Job Seekers* and *Job Hirers*, each equipped with specific features and interactions to ensure an efficient and user-friendly experience in the hiring process.

The primary objective of this application is to enable Job Hirers to post detailed job listings by providing essential information such as the company name, job title, expected salary, job nature (remote, on-site, or hybrid), required skills, experience requirements (specific or flexible), working hours, and any prerequisites associated with the role.

On the other hand, Job Seekers can browse through available job postings using an interactive card-based interface. They can view the full details of each job and apply by submitting a comprehensive application form. This form includes personal information (name, phone number, email), a CV upload, skill set, experience, and academic qualifications where applicable. Each submission is securely stored in the system's database for review.

Job Hirers can access a list of applicants for each job they have posted. They are provided with functionalities to review each application and update its status as *Accepted*, *Rejected*, or *Pending*. Job Seekers can then log in to track the status of their applications in real-time.

The application promotes digital transformation in the recruitment process by enhancing communication between employers and candidates. HireNow serves as a compact yet efficient platform tailored for small to medium-scale job recruitment scenarios.

As part of this software design and architecture project, the system is documented with a focus on three main aspects: structural design, behavioral design, and user interface design. The structural design includes class diagrams, object diagrams, component diagrams, and deployment diagrams, which collectively represent the static organization and deployment of the system components. The behavioral design captures the dynamic behavior of the application through use case diagrams, activity diagrams, and sequence diagrams, highlighting user interactions and system responses. Finally, the user interface design focuses on user analysis, task analysis, and visual interface mockups, providing an overview of how different user roles will interact with the system. Together, these components form a comprehensive architectural blueprint for the development and implementation of the HireNow application.

## 2 Team Members And Contribution

### 2.1 Team Members

1. Nabila Islam - 210042111
2. Ishmaam Iftekhhar Khan - 210042125
3. Nusrat Siddique - 210042131

### 2.2 Contribution

Contribution	Student ID
Introduction	210042131
Class Diagram	210042111
Object Diagram	210042131
Component Diagram	210042125
Deployment Diagram	210042125
Use Case Diagram	210042111 and 210042125
Activity Diagram for different systems	210042111 and 210042131
Sequence Diagram	210042131
User Analysis	210042125
Task Analysis	210042111
Demo Interfaces	HomePage and Browse jobs pages: 210042111 Job application form pages: 210042125 Application status page: 210042131 Post job form: 210042125 Hirer Dashboard: 210042131 Job details page: 210042111

