Software Requirements Specification

for

<Employee Recruitment and Management System>

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Revision History

Name	Date	Reason For Changes	Version
all	9-03-25	Initial doc creation	1.0
eman	10-03-25	Updated user interfaces	1.1
iffah	12-03-25	Added some functional req.	1.2
wajiha	17-03-25	Updated some diagrams	Finalized doc

1. Introduction

1.1 Purpose

The purpose of the Employee Recruitment and Management System (ERMS) is to provide a comprehensive, automated platform that streamlines and enhances the recruitment lifecycle for small to medium-sized tech enterprises. This system is designed to efficiently manage all stages of the recruitment process, from posting job openings to finalizing hiring decisions. By centralizing and automating key functions such as candidate management, evaluation, shortlisting, communication, and report generation, the ERMS enables recruiters and HR managers to make faster, more informed decisions. The system also facilitates seamless communication between applicants, recruiters, and HR managers, ensuring that all stakeholders are kept up-to-date on the progress of applications. Additionally, the ERMS provides tools for managing applicant recommendations, generating detailed reports on recruitment activities, and handling contractual agreements with new hires. Ultimately, the goal of the ERMS is to simplify and optimize the recruitment process for tech companies, allowing them to attract and retain top talent in a highly competitive industry, while improving efficiency, reducing human error, and enhancing overall user experience for both recruiters and applicants.

1.2 Document Conventions

This document follows the IEEE 830-1998 standard for Software Requirements Specifications. Requirements are numbered sequentially (e.g., REQ-1, REQ-2) and categorized by system features. Priority levels (High, Medium, Low) are assigned to each requirement.

1.3 Intended Audience and Reading Suggestions

This document is intended for multiple stakeholders, each with a different level of involvement in the project. The suggested reading order for each audience is outlined below:

- **Developers & Engineers**: Focus on Sections **2 (Overall Description)** and **3 (Specific Requirements)** to understand system functionalities, constraints, and technical implementation.
- **Project Managers**: Start with Sections **1 (Introduction)** and **2 (Overall Description)** to grasp the project scope, objectives, and system workflow.
- **HR & Recruiters**: Review Section **2 (Overall Description)** and **4 (User Requirements)** to understand how the system will impact recruitment operations.
- **Testers & QA Team**: Read Section **3 (Specific Requirements)** and **5 (Verification & Validation)** to ensure system functionalities align with expected outcomes.
- **Documentation Writers**: Use Section **1 (Introduction)** as a reference when preparing user manuals and training guides.

1.4 Product Scope

This project is focused on developing a **comprehensive Employee Recruitment and Management System (ERMS)**, tailored for small to medium-sized tech enterprises. The system offers a robust digital platform to manage the entire recruitment lifecycle, integrating applicant management, recruiter operations, and HR recommendations. Key processes include **job posting, candidate applications, written and interview evaluations, shortlisting, test administration, and hiring decisions.** Additionally, the system encompasses functionalities such as **recommendation management, contract management, report generation, and streamlined communication between applicants, recruiters, and HR managers.**
The ERMS is specifically designed to address the unique challenges of tech enterprises, where recruitment demands are fast-paced and competition for top talent is intense. By automating and integrating key recruitment processes, the ERMS aims to enhance decision-making, optimize resource allocation, and improve the overall hiring experience.

1.5 References

N/A

2. Overall Description

2.1 Product Perspective

The ERMS is a **new, self-contained system** that integrates core recruitment processes with advanced post-hiring functionalities, designed for small to medium-sized tech enterprises. It bridges the gap between applicants, recruiters, and HR by providing specialized modules for their respective tasks.

The system serves as a digital replacement for traditional, manual HR methods. It is composed of interconnected subsystems:

1. **Applicant Portal**: For candidates to manage their accounts, apply for jobs, view application status, and take evaluations.
2. **Recruiter Portal**: To manage job postings, applications, and test administration, and conduct evaluations.

3. **HR Module**: To manage recommendations, oversee hiring policies, and generate contracts.

4. **Admin Module**: For generating reports and overseeing system functionalities.

2.2 Product Functions

The **Employee Recruitment and Management System (ERMS)** streamlines recruitment and employee management for tech enterprises. **Applicants** can manage profiles, view and apply for jobs, track application status, take evaluations, and communicate with recruiters. **Recruiters** handle job postings, applicant shortlisting, evaluations, job reports, and messaging. **HR managers** oversee recruitment policies, provide recommendations, and manage contracts, including salaries and benefits. **Admins** generate system-wide reports, such as hiring trends and applicant statistics. Cross-functional features include real-time data synchronization, messaging, and role-specific dashboards, ensuring efficient collaboration and seamless operations

Applicant:

- Manage account (update profile information).
- View and apply for available job postings.
- Save job listings for future reference.
- View employment contract details.
- View and update portfolio.
- Track application progress.
- Communicate with recruiters and HR.
- Book and manage appointments for interviews.
- Compare salaries & benefits.
- Participate in internship & training programs.
- Use the referral system for job applications.

Recruiter:

- Manage account details.
- Post and manage job openings.
- Manage applicant shortlisting.
- Schedule and conduct assessments (written tests & interviews).
- Approve or reject job applications.
- Allow bulk job applications.
- Book, reschedule, and manage appointments.
- Communicate with applicants.
- Provide recommendations for applicants.
- Automate interview feedback collection.
- Manage user roles and permissions.

HR:

- Review and generate employment contracts.
- Provide recommendations for applicants.
- Communicate with applicants and recruiters.
- Manage internship & training program listings.

- Approve job postings and oversee recruitment activities.
- Monitor applicant assessment and shortlisting.
- Ensure compliance with hiring policies and processes.

Admin:

- Generate detailed recruitment reports for all actors.
- Manage user roles and permissions.
- Ensure system security, including two-factor authentication.
- Oversee automation of interview feedback collection.
- Monitor and manage system-wide communication processes.

2.3 User Classes and Characteristics

This system is designed to facilitate an efficient recruitment process by providing different functionalities for various user roles. The primary user classes include **Applicants, Recruiters, HR Personnel, and Administrators**, each having distinct characteristics, privileges, and technical expertise.

1. Applicant

Description:
Applicants are job seekers who use the system to browse job listings, submit applications, track application status, and communicate with recruiters and HR personnel.

Characteristics:

- **Frequency of Use:** Moderate to High (during job search periods).

- **Subset of Functions Used:**

    - Browse job listings

    - Apply for jobs

    - Track application status

    - Manage a personal portfolio

    - Communicate with recruiters and HR

- **Technical Expertise:** Basic (expected to navigate job listings, upload documents, and use messaging features).

- **Security/Privilege Levels:**

    - Can only access their own applications and messages.

○　Cannot modify job listings or system settings.

Importance: High – The system must be user-friendly for applicants, as they form a critical user group.