Table 1: Team Member Contributions

## 3 Structural Design

### 3.1 Class Diagram

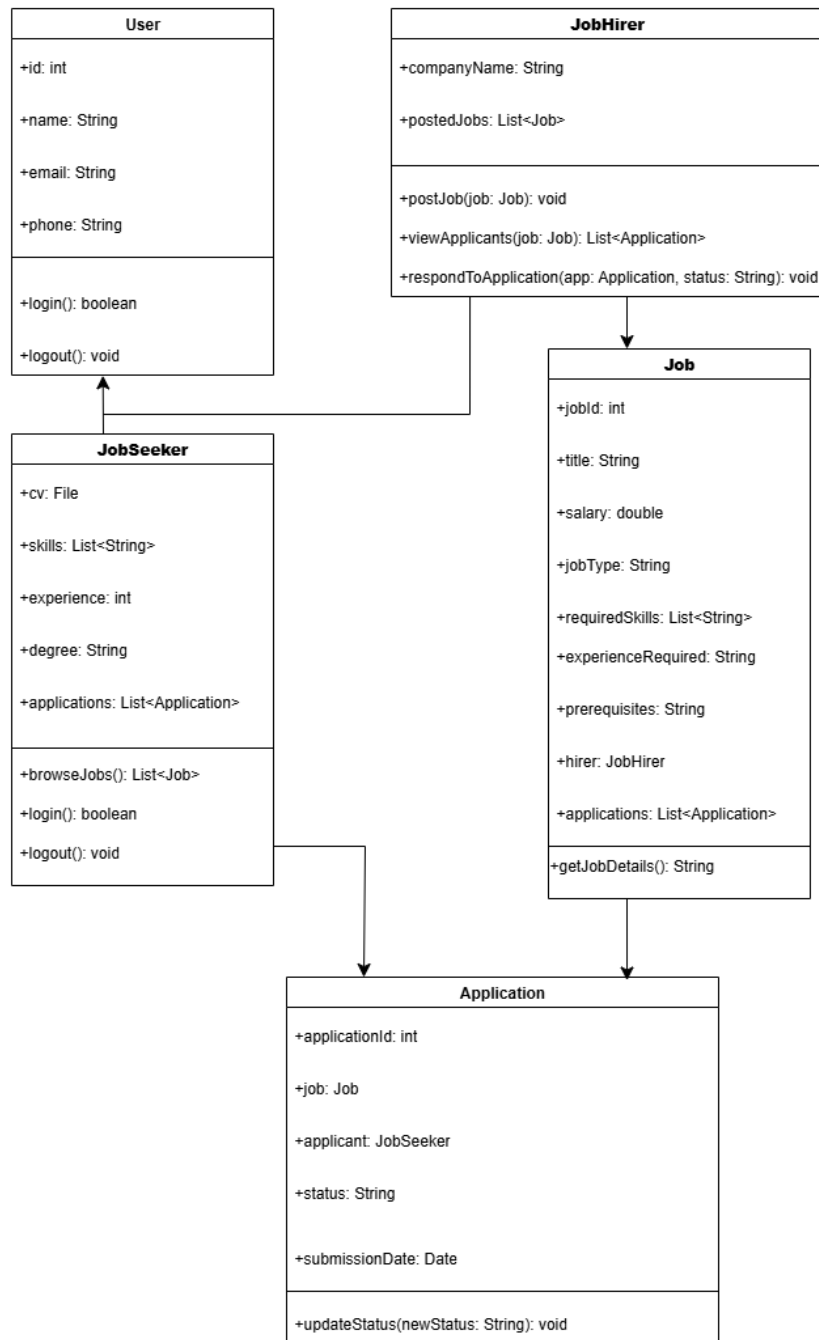


Figure 1: Class Diagram

### 3.2 Object Diagram

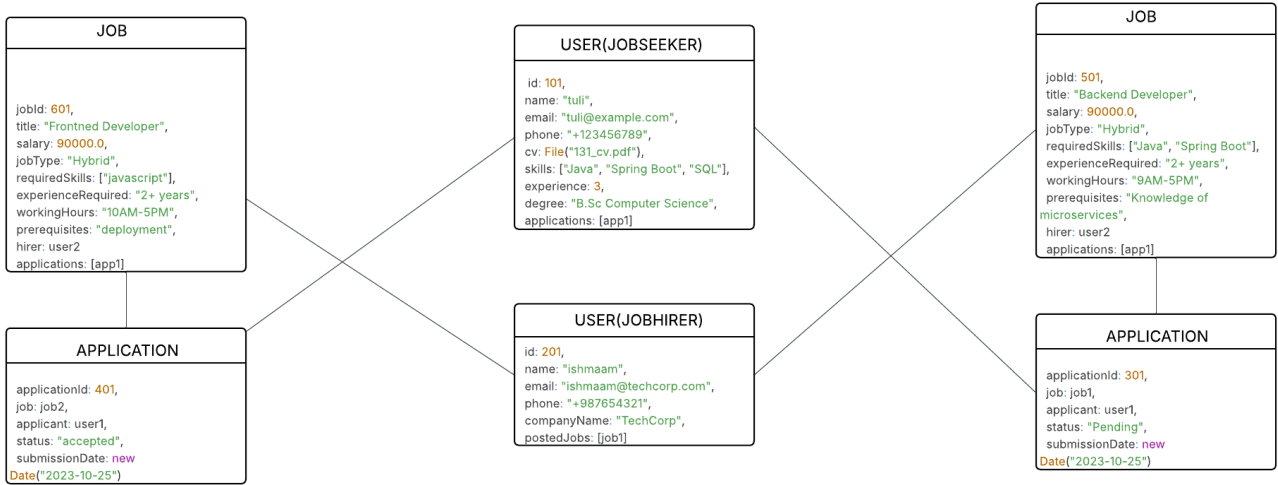


Figure 2: Object Diagram

### 3.3 Component Diagram

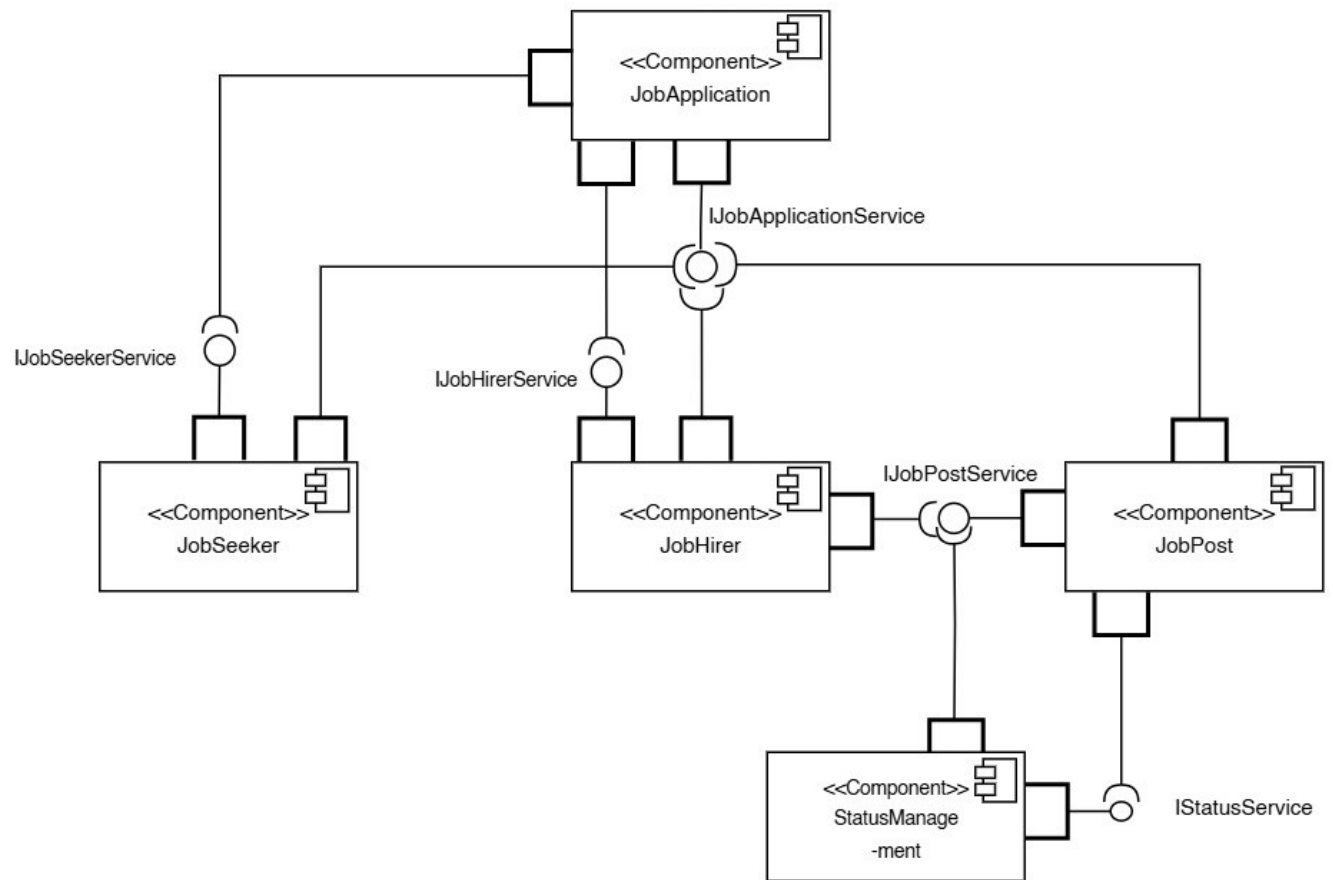


Figure 3: Component Diagram

3.4 Deployment Diagram

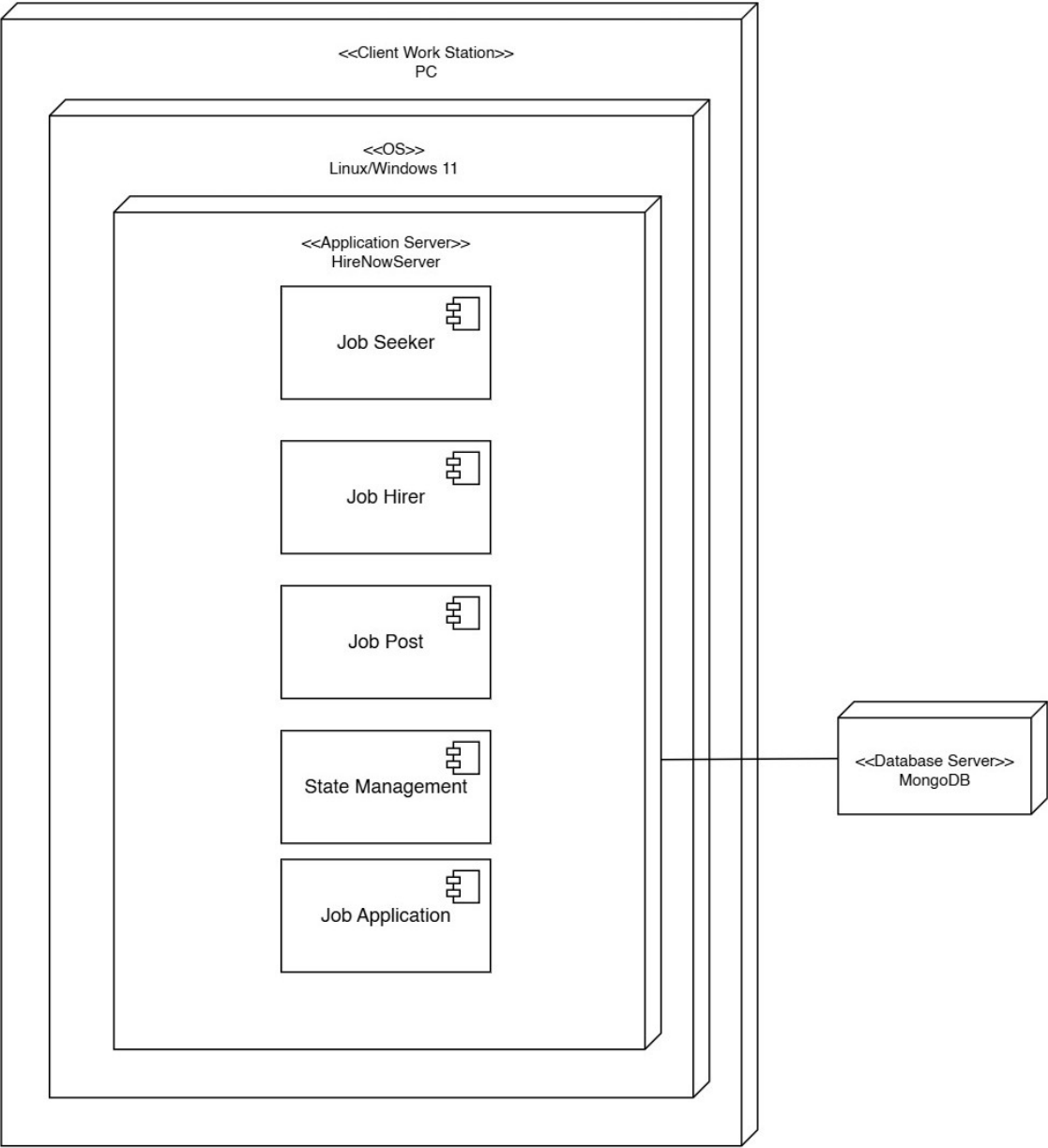


Figure 4: Deployment Diagram



## 4 Behavioral Design

### 4.1 Use Case Diagram

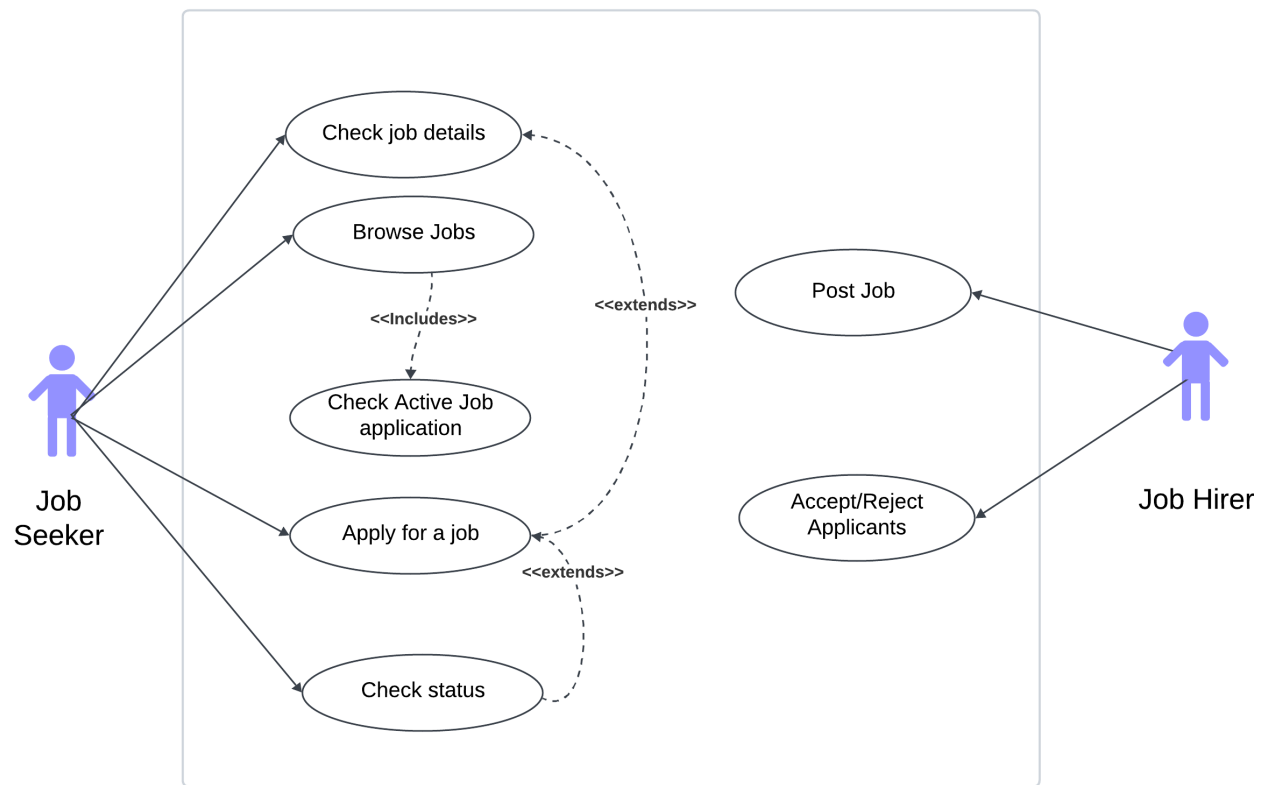


Figure 5: Use Case Diagram

## 4.2 Activity Diagram

### 4.2.1 Post Job Activity Diagram

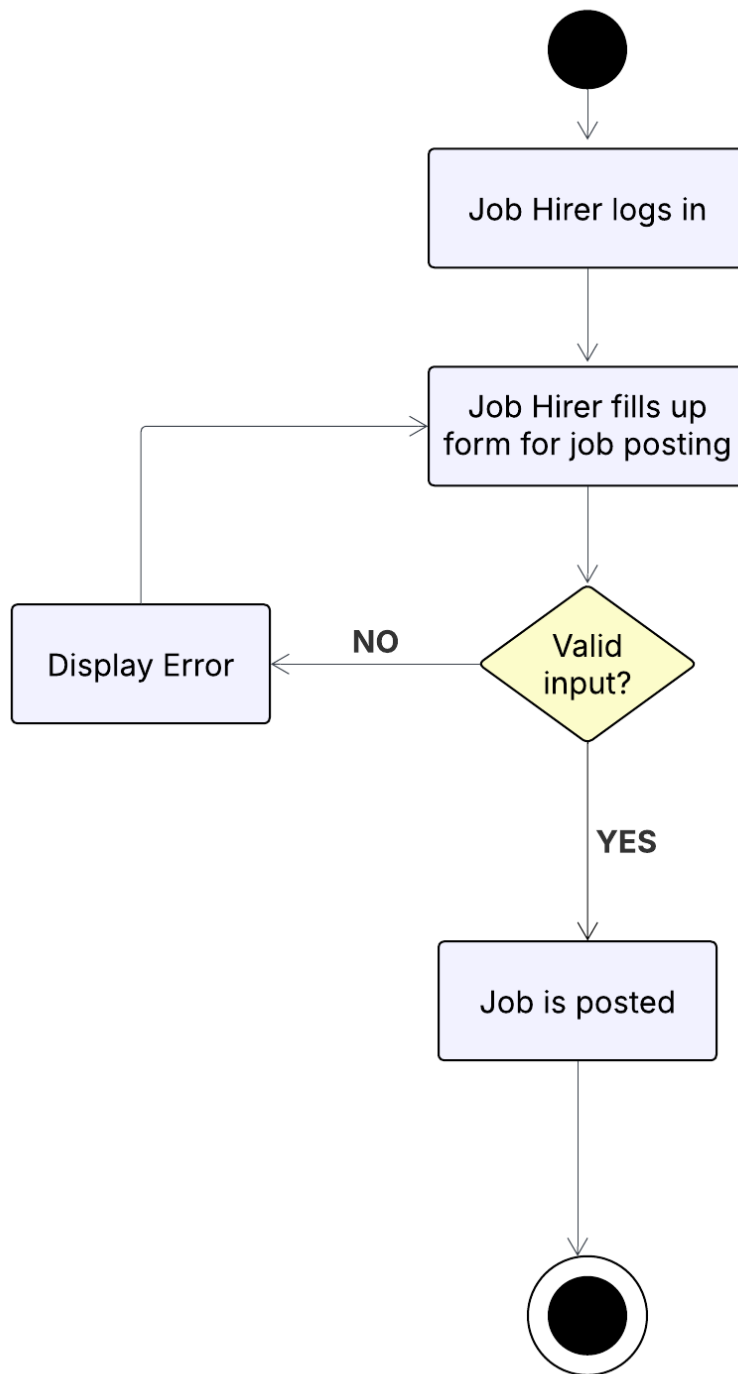


Figure 6: Post Job Activity Diagram

#### 4.2.2 Apply for Job Activity Diagram

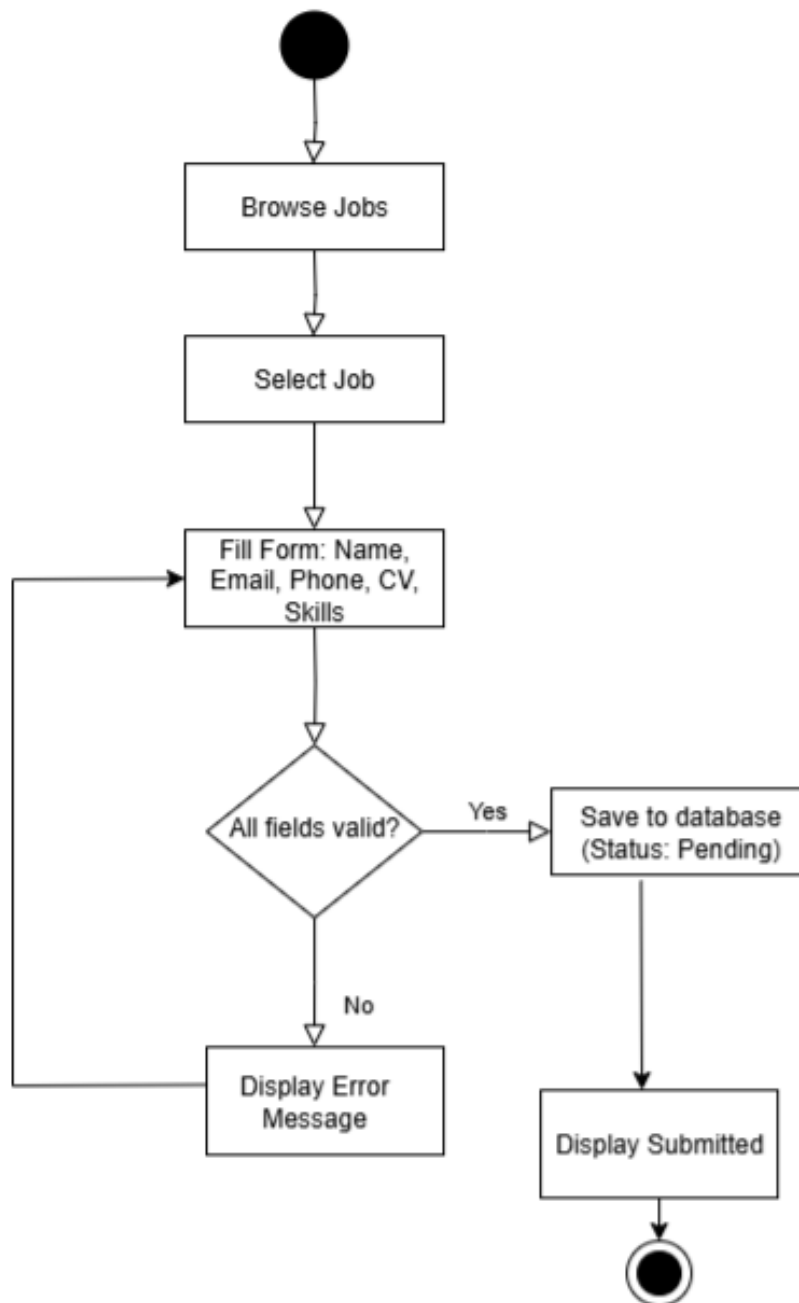


Figure 7: Apply for Job Activity Diagram