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2. Recruiter

Description:
Recruiters are responsible for posting job openings, reviewing applications, conducting tests, shortlisting candidates, and communicating with applicants.

Characteristics:

- **Frequency of Use:** Moderate to High (dependent on recruitment needs).

- **Subset of Functions Used:**

  ○　Post job openings

  ○　Review applications

  ○　Conduct tests/interviews

  ○　Shortlist candidates

  ○　Communicate with applicants

- **Technical Expertise:** Intermediate (familiar with recruitment processes and comfortable using digital platforms).

- **Security/Privilege Levels:**

  ○　Can create and manage job postings.

  ○　Can view and manage applicants' job-related data.

  ○　Cannot access administrative settings.

Importance: High – Recruiters play a key role in the hiring process and require an efficient workflow.

3. HR

Description:

HR personnel oversee the hiring process by managing contracts, making recommendations, shortlisting applicants, and communicating with candidates.

Characteristics:

- **Frequency of Use:** Moderate (during hiring cycles and contract management).

- **Subset of Functions Used:**

    ○ Manage applicant shortlisting

    ○ Send and receive messages from applicants

    ○ Handle employment contracts

    ○ Generate recommendations

- **Technical Expertise:** Intermediate (HR professionals are expected to be familiar with digital HR tools).

- **Security/Privilege Levels:**

    ○ Can view all applicants and their statuses.

    ○ Can approve or reject applications.

    ○ Cannot modify job listings directly.

Importance: Medium-High – HR personnel are essential for finalizing the recruitment process.

4. Admin

Description:
Administrators manage system settings, generate reports, and oversee overall platform functionality.

Characteristics:

- **Frequency of Use:** Low to Moderate (mostly for system maintenance and reporting).

- **Subset of Functions Used:**

    ○ Generate reports for applicants, recruiters, and HR personnel

    ○ Manage platform settings and user roles

- **Technical Expertise:** High (requires knowledge of system administration and data analysis).

- **Security/Privilege Levels:**

    - Full access to system data and user management.

    - Can generate analytical reports and monitor system health.

Importance: Medium – Administrators ensure the smooth operation of the system, but their role is not as frequent as applicants or recruiters.

2.4 Operating Environment

- Frontend: React.

- Backend: Node.js.

- Database: Postgresql.

- Platform: Web-based (accessible via browser)

2.5 Design and Implementation Constraints

- The system must be compatible with modern web browsers.
- Data must be stored securely in a Postgresql database.
- The system must support role-based access control.
- Real-time data synchronization between modules.

2.6 User Documentation

- A detailed user guide explaining system functionalities, workflows, and step-by-step instructions for common tasks.
- Online help documentation.

2.7 Assumptions and Dependencies

- The system assumes that users have access to a stable internet connection.
- The system depends on third-party payment gateways for financial transactions.
- The system assumes that veterinarians will have access to the internet for communication.

3. External Interface Requirements

3.1 User Interfaces

Logical Characteristics:

Applicant Interface:

- Account Management: Users can update profile details, such as personal information, skills, experience, etc. A form will be provided for editing profile information.
- Job Postings: Applicants can browse, view, and apply for job openings listed by recruiters.
- Contract Viewing: Applicants can view their job contract once offered.
- Application Status: Applicants can check the status of their job application (e.g., Pending, Shortlisted, Rejected, Interview Scheduled).
- Portfolio Viewing: Applicants can update or view their portfolio to showcase their qualifications.
- Communication with Recruiters and HR: Direct message system to communicate with recruiters and HR personnel regarding job status, interviews, etc.

Recruiter Interface:

- Account Management: Recruiters can update their personal or company details.
- Job Postings: Recruiters can create, manage, and delete job openings.
- Applicant Shortlisting: Ability to view and shortlist applicants based on their resumes and application details.
- Tests and Interviews: Functionality to schedule written tests and interviews, track progress, and send notifications to applicants.
- Appointments: Recruiters can book appointments for interviews or meetings with applicants.
- Communication with Applicants: Allows recruiters to send messages to applicants for updates or feedback.

HR Interface:

- Contracts: HR personnel can create and finalize contracts for applicants.
- Recommendations: HR provides recommendations for applicants based on their qualifications, test results, and interviews.
- Communication: HR can communicate with applicants to provide updates, clarifications, or offer feedback.

Admin Interface:

- Reports Generation: Admin can generate reports for each actor (Applicant, Recruiter, HR) to track the hiring process, application status, and performance.

3.2 Hardware Interfaces

Logical and Physical Characteristics:

- The system will interact with standard desktop..
- Input Devices: Keyboard, mouse, and touch interfaces (for mobile).
- Output Devices: Monitor, screen (mobile and desktop), email notifications.
- Communication Protocols: The software will interact with web servers using HTTP or HTTPS protocols for secure data exchange.

3.3 Software Interfaces

External Software Components:

Database System:

The application will interact with a relational database (PostgreSQL) to manage applicant data, job postings, interview schedules, and contracts.

Data Items:

- Applicants: Personal details, job application status, resumes, and communication logs.
- Recruiters: Job postings, shortlisted candidates, and interview schedules.
- HR: Contracts, applicant recommendations, and communication logs.
- Admin: Reports and overall system activity data.

Libraries: Standard libraries such as JavaScript, React for the front-end, and Node.js, for the back-end API development.

3.4 Communications Interfaces

Required Communication Functions:

Internal Communication:

- Messaging System: The system will also have a real-time messaging feature for communication between applicants, recruiters, and HR.

Communication Security:

- Encryption: Communication between the client and server will be secured using encryption to ensure data privacy.
- Authentication: Tokens will be used for secure logins and session management.

Communication Protocols:

- Web Application: The application will communicate with the server over HTTP/HTTPS using RESTful APIs for CRUD operations.

Data Transfer Rate & Synchronization:

- The system should be optimized to handle multiple simultaneous users without noticeable lag, with APIs designed to handle high traffic and maintain synchronization between user actions in real-time.

4. System Feature

4.1 User Profile Management

4.1.1 Description and Priority

This feature allows users (applicants and recruiters) to manage their profile information, including updating personal details, recruiter profiles, and portfolios.
 Priority: High

4.1.2 Stimulus/Response Sequences

- **Stimulus:** The user logs into the system and navigates to the profile section.
- **Response:** The system displays editable profile fields.
- **Stimulus:** The user updates their profile details and submits changes.
- **Response:** The system validates input and updates the profile.

4.1.3 Functional Requirements

- **REQ-1:** The system shall allow users to update their personal information (name, email, phone, etc.).
- **REQ-2:** The system shall allow recruiters to update company-related information.
- **REQ-3:** The system shall allow users to upload and manage their portfolios.
- **REQ-4:** The system shall store updated information securely.

4.2 Job Application Process

4.2.1 Description and Priority

This feature enables applicants to apply for jobs, track their application progress, and save job listings for future reference. Recruiters can approve or reject applications, including bulk job applications.

Priority: High

4.2.2 Stimulus/Response Sequences

- **Stimulus:** The applicant selects a job listing and clicks "Apply."
- **Response:** The system submits the application and updates the applicant's dashboard.
- **Stimulus:** A recruiter shortlists, approves, or rejects an application.
- **Response:** The system updates the application status and notifies the applicant.

4.2.3 Functional Requirements

- **REQ-5:** The system shall allow applicants to apply for job listings.
- **REQ-6:** The system shall enable applicants to track the status of their applications.
- **REQ-7:** The system shall allow users to save job listings for future reference.
- **REQ-8:** The system shall allow recruiters to approve or reject applications.
- **REQ-9:** The system shall support bulk job applications for recruiters.

4.3 Recruitment & Assessment

4.3.1 Description and Priority

This feature allows recruiters to post jobs, shortlist candidates, and schedule assessments such as written tests and interviews.

Priority: High

4.3.2 Stimulus/Response Sequences

- **Stimulus:** A recruiter creates a job posting.
- **Response:** The system publishes the job listing.
- **Stimulus:** A recruiter shortlists candidates and schedules an interview.
- **Response:** The system sends notifications to the selected applicants.

4.3.3 Functional Requirements

- **REQ-10:** The system shall allow recruiters to create and manage job postings.
- **REQ-11:** The system shall allow recruiters to shortlist candidates.
- **REQ-12:** The system shall provide scheduling tools for assessments and interviews.
- **REQ-13:** The system shall send automated notifications to applicants.

4.4 Employment & Contracts

4.4.1 Description and Priority

This feature enables HR managers to review and generate employment contracts and provide recommendations for applicants.

Priority: Medium

4.4.2 Stimulus/Response Sequences

- **Stimulus**: HR reviews an applicant and decides to generate a contract.
- **Response:** The system generates a contract document for review.

4.4.3 Functional Requirements

- **REQ-14:** The system shall allow HR managers to review applicant details.
- **REQ-15:** The system shall enable contract generation based on pre-defined templates.
- **REQ-16:** The system shall allow applicants to review and accept contracts.

4.5 Internships & Training

4.5.1 Description and Priority

This feature allows HR to manage internship and training program listings.

Priority: Medium

4.5.2 Stimulus/Response Sequences

- **Stimulus:** HR creates an internship program listing.
- **Response:** The system publishes the listing.
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4.5.3 Functional Requirements

- **REQ-17:** The system shall allow HR to create and manage internship listings.
- **REQ-18:** The system shall allow applicants to apply for internship programs

4.6 Communication & Scheduling

4.6.1 Description and Priority

This feature enables communication between applicants, recruiters, and HR through messaging and appointment scheduling.

Priority: High

4.6.2 Stimulus/Response Sequences

- **Stimulus:** A recruiter sends a message to an applicant.
- **Response:** The system delivers the message and notifies the recipient.

4.6.3 Functional Requirements

- **REQ-19:** The system shall provide an internal messaging feature for users.
- **REQ-20:** The system shall allow applicants to schedule interviews.
- **REQ-21:** The system shall support appointment rescheduling.

4.7 Security & Authentication

4.7.1 Description and Priority

This feature ensures system security, including two-factor authentication (2FA).

Priority: High

4.7.2 Stimulus/Response Sequences

- **Stimulus:** A user attempts to log in.
- **Response:** The system prompts for 2FA verification.

4.7.3 Functional Requirements

- **REQ-22:** The system shall support 2FA for user authentication.

* **REQ-23:** The system shall enforce secure password policies.

4.8 Automation & Reporting

4.8.1 Description and Priority

This feature automates interview feedback collection, recruitment reporting, and user role management.

Priority: Medium

4.8.2 Stimulus/Response Sequences

* **Stimulus:** A recruiter completes an interview.
* **Response:** The system sends automated feedback requests.

4.8.3 Functional Requirements

* **REQ-24:** The system shall automate interview feedback collection.
* **REQ-25:** The system shall generate recruitment reports.
* **REQ-26:** The system shall allow admins to manage user roles.

4.9 Additional User Experience Enhancements

4.9.1 Description and Priority

This feature includes job offer acceptance, automated job matching, salary comparison, and a referral system.
Priority: Medium

4.9.2 Stimulus/Response Sequences

* **Stimulus:** An applicant receives a job offer.
* **Response:** The system allows digital acceptance and signing.

4.9.3 Functional Requirements

* **REQ-27:** The system shall allow digital signing of job contracts.
* **REQ-28:** The system shall provide an automated job matching tool.
* **REQ-29:** The system shall offer a salary & benefits comparison tool.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

* The system shall handle up to 10,000 concurrent users without performance degradation.
* Page load time shall not exceed 2 seconds under normal conditions.
* The system shall process job applications and updates within 1 second of submission.

- The system shall support data retrieval from the database in less than 500 milliseconds.

5.2 Safety Requirements

- The system shall perform regular data backups to prevent data loss.
- The system shall implement error handling and fail-safe mechanisms to prevent crashes.
- The system shall comply with health and safety regulations related to digital accessibility.
- The system shall provide warnings and confirmation prompts before performing critical actions, such as deleting user data.

5.3 Security Requirements

- The system shall support Two-Factor Authentication (2FA) for all user roles.
- Sensitive user data (e.g., payment information, personal identification) shall be encrypted in transit and at rest.

5.4 Software Quality Attributes

- **Availability**: The system shall achieve 99.9% uptime.
- **Reliability**: The system shall handle failures without losing user data.
- **Maintainability**: The codebase shall follow modular design patterns to allow easy updates and enhancements.
- **Usability**: The user interface shall be intuitive and accessible to users with disabilities.
- **Scalability**: The system architecture shall support horizontal scaling to handle increased traffic.
- **Interoperability**: The system shall integrate with third-party APIs for payment processing and email notifications.
- **Testability**: The system shall support automated testing and continuous integration.

5.5 Business Rules

- Only recruiters and HR managers can post job listings and manage candidate assessments.
- Applicants can only view and apply for jobs that match their profile and qualifications.
- Only HR managers can generate and approve employment contracts.
- Users must verify their email addresses before applying for jobs or updating sensitive information.
- The system shall enforce role-based access control (RBAC) to restrict access to sensitive data and actions.

6. User Stories

1. Update Applicant's Profile

- **User Role**: Applicant
- **Goal**: To update profile information
- **Reason**: So that my details remain accurate and up to date

Acceptance Criteria:

1. **User edits personal details**

   - **Pre-condition**: The user is logged into their account.
   - **Action**: The user navigates to the profile edit section and updates personal details.
   - **Post-condition**: The system validates input and allows the user to save changes.

2. **System saves updates successfully**

   - **Pre-condition**: The user has made valid changes to their profile.
   - **Action**: The user submits the updates.
   - **Post-condition**: The system stores the updated details in the database successfully.