### 4.2.3 Browse Jobs Activity Diagram

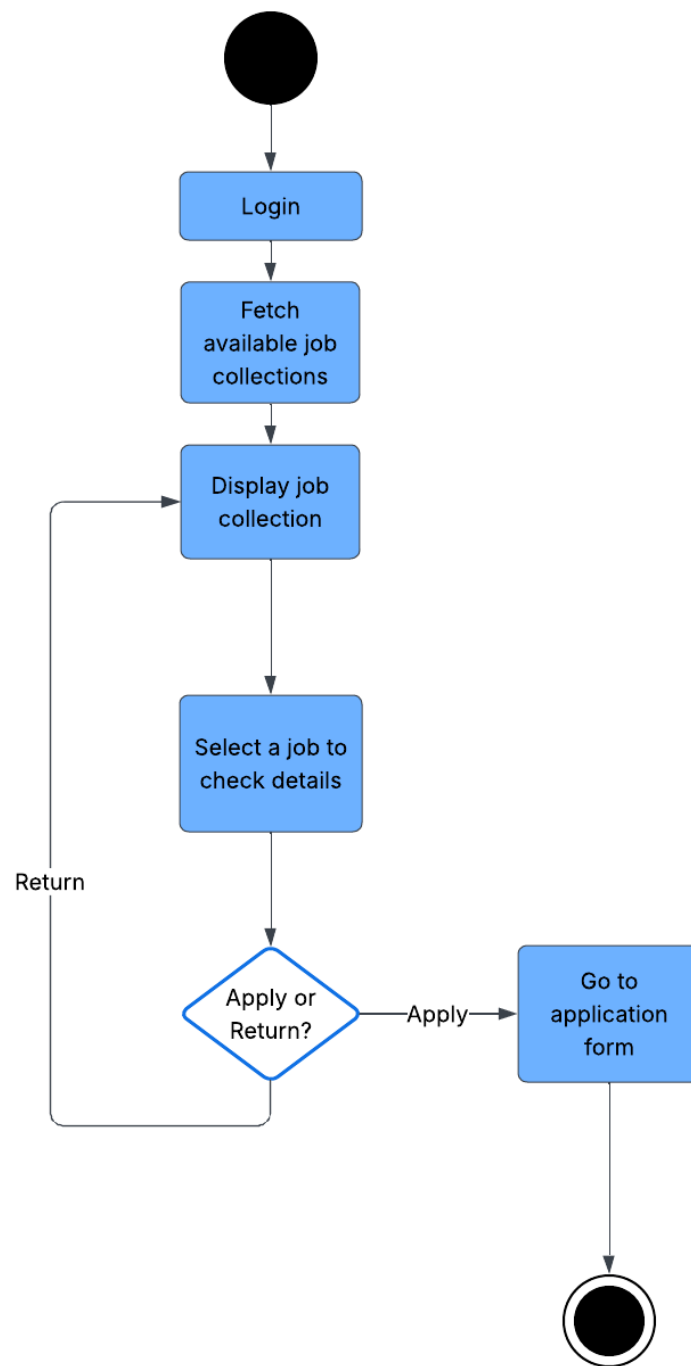


Figure 8: Browse Jobs Activity Diagram

#### 4.2.4 Accept/Reject Job Activity Diagram

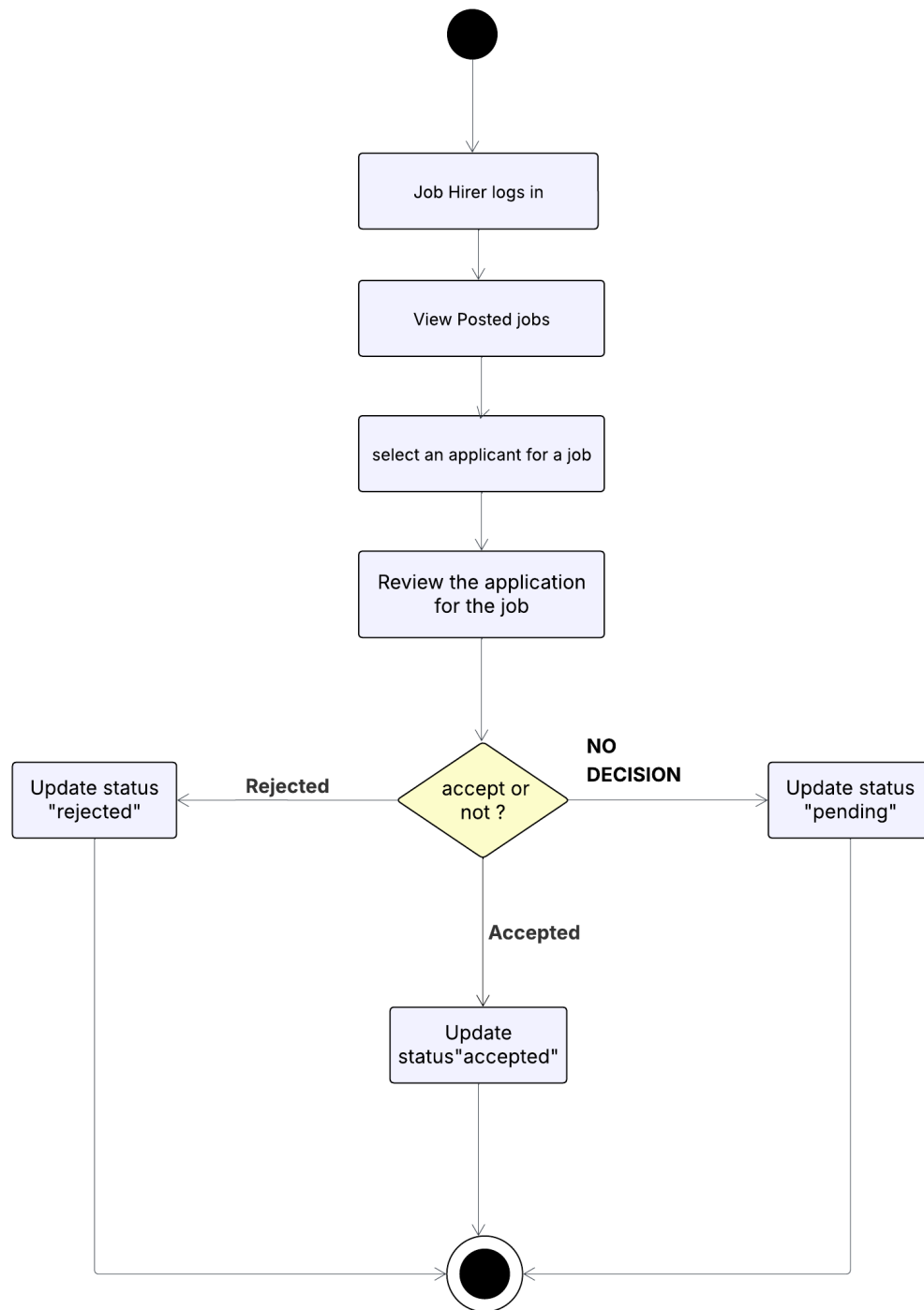


Figure 9: Accept/Reject Job Activity Diagram

#### 4.2.5 Check Application Status Activity Diagram

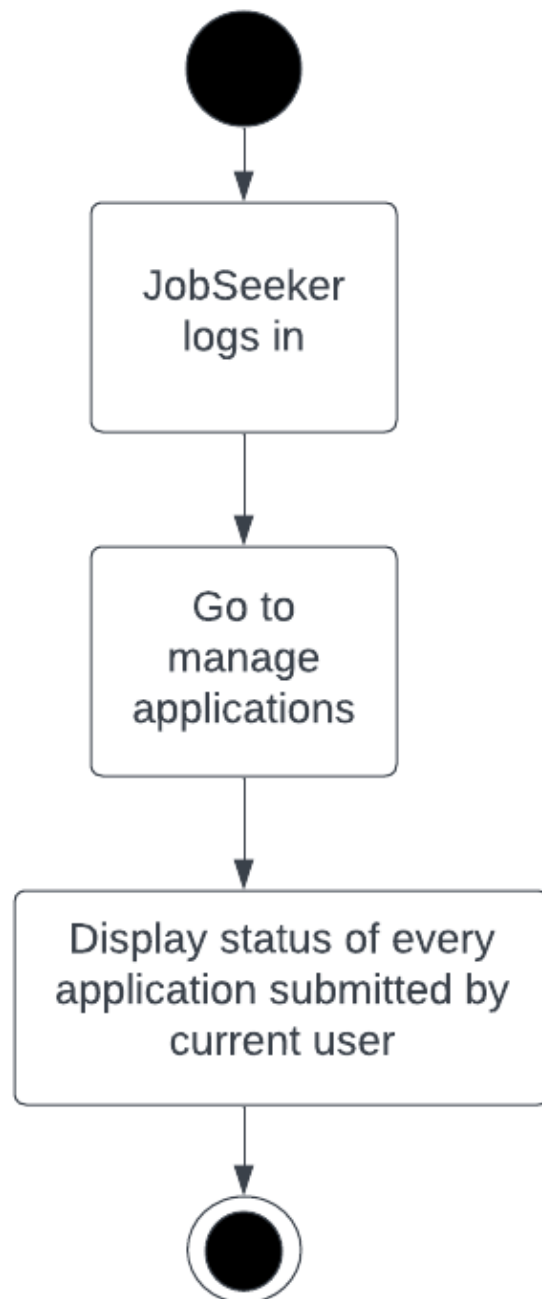


Figure 10: Check Application Status Activity Diagram

4.3 Sequence Diagram

4.3.1 For job Seeker

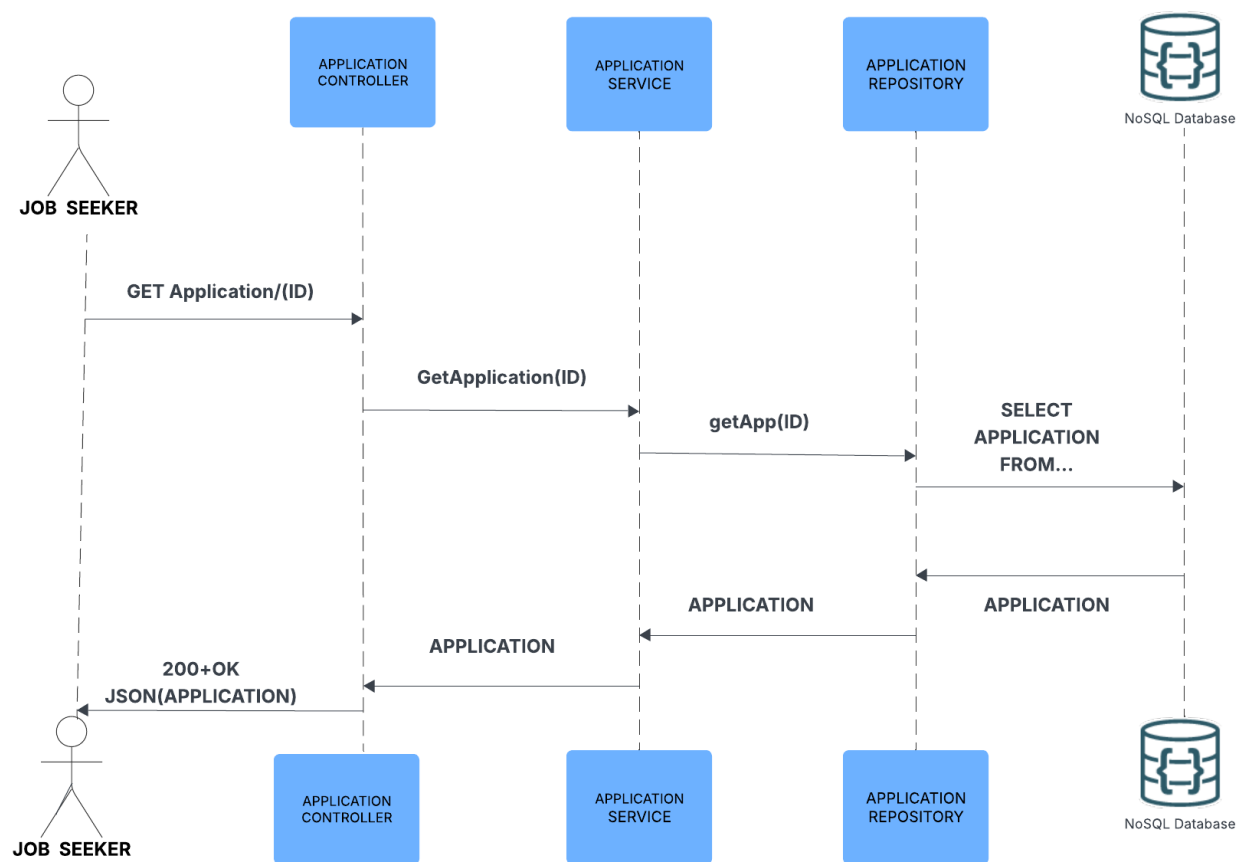


Figure 11: Sequence Diagram for job Seeker

4.3.2 For job Hirer

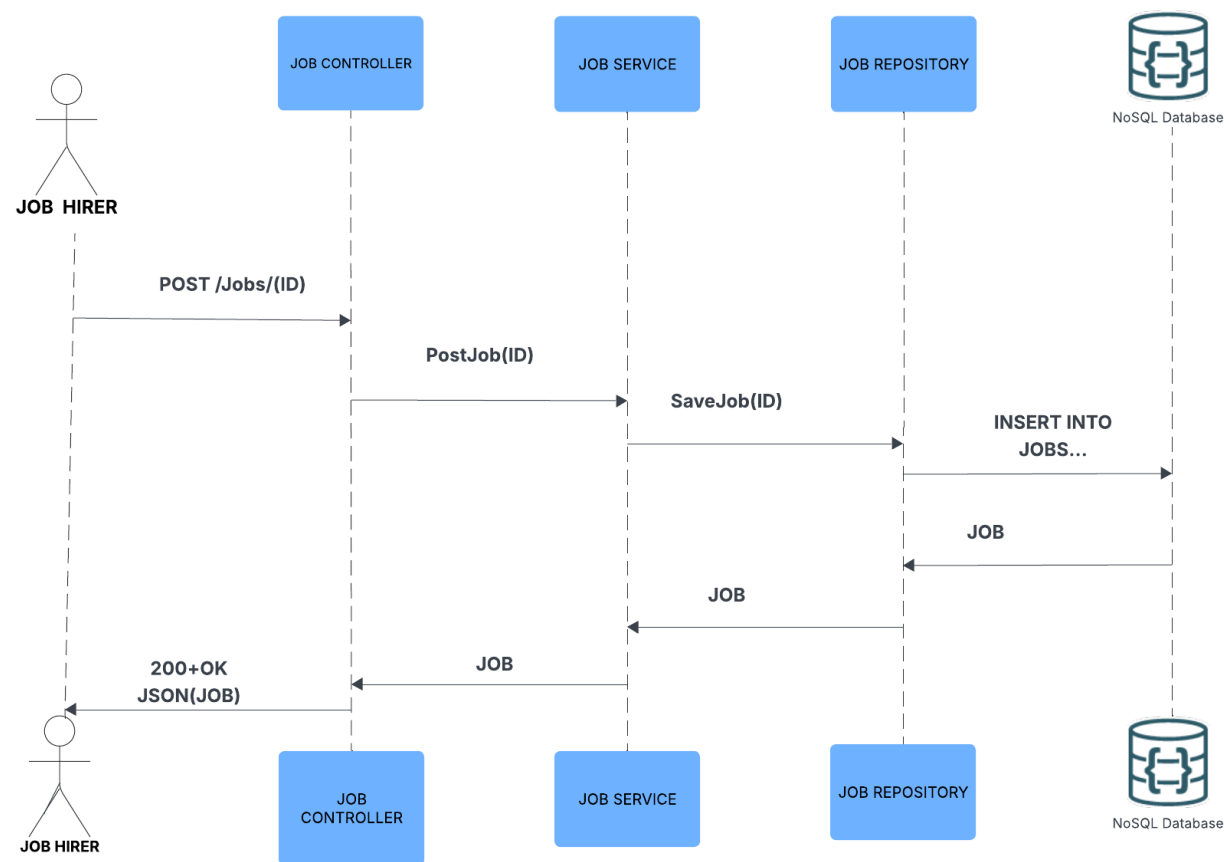


Figure 12: Sequence Diagram for job Hirer



## 5 User Interface Design

### 5.1 User Analysis

#### 5.1.1 For Job Seekers

- The average age range for job seekers is from 18 to 70 years old, and they are expected to have basic computer literacy.
- Job seekers primarily use the application to search and apply for jobs, typically accessing it occasionally during job searches.
- The system provides clear error messages when users enter invalid data, such as incorrect email or missing CV uploads.
- The interface language is English to ensure accessibility for a broad audience.
- The application is optimized for both computers and mobile devices to support different access preferences.

#### 5.1.2 For Job Hirers

- Job hirers are usually 20 to 60 years old, often working in HR or managerial roles, and possess basic computer skills.
- They use the platform regularly—weekly or daily—to post jobs and manage applicants.
- Confirmation dialogues are used to prevent errors during operations like job deletions or applicant decisions.
- The interface is in English for consistency and ease of communication.
- Job hirers primarily use desktop or laptop computers for comfortable handling of job listings and applicants.

#### 5.1.3 For Administrators

- Admin users are typically between 25 and 50 years old, handling job posts, users, and general oversight with basic computer literacy.
- Admins access the system frequently, often daily or weekly, to monitor user activity and job listings.
- The system includes confirmation prompts to prevent accidental deletions or unintended actions.
- English is used throughout the admin interface for consistency with other user roles.
- Admins interact with the system using desktops or laptops to manage and monitor application data efficiently.

## 5.2 Task Analysis

### Task: User Registration Subtasks:

1. Access registration form
2. Fill in personal details
  - i Enter valid email
  - ii Create password
  - iii Provide contact information
3. Submit registration

### Task: User Login Subtasks:

1. Access login page
2. Enter credentials
  - i Input username/email
  - ii Enter password
3. Submit login request
4. Gain access to user account

### Task: Admin - Manage Job Postings Subtasks:

1. Log in to admin panel
2. Navigate to job management
3. Select manage option
4. Enter job details
  - i Input job title and company name
5. Save to database
6. Receive success notification

**Task: Job Seeker - Apply for Jobs Subtasks:**

1. Browse job listings
2. View job details
3. Fill in application form
  - i Enter personal details
  - ii Upload CV
  - iii Provide skills and experience
4. Submit application
5. Receive confirmation

**Task: Job Hirer - Manage Applications Subtasks:**

1. Log in to hirer account
2. View applicants
3. Accept or reject applicants
4. Send application status
5. Receive confirmation