3. **Updated profile reflects in the system**

   - **Pre-condition**: The user has successfully saved their updated details.
   - **Action**: The user returns to their profile page.
   - **Post-condition**: The system displays the most recent updates correctly.

2.Apply for Jobs

- **User Role:** Applicant
- **Goal:** To browse and apply for job openings
- **Reason:** So that I can secure a suitable position

Acceptance Criteria:

System displays a list of available job postings

- **Pre-condition:** The user is on the job listings page.
- **Action:** The user accesses the job board.
- **Post-condition:** The system displays a list of available job postings.

User can filter and search for jobs

- **Pre-condition:** The user is on the job listings page.
- **Action:** The user applies filters or enters search keywords.
- **Post-condition:** The system updates the job list to match the search criteria.

Application is successfully submitted

- **Pre-condition:** The user has selected a job and filled out the required application details.
- **Action:** The user submits the application.
- **Post-condition:** The system processes and saves the application successfully.

System confirms application submission

- **Pre-condition:** The user has submitted a job application.
- **Action:** The system processes the submission.
- **Post-condition:** The system displays a confirmation message to the user.

3.Review Employment Contract

User Role: Applicant
 Goal: To review my employment contract
 Reason: So that I can understand my job terms before accepting

Acceptance Criteria:

User can view contract details

- **Pre-condition:** The user has the necessary permissions.
- **Action:** The user navigates to the contract details page.
- **Post-condition:** The system displays the contract details.

Contract is displayed in a readable format

- **Pre-condition:** The user is viewing a contract.
- **Action:** The system renders the contract details.
- **Post-condition:** The contract is displayed in a structured and readable format.

4.Update Recruiter Profile

User Role: Recruiter
 Goal: To update my account details
 Reason: So that I can maintain accurate professional information

Acceptance Criteria:

Recruiter Can Edit Profile Information

- **Pre-condition:** The recruiter is logged into the system with the necessary permissions.
- **Action:** The recruiter clicks the "Edit Profile" button and updates their profile information.
- **Post-condition:** The updates are successfully saved in the system's database.

5.Job Posting System

User Role: Recruiter
Goal: To create, edit, and delete job postings
Reason: So that I can attract suitable candidates

Acceptance Criteria:

Recruiter Can Edit Profile Information

- **Pre-condition:** The recruiter is logged into the system.
- **Action:** The recruiter navigates to the profile settings and makes changes.
- **Post-condition:** The system allows them to edit their profile information.

Updates Are Successfully Saved

- **Pre-condition:** The recruiter has edited their profile information.
- **Action:** The recruiter clicks the save button.
- **Post-condition:** The system successfully saves the updates.

Changes Reflect in the System

- **Pre-condition:** The recruiter has saved the updated profile information.
- **Action:** The recruiter revisits the profile page.
- **Post-condition:** The changes are displayed correctly in the system.

6.Shortlist Candidates

User Role: Recruiter
Goal: To shortlist candidates based on predefined criteria
Reason: So that I can focus on the most qualified applicants

Acceptance Criteria:

The system allows recruiters to filter applicants

- **Pre-condition:** The recruiter is logged into the system.
- **Action:** The recruiter applies filters based on criteria such as skills, experience, or location.
- **Post-condition:** The system displays only the applicants matching the selected criteria.

Shortlisted candidates are stored in a separate list

- **Pre-condition:** The recruiter has selected candidates for shortlisting.
- **Action:** The recruiter marks an applicant as shortlisted.
- **Post-condition:** The system stores the shortlisted candidates in a separate list.

Recruiters can move applicants between lists

- **Pre-condition:** The recruiter has an applicant in either the general or shortlisted list.
- **Action:** The recruiter chooses to move the applicant to a different list.
- **Post-condition:** The system updates the lists accordingly.

7.Schedule and Conduct Tests

User Role: Recruiter
Goal: To schedule and conduct written tests
Reason: So that I can assess candidates efficiently

Acceptance Criteria:

The recruiter can schedule assessments

- **Pre-condition:** The recruiter is logged into the system.
- **Action:** The recruiter selects a candidate and schedules an assessment.
- **Post-condition:** The system saves the scheduled assessment with the date, time, and details.

The system notifies candidates of upcoming tests

- **Pre-condition:** A candidate has been scheduled for an assessment.
- **Action:** The recruiter finalizes the schedule.
- **Post-condition:** The system sends a notification to the candidate with the test details.

Test results are recorded and displayed

- **Pre-condition:** A candidate has completed the assessment.
- **Action:** The test results become available.
- **Post-condition:** The system records the results and displays them to the recruiter.

9.Interview Scheduling and Conduction

User Role: Recruiter
Goal: To schedule interview appointments with applicants
Reason: So that I can ensure a smooth interview process

Acceptance Criteria:

The recruiter can choose interview slots

- **Pre-condition:** The recruiter is logged into the system.
- **Action:** The recruiter selects a candidate and chooses an available interview slot.
- **Post-condition:** The system saves the scheduled interview with the date and time.

Candidates receive interview confirmations

- ● **Pre-condition:** A recruiter has scheduled an interview.
- ● **Action:** The recruiter finalizes the interview details.
- ● **Post-condition:** The system sends a confirmation notification to the candidate.

Recruiters can reschedule interviews

- ● **Pre-condition:** An interview has already been scheduled.
- ● **Action:** The recruiter decides to change the date or time.
- ● **Post-condition:** The system allows rescheduling and notifies the candidate of the updated details.

10.Provide Recommendations for Applicants

User Role: HR Manager
 Goal: To review applications and provide recommendations
 Reason: So that recruiters can make informed hiring decisions

Acceptance Criteria:

HR can add recommendations to applicant profiles

- ● **Pre-condition:** The HR user is logged into the system.
- ● **Action:** The HR user navigates to an applicant's profile and enters a recommendation.
- ● **Post-condition:** The system saves the recommendation successfully.

Recruiters can view recommendations

- ● **Pre-condition:** An applicant's profile contains recommendations.
- ● **Action:** A recruiter accesses the profile.
- ● **Post-condition:** The system displays the saved recommendations.

Recommendations remain editable before final submission

- ● **Pre-condition:** A recommendation has been added.
- ● **Action:** The HR user wants to make changes before final submission.
- ● **Post-condition:** The system allows editing of the recommendation.

11.Track Application Progress

User Role: Applicant
 Goal: To track my application status
 Reason: So that I know if I have progressed in the hiring process

Acceptance Criteria:

The system updates application status in real-time

- **Pre-condition:** The user has submitted a job application.
- **Action:** There is a change in the application status (e.g., reviewed, shortlisted, rejected).
- **Post-condition:** The system updates the status immediately.

The user can view application history

- **Pre-condition:** The user has submitted one or more applications.
- **Action:** The user navigates to their application history.
- **Post-condition:** The system displays a list of all past applications along with their statuses.