**Task: Job Seeker - Track Application Status Subtasks:**

1. Access application dashboard
2. View application status
3. Receive notifications

## 5.3 Demo Interfaces

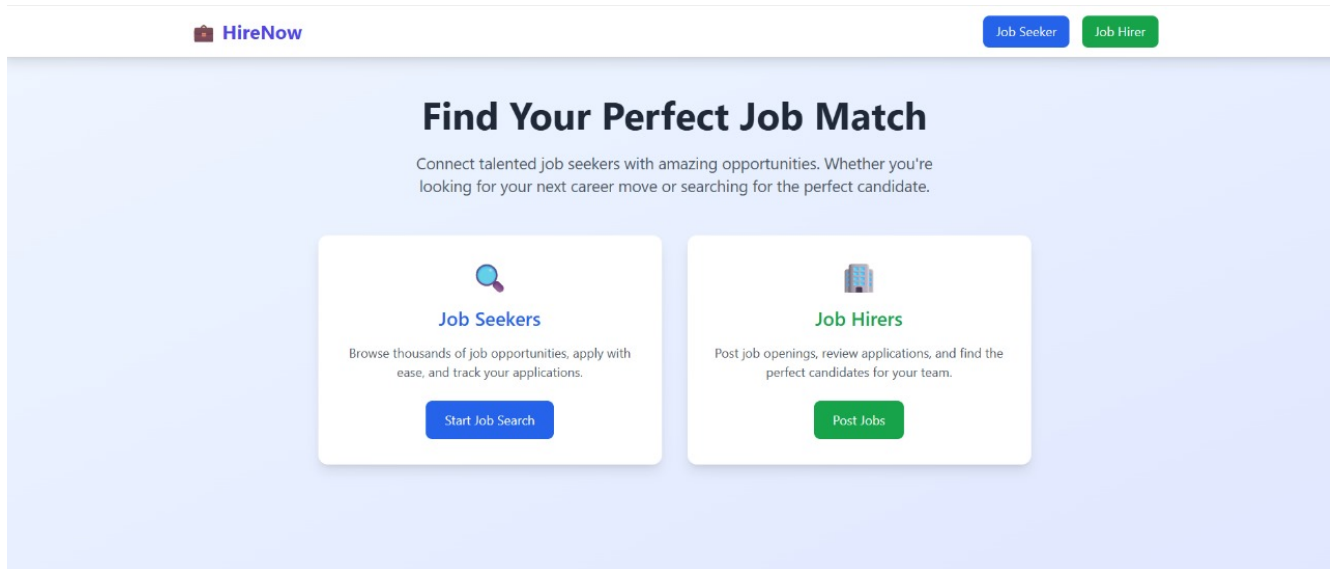


Figure 13: Role Selection Interface for HireNow

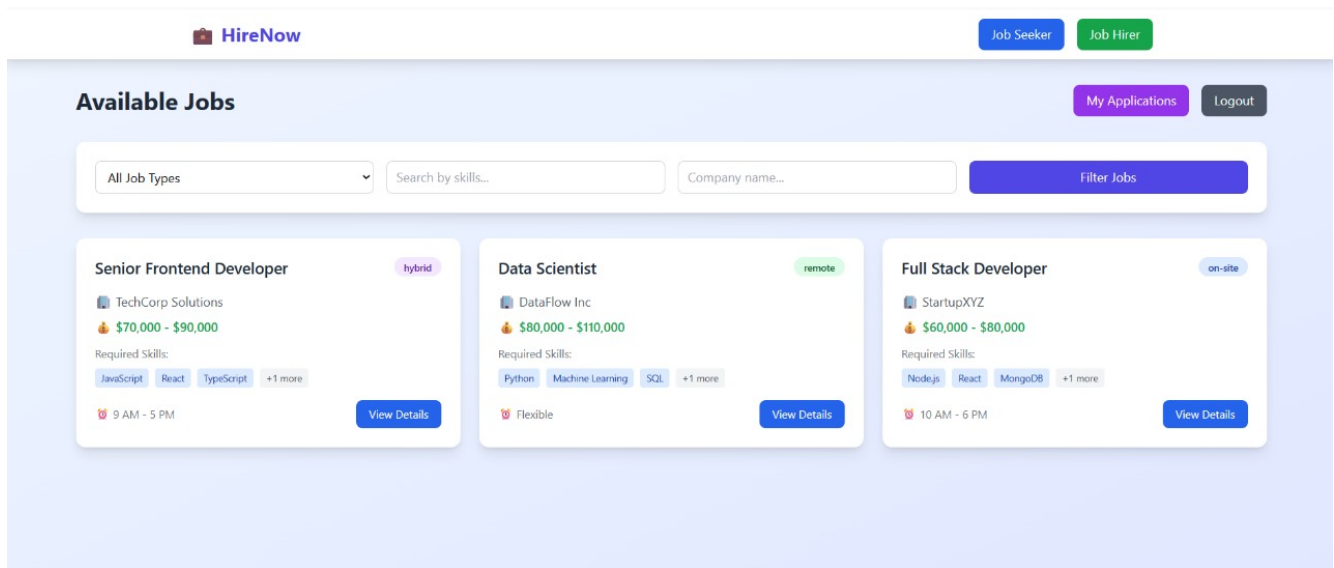


Figure 14: Available Jobs Interface for HireNow

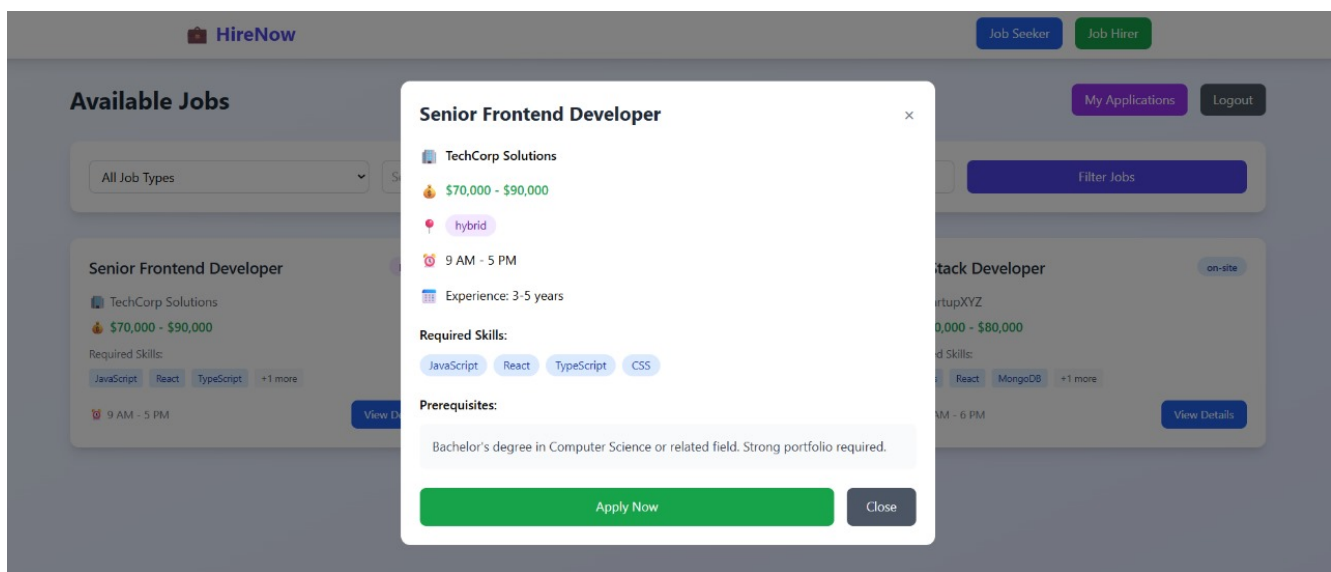


Figure 15: Job Details Interface for HireNow

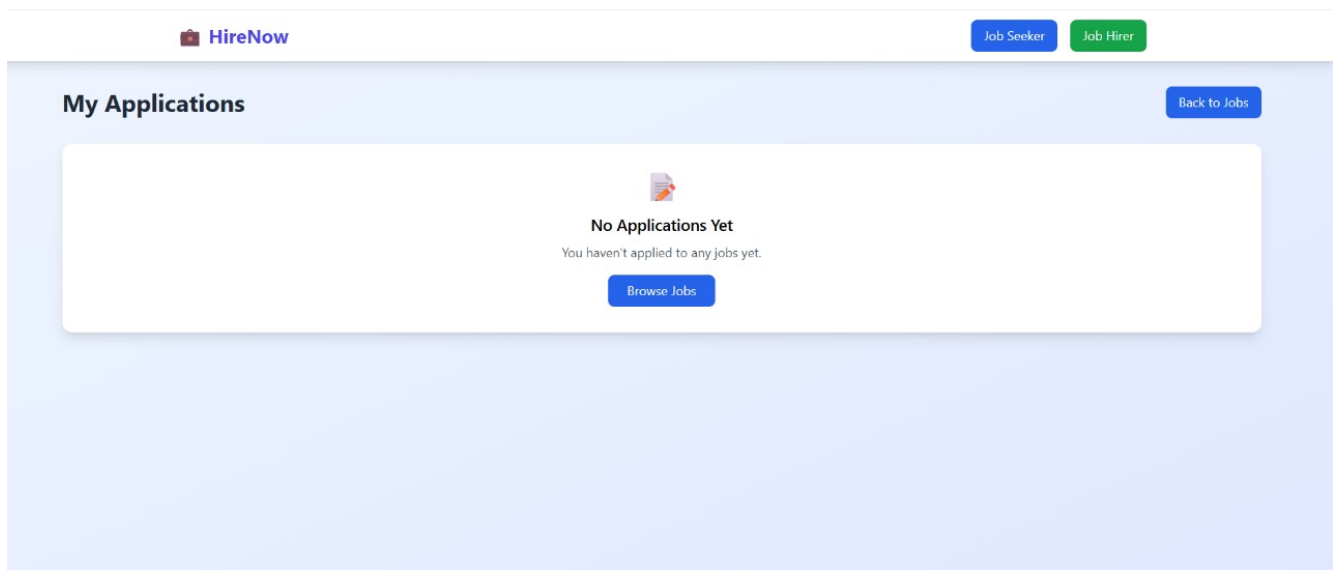


Figure 16: My Applications Interface for HireNow

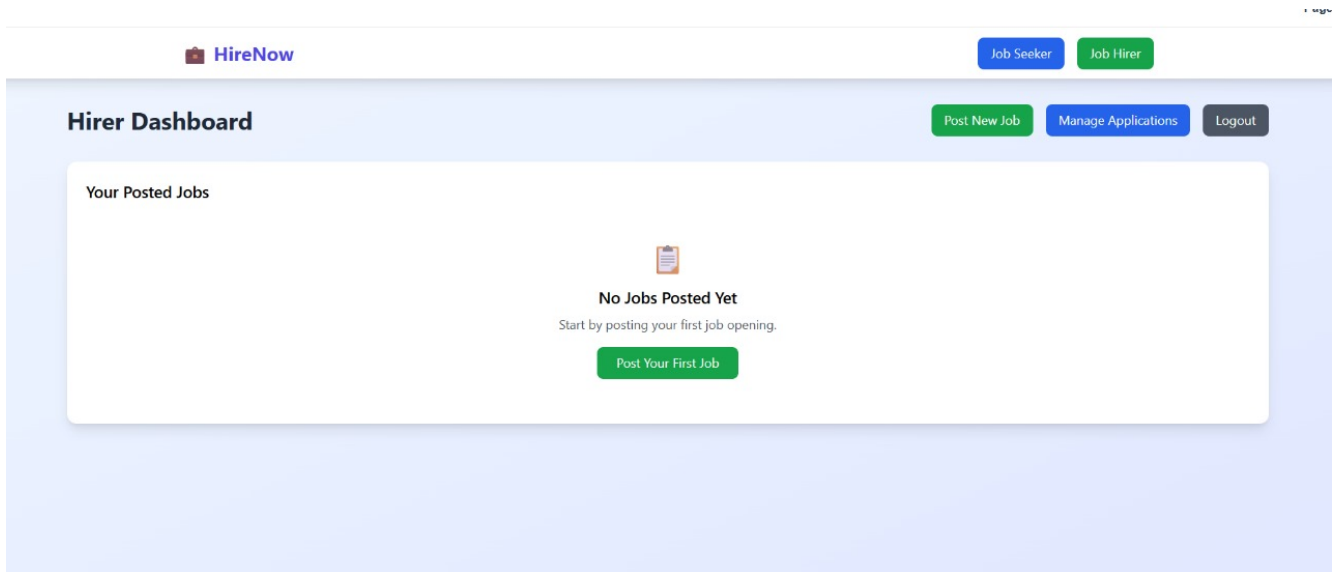


Figure 17: Hirer Dashboard- Job Postings Interface



The screenshot displays the 'Hirer Dashboard' for HireNow. On the left, there is a section titled 'Your Posted Jobs'. The main area is a modal window titled 'Post New Job' with the following fields:

- Company Name \***: Text input field.
- Job Title \***: Text input field.
- Expected Salary \***: Text input field with placeholder 'e.g., \$50,000 - \$70,000'.
- Job Preference \***: Dropdown menu with 'Select preference' and a downward arrow.
- Required Skills (comma-separated) \***: Text input field with placeholder 'e.g., JavaScript, React, Node.js'.
- Experience Required**: Text input field with placeholder 'e.g., 2-5 years or flexible'.
- Working Hours \***: Text input field with placeholder 'e.g., 9 AM - 5 PM'.
- Job Prerequisites**: Text area with placeholder 'Additional requirements or qualifications...'.

At the bottom of the modal are two buttons: 'Post Job' (green) and 'Cancel' (grey).

Figure 18: Hirer Dashboard- Post New Job Interface

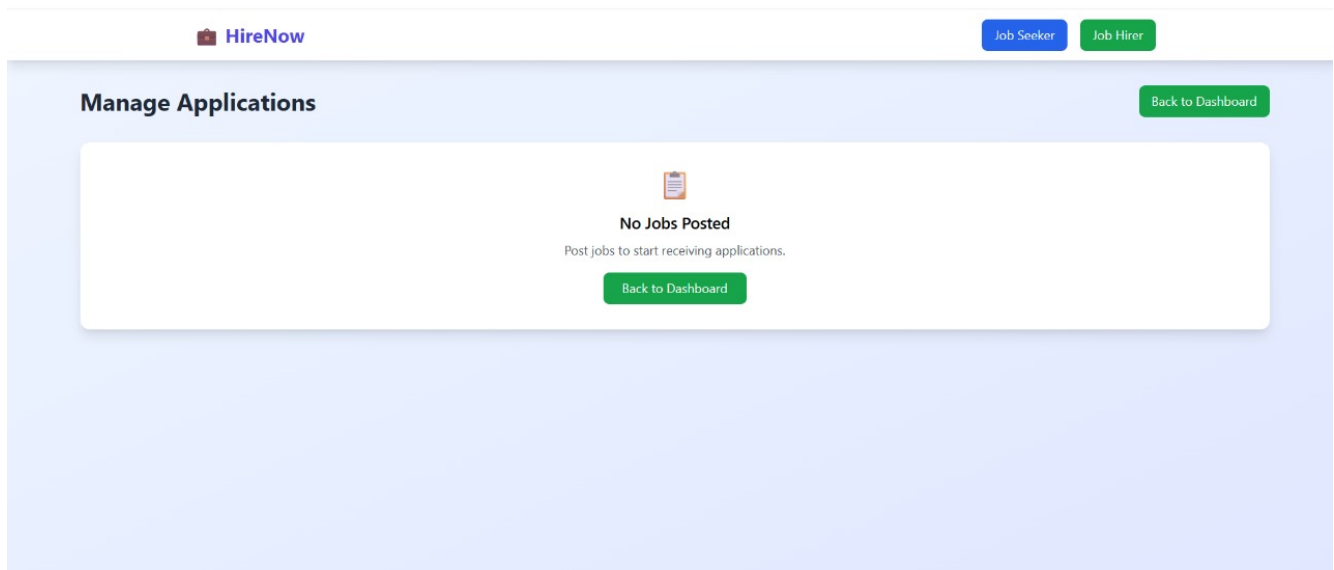


Figure 19: Manage Job Applications Interface