Notifications are sent for status changes

- **Pre-condition:** The application status has changed.
- **Action:** The system updates the status.
- **Post-condition:** A notification is sent to the user informing them of the change.

12.Approve or Reject Job Applications

User Role: Recruiter
Goal: To approve or reject job applications
Reason: So that I can efficiently manage the hiring pipeline

Acceptance Criteria:

Recruiters can review applications

- **Pre-condition:** The recruiter is logged into the system.
- **Action:** They access the job applications list.
- **Post-condition:** The system displays the submitted applications for review.

Recruiters can approve or reject applications

- **Pre-condition:** The recruiter has reviewed an application.
- **Action:** They choose to approve or reject the application.
- **Post-condition:** The system updates the application status accordingly.

Applicants receive notifications

- **Pre-condition:** An application status has changed.
- **Action:** The recruiter approves or rejects an application.

- **Post-condition:** The applicant receives a notification about the decision.

13.Generate Recruitment Reports

User Role: HR Manager
Goal: To generate recruitment reports
Reason: So that I can analyze hiring trends and optimize recruitment

Acceptance Criteria:

HR can access reports section

- **Pre-condition:** The HR user is logged into the system.
- **Action:** They navigate to the reports section.
- **Post-condition:** The system allows them to generate reports based on filters.

Reports display recruitment insights

- **Pre-condition:** The HR user has selected a report type.
- **Action:** They generate the report.
- **Post-condition:** The report includes relevant recruitment data (e.g., hiring trends, application status breakdown, time-to-hire metrics).

Reports can be exported

- **Pre-condition:** A report has been generated.
- **Action:** The HR user selects export options.
- **Post-condition:** The system allows exporting reports in formats like PDF or Excel.

14.Manage User Roles and Permissions

User Role: Admin
Goal: To manage user roles and permissions
Reason: So that I can control system access and security

Acceptance Criteria:

Admin can assign roles

- **Pre-condition:** The admin is logged in.
- **Action:** They navigate to the user management section.

- **Post-condition:** The system allows them to assign or change user roles (e.g., Recruiter, HR Manager, Applicant).

Permissions are enforced based on roles

- **Pre-condition:** A user has a specific role.
- **Action:** They attempt to access a restricted section.
- **Post-condition:** The system enforces permissions accordingly (e.g., only HR Managers can generate reports, only recruiters can shortlist candidates).

Changes to roles are logged

- **Pre-condition:** An admin has updated a user role.
- **Action:** They apply the change.
- **Post-condition:** The system logs this action for security purposes (including the admin's username, timestamp, and changes made).

15.Automate Interview Feedback Collection

User Role: Recruiter
 Goal: To collect interview feedback from panelists
 Reason: So that I can make data-driven hiring decisions

Acceptance Criteria:

Panelists can submit feedback

- **Pre-condition:** A panelist has attended an interview.
- **Action:** They access the feedback form.
- **Post-condition:** The system allows them to rate and comment on the candidate.

Feedback is stored and accessible

- **Pre-condition:** Feedback has been submitted.
- **Action:** The recruiter checks the candidate's profile.
- **Post-condition:** The feedback is available for review.

Final hiring decisions can be based on feedback

- **Pre-condition:** All interviewers have provided feedback.
- **Action:** The recruiter evaluates candidates.
- **Post-condition:** The system presents aggregated feedback for decision-making (e.g., average rating, summary of comments).

16.Enable Two-Factor Authentication (2FA)

User Role: Applicant / Recruiter / HR / Admin
Goal: To enable two-factor authentication
Reason: So that I can enhance the security of my account

Acceptance Criteria:

Users can enable 2FA

- **Pre-condition:** The user is logged into their account.
- **Action:** They navigate to the security settings.
- **Post-condition:** The system provides an option to enable 2FA.

System generates 2FA codes

- **Pre-condition:** A user has enabled 2FA.
- **Action:** They attempt to log in.
- **Post-condition:** The system prompts them for a verification code (sent via SMS, email, or authenticator app).

Users can verify their identity

- **Pre-condition:** The user has received the 2FA code.
- **Action:** They enter the code in the verification prompt.
- **Post-condition:** The system validates the code and grants access if correct; otherwise, it denies access.

17.Allow Bulk Job Applications for Recruiters

User Role: Recruiter
Goal: To process multiple job applications at once
Reason: So that I can save time during the hiring process

Acceptance Criteria:

Recruiters can select multiple applications

- **Pre-condition:** The recruiter is logged into the system.
- **Action:** They navigate to the job applications list.
- **Post-condition:** The system provides an option to select multiple applications at once.

Batch actions can be applied

- **Pre-condition:** A recruiter has selected multiple applications.

- **Action:** They choose an action (approve/reject).
- **Post-condition:** The system processes all selected applications accordingly.

Applicants receive bulk notifications

- **Pre-condition:** A batch action has been performed.
- **Action:** The system updates multiple applications.
- **Post-condition:** Each affected applicant receives a relevant notification.

18.View Applications for the Job

User Role: Recruiter
Goal: To view and track applications submitted for a job posting
Reason: So that I can review applicants' details and shortlist suitable candidates efficiently

Acceptance Criteria:

1. User authentication and access

- **Pre-condition:** The recruiter is registered in the system.
- **Action:** They log into their account.
- **Post-condition:** The system grants access to the job applications section successfully.

2. Application details are displayed correctly

- **Pre-condition:** There are applications submitted for a job.
- **Action:** The recruiter views the applications list.
- **Post-condition:** The system displays applicant details such as:
    - Name
    - Qualifications
    - CGPA
    - Experience
    - HR recommendations

3. User-friendly interface for viewing applications

- **Pre-condition:** The recruiter is logged into the system.
- **Action:** They navigate to the job applications section.
- **Post-condition:** The interface is structured, clear, and easy to use for reviewing applications.

4. Filtering and sorting options

- **Pre-condition:** There are multiple applications.
- **Action:** The recruiter applies filters (e.g., by CGPA, experience, or HR recommendations).

- **Post-condition:** The system refines the results accordingly to streamline the shortlisting process.

19. Communicate with Recruiters and HR

User Role: Applicant
Goal: To send and receive messages from recruiters and HR
Reason: So that I can ask questions and receive updates on my application status

Acceptance Criteria:

1. User Authentication and Access to Messaging

- **Pre-condition:** The applicant is registered in the system.
- **Action:** They log into their account.
- **Post-condition:** The system grants access to the messaging feature successfully.

2. Initiate Conversation with Recruiter or HR

- **Pre-condition:** The applicant is logged into the system.
- **Action:** They navigate to the messaging section and select a recruiter or HR.
- **Post-condition:** They should be able to send an initial message.

3. Receive Notifications for New Messages

- **Pre-condition:** The applicant has received a message from a recruiter or HR.
- **Action:** They check their notifications.
- **Post-condition:** The system displays an alert indicating a new unread message.

4. Message Storage and Retrieval

- **Pre-condition:** The applicant has previously communicated with a recruiter or HR.
- **Action:** They access the messaging section.
- **Post-condition:** The system displays past messages in a conversation thread.

5. Secure and Private Communication

- **Pre-condition:** An applicant is using the messaging feature.
- **Action:** They send or receive a message.
- **Post-condition:** The conversation should be **encrypted** and accessible **only to the involved parties**.

20. Book Appointments

User Role: Recruiter
 Goal: To schedule and book appointments with applicants
 Reason: So that I can efficiently arrange meetings or interviews

Acceptance Criteria:

1. Selecting a Date and Time for an Appointment

- **Pre-condition:** The recruiter or HR wants to schedule an appointment.
- **Action:** They access the appointment scheduling system.
- **Post-condition:** They should be able to select an available date and time for the meeting.

2. Notification for Scheduled Appointment

- **Pre-condition:** An appointment has been scheduled.
- **Action:** The applicant logs into their account.
- **Post-condition:** They should receive a notification with the appointment details.

3. Successful Appointment Booking

- **Pre-condition:** The recruiter or HR completes the scheduling process.
- **Action:** They submit the appointment details.
- **Post-condition:** The system successfully saves the appointment, and both parties receive a confirmation notification.

21.View Appointments

User Role: Applicant or Recruiter
 Goal: To view scheduled appointments
 Reason: So that I can stay informed about upcoming meetings and interviews

Acceptance Criteria:

1. Accessing Scheduled Appointments

- **Pre-condition:** The user (applicant or recruiter) is logged into their account.
- **Action:** They navigate to the "Appointments" section.
- **Post-condition:** They should see a list of all their **upcoming** and **past** appointments.

2. Viewing Appointment Details

- **Pre-condition:** The user has scheduled appointments.
- **Action:** They select a specific appointment.

- **Post-condition:** They should be able to view details such as:
    - Date & Time
    - Recruiter Name
    - Applicant Name
    - Meeting Type (Online or In-Person)

22.Referral System for Job Applications

User Role: Employee or Recruiter
 Goal: To refer potential candidates for job openings
 Reason: So that referred candidates receive **priority screening** and have a better chance of being hired.

Acceptance Criteria:

1. Submitting a Referral

- **Pre-condition:** The user (employee or recruiter) is logged into the system.
- **Action:** They navigate to the job listing and select the "Refer a Candidate" option.
- **Post-condition:** They should be able to enter:
    - Candidate's Name
    - Candidate's Email
    - Upload Resume

2. Referral Priority in Screening

- **Pre-condition:** A candidate has been referred.
- **Action:** The recruiter reviews job applications.
- **Post-condition:** Referred candidates should be **flagged as "Referred"** and be given **priority screening**.

3. Referral Confirmation & Notification

- **Pre-condition:** An employee submits a referral.
- **Action:** The system successfully records the referral.
- **Post-condition:**The referring employee receives a confirmation email.The referred candidate receives an acknowledgment email with further instructions.

4. Tracking Referral Status

- **Pre-condition:** The referring employee wants to track their referral.
- **Action:** They visit the **"My Referrals"** section.
- **Post-condition:** They should be able to see the **current status** of the referral, such as:
    - Under Review
    - Interview Scheduled
    - Hired

○ Rejected

5. Reward System for Successful Hires

- **Pre-condition:** A referred candidate is successfully hired.
- **Action:** The onboarding process is complete.
- **Post-condition:** The referring employee:
  - Receives a notification of the hire.
  - Gets any applicable referral bonus (if the company offers one).

23.Salary & Benefits Comparison Tool

User Role: Applicant
Goal: To compare salary and benefits across different job listings
Reason: So that applicants can make an **informed decision** about which job offer is best for them.

Acceptance Criteria:

1. Viewing Salary & Benefits Information

- **Pre-condition:** The user is logged into the system.
- **Action:** They navigate to a job listing.
- **Post-condition:** The system should display:
  - Salary range (minimum & maximum)
  - Benefits offered, such as Health insurance,Bonuses,Paid leave,Retirement plans,Remote work flexibility

2. Adding Jobs to Comparison List

- **Pre-condition:** The user is viewing multiple job listings.
- **Action:** They select job postings and click the "Compare" button.
- **Post-condition:** The selected jobs should be added to a comparison table for easy evaluation.

3. Displaying a Side-by-Side Comparison

- **Pre-condition:** The user has selected jobs for comparison.
- **Action:** They open the **Comparison View.**
- **Post-condition:** A **side-by-side table** should display:
  - Salary ranges
  - Benefits & perks
  - Job location
  - Work environment (remote/on-site)
  - Company rating (if applicable)

4. Filtering & Sorting Based on Preferences

- **Pre-condition:** The user is viewing multiple job listings.
- **Action:** They apply filters such as:
  - Salary range
  - Benefits (e.g., health insurance, paid leave)
  - Company reputation/rating
- **Post-condition:** The system should refine and sort job listings based on the user's preferences.

5. Making an Informed Decision

- **Pre-condition:** The user has reviewed the salary & benefits comparison.
- **Action:** They decide on a job and want to apply.
- **Post-condition:** The system should allow them to easily navigate back to the job listing and submit their application.

24.Internship & Training Program Listings

User Role: Applicant
Goal: To browse and apply for internship and training opportunities.
Reason: To gain relevant experience and enhance skills.

Acceptance Criteria:

1. Viewing Available Internships & Trainings

- **Pre-condition:** The user is logged into the system.
- **Action:** They navigate to the "Internships & Trainings" section.
- **Post-condition:** The system should display a list of available opportunities with details such as:
  - Company Name
  - Internship/Training Duration
  - Eligibility Criteria
  - Application Deadline
  - Remote/On-Site Details

2. Filtering & Searching for Relevant Programs

- **Pre-condition:** The user is in the "Internships & Trainings" section.
- **Action:** They apply filters such as:
  - Location (Remote, On-site, Specific City)
  - Field of Interest (Software Development, Marketing, Data Science, etc.)
  - Duration (Short-term, Long-term, Flexible)

- **Post-condition:** The system should display only the relevant opportunities based on selected filters.

3. Applying for an Internship/Training Program

- **Pre-condition:** The user has found a suitable internship/training program.
- **Action:** They click "Apply Now" and submit required details like:
    - Resume
    - Cover Letter
    - Additional Application Questions (if any)
- **Post-condition:** The system should save the application and send it to the recruiter.

4. Application Status Tracking

- **Pre-condition:** The user has applied for an internship or training program.
- **Action:** They check their application status in the system.
- **Post-condition:** They should see real-time updates such as:
    - "Under Review"
    - "Shortlisted"
    - "Rejected"
    - "Interview Scheduled"

5. Notification for Selection Updates

- **Pre-condition:** The recruiter updates the application status (e.g., shortlist, selection).
- **Action:** The system sends a notification or email to the applicant.
- **Post-condition:** The applicant receives a real-time alert about their selection or rejection.

25.Save Job Listings for Future Reference

User Role: Applicant
Goal: To save job postings for later review.
Reason: To easily access and apply when ready.

Acceptance Criteria:

1. Saving Job Postings

- **Pre-condition:** The applicant is logged into their account.
- **Action:** They view a job posting.
- **Post-condition:** The system provides a "Save Job" option, allowing the applicant to save the listing for later.

2. Viewing Saved Jobs

- **Pre-condition:** The applicant has saved job postings.
- **Action:** They navigate to the "Saved Jobs" section.
- **Post-condition:** The system displays a list of all saved jobs with details such as:
  - Job Title
  - Company Name
  - Location
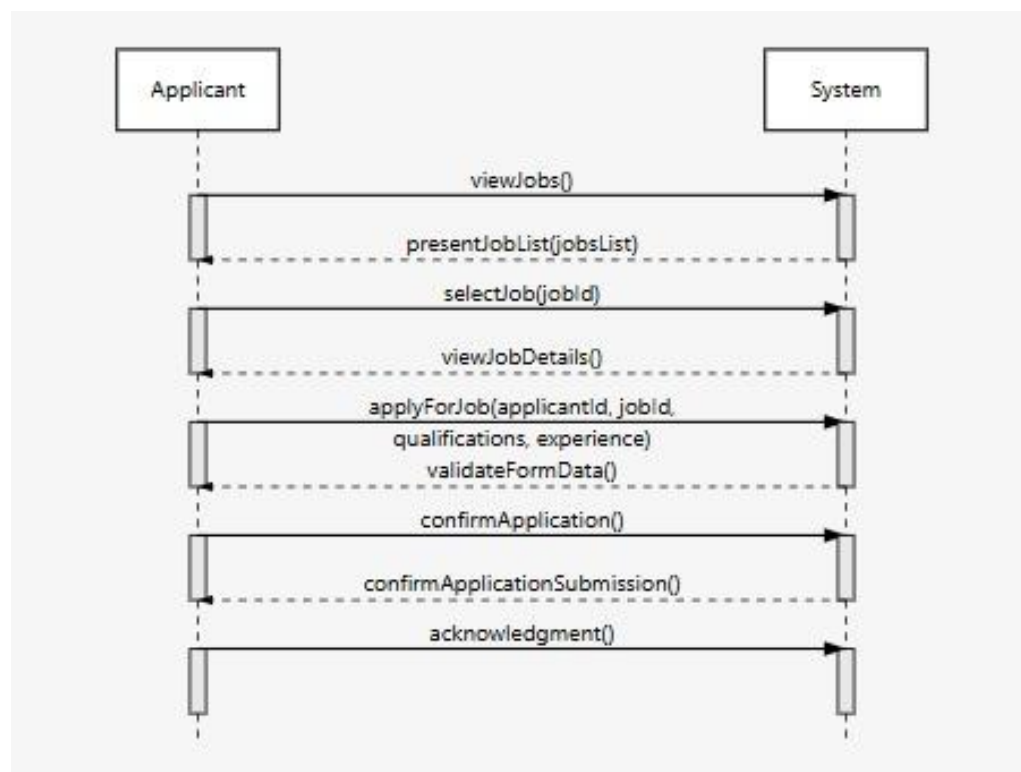 - Application Deadline
  - Status (Active, Expired, Closed)

3. Removing Saved Jobs

- **Pre-condition:** The applicant no longer wants a saved job posting.
- **Action:** They select the job and choose "Remove from Saved Jobs".
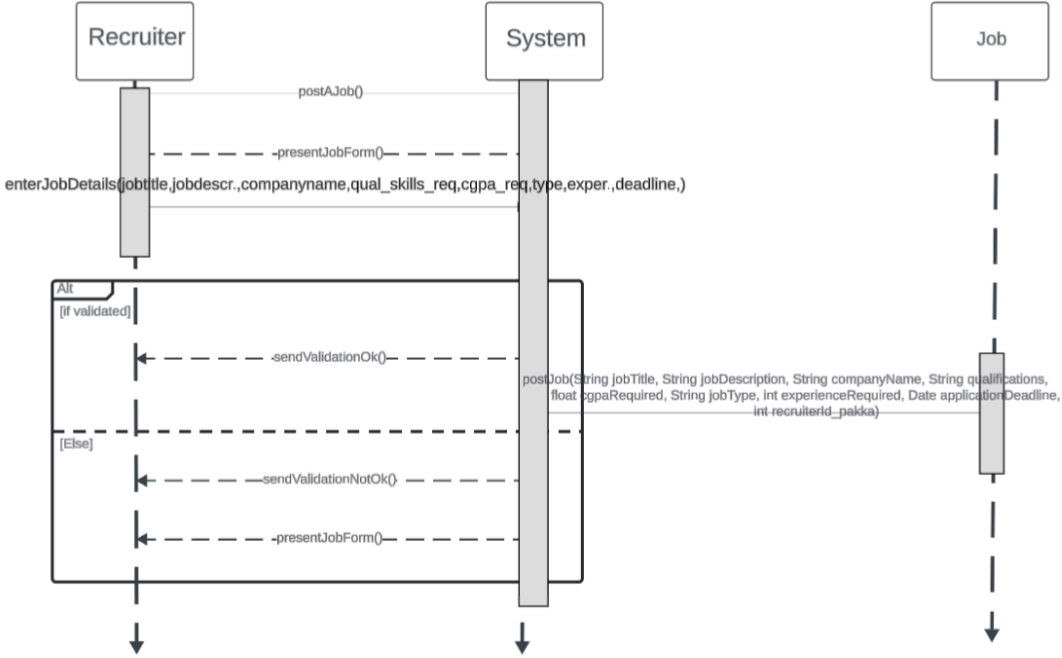- **Post-condition:** The system deletes the job from the saved list.

4. Handling Expired or Closed Jobs

- **Pre-condition:** A job posting is no longer available.
- **Action:** The applicant accesses their "Saved Jobs" section.
- **Post-condition:** The system:
  - Notifies the applicant that the job is closed or expired.
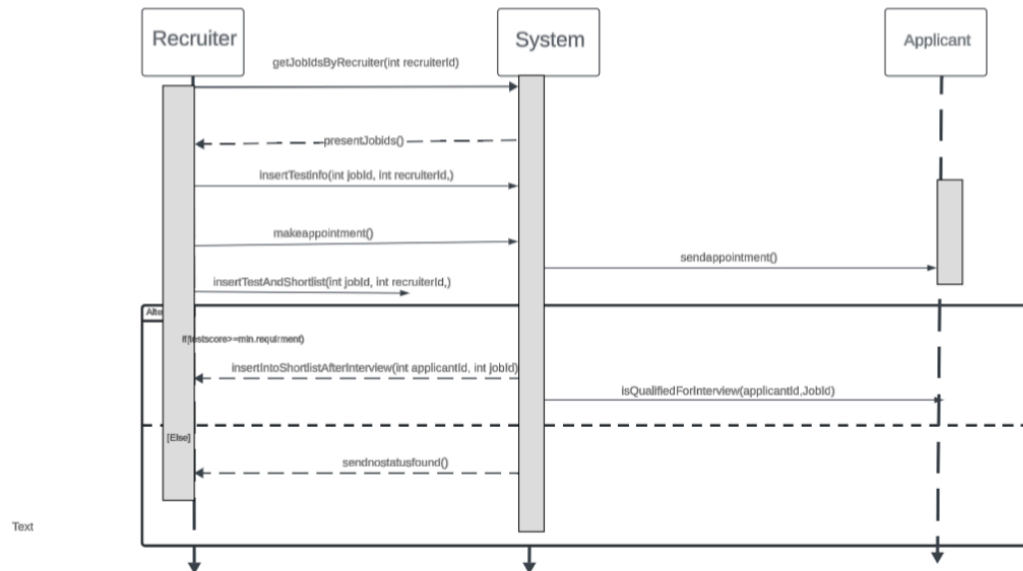 - Provides an option to remove the expired job from the saved list.
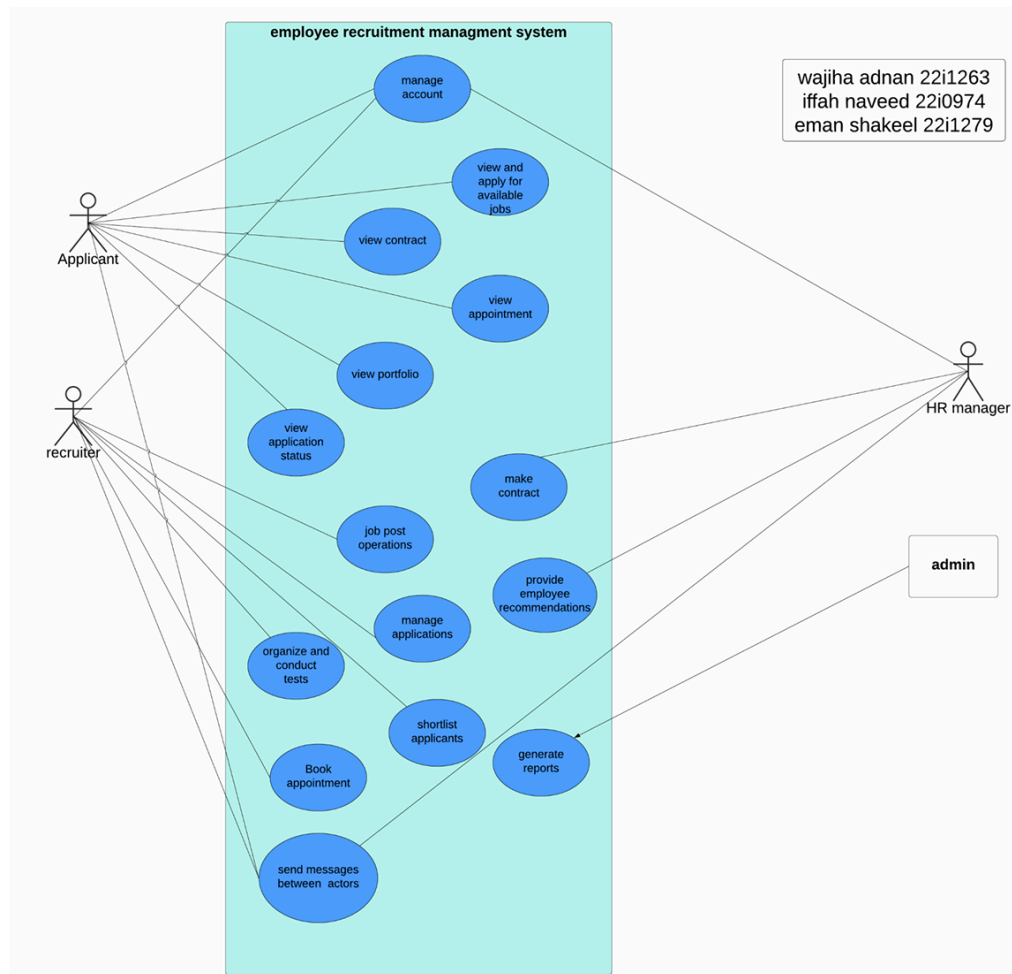
SEQUENCE DIAGRAMS:-

Job Post Operations

Recruiter   **System**   **Job**

postAJob()

presentJobForm()

enterJobDetails(jobtitle,jobdescr.,companyname,qual_skills_req,cgpa_req,type,exper.,deadline,)

Alt

[if validated]

sendValidationOk()

postJob(String jobTitle, String jobDescription, String companyName, String qualifications, float cgpaRequired, String jobType, int experienceRequired, Date applicationDeadline, int recruiterId_pakka)

[Else]

sendValidationNotOk()

presentJobForm()

Organize and conduct tests

CLASS DIAGRAM:-

USECASE DIAGRAM:-

wajiha adnan 22i1263
iffah naveed 22i0974
eman shakeel 22i1279

employee recruitment managment system

manage account · view and apply for available jobs · view contract · view appointment · view portfolio · view application status · make contract · job post operations · provide employee recommendations · manage applications · organize and conduct tests · shortlist applicants · generate reports · Book appointment · send messages between actors

Applicant · recruiter · HR manager · admin

D:- VERSION CONTROL:-

https://github.com/iffahnaveed/i220974_i221308_i221279_SE

E : - TRELLO BOARD:-

Employee Recruitment System

Board | Table

Filters | Share

product backlog

- manage applicant accounts (A)
- view and apply for available jobs (A)
- view contract (A)
- view portfolio(A)
- view application status (A)
- communicate with recruiter anf HR (A)
- manage account details (R)
- + Add a card

sprint 1 backlog

- manage applicant accounts (A)
- view and apply for available jobs (A)
- manage account details (R)
- Post and manage job openings(R)
- make contract(HR)
- + Add a card

sprint 2 backlog

- view portfolio(A)
- ○ view application status (A)
- manage applicant shortlisting(R)
- provide recommendation for applicants (HR)
- Organize and conduct test (R)
- + Add a card

sprint 3 backlog

- view contract (A)
- communicate with recruiter and HR (A)
- book appointents(R)
- communicate with applicants (R)
- communicate with applicants(HR)
- generate reports (ADMIN)
- + Add a card

Trello Workspace
Premium

Boards
Members
Workspace settings

PREMIUM

Workspace views
Table
Calendar

Your boards
Employee Recruitment System
Employee Recruitment System
ERMS (D2)