

INDIAN INSTITUTE OF INFORMATION TECHNOLOGY –
INTERNATIONAL CAMPUS DIU



Software Requirements Specification

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Job Portal

Kshitiz Gangwar

Pradeep Kumar Saran

Akshit

Ankit Mishra

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Introduction

1.1 Purpose

The purpose of this SRS document is to provide a detailed description of the functional and non-functional requirements for the development of the Job Connect portal. This document serves as a reference for stakeholders and development teams to ensure clarity and alignment during the development process.

1.2 Scope

Job Connect is a web-based platform that connects job seekers and employers efficiently. It allows job seekers to search and apply for jobs, employers to post job openings, and administrators to manage the platform. The portal will be scalable, secure, and user-friendly.

1.3 Definitions, Acronyms, and Abbreviations

- API: Application Programming Interface
- UI: User Interface
- CRUD: Create, Read, Update, Delete

1.4 References

- [IEEE 830 Standard](#)
- [GDPR Compliance Guidelines](#) (General Data Protection And Regulation)

1.5 Overview

This document is organized into sections detailing the system's overall description, functional and non-functional requirements, system models, external interfaces, and other critical aspects necessary for the development of the Job Connect portal.

Overall Description

2.1 Product Perspective

Job Connect is a **standalone web application** designed to bridge the gap between job seekers and employers. It operates independently but integrates seamlessly with third-party services for enhanced functionality:

- **Notifications:** Use RESTAPI

The application is structured using a **three-tier architecture**:

1. Frontend:

- Built using **Next.js**, ensuring a responsive and dynamic user interface (UI).
- Features modern UI components, real-time updates, and a mobile-friendly design.

2. Backend:

- Developed with **Next.js** providing a scalable and efficient server-side framework.
- Supports RESTful APIs for smooth communication between the frontend and the database.

3. Database:

- **MySQL:** Handles structured data such as user accounts, job postings, and roles.

This combination of technologies ensures scalability, reliability, and optimal performance for users.

2.2 Product Features

The application is designed with the following key features:

1. User Registration and Login:

- Users can sign up with their email or phone number.
- Secure authentication using **bcrypt** for password hashing and **JSON Web Tokens (JWT)** for session management.

2. Role-Based Access Control:

- **Job Seekers:** Can search for jobs, upload resumes, and manage their profiles.

- **Employers:** Can post job openings, review applications, and shortlist candidates.

3. **Job Posting and Searching:**

- Employers can create detailed job postings, including descriptions, requirements, and location.
- Job seekers can search for jobs using filters like location, salary, and job type (full-time, part-time).

4. **Resume Upload and Profile Management:**

- Job seekers can upload their resumes in PDF or DOCX format.
- Employers can view and download resumes.
- Profile customization for both job seekers and employers.

5. **Notifications:**

- Email and SMS notifications application status.
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2.3 User Classes and Characteristics

The platform caters to three main user categories:

1. **Job Seekers:**

- **Characteristics:** Individuals actively searching for job opportunities.
- **Needs:** Easy job search, application tracking, and timely notifications.
- **Skills:** Basic familiarity with web applications.

2. **Employers:**

- **Characteristics:** Recruiters or companies looking to hire candidates.
 - **Needs:** A streamlined process for posting jobs, reviewing applications, and communicating with candidates.
 - **Skills:** Moderate familiarity with web tools.
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2.4 Operating Environment

The application is designed to run seamlessly on the following environments:

1. **Client Devices:**

- Desktop and laptop computers (Windows, macOS, Linux).
- Tablets and smartphones (iOS and Android).

2. Web Browsers:

- Fully compatible with modern browsers: **Chrome, Firefox, Safari, and Microsoft Edge.**

3. Server Environment:

- Hosted on an **Ubuntu Server.**
- Uses **Node.js runtime** for executing backend logic.

4. Database Server:

- **MySQL 8.0:** Manages structured data such as user profiles and job listings.
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2.5 Design and Implementation Constraints

The development of Job Connect must account for the following constraints:

1. Budget and Timeline:

- The project operates within a **limited development budget** and must adhere to a strict timeline.

2. Browser Compatibility:

- The application will support **modern browsers only**, excluding older or deprecated ones like Internet Explorer.

3. Data Privacy:

- Full compliance with **GDPR (General Data Protection Regulation)** and **CCPA (California Consumer Privacy Act).**
 - Ensures user data is securely stored, accessed, and processed.
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2.6 Assumptions and Dependencies

The success of the application is contingent on the following:

1. User Internet Access:

- Assumes that users have **stable internet connections** to access the platform without interruptions.

2. Server Availability:

- The platform assumes a consistent uptime for the **Ubuntu Server** hosting the backend.

Functional Requirements

ID	Title	Description
FR1	User Registration	Users can register with email, password, and role selection (Job Seeker/Employer).
FR2	Job Posting	Employers can post job openings with details like title, description, and salary.
FR3	Job Search and Filter	Job seekers can search and filter jobs by keywords, location, and job type.
FR4	Resume Upload	Job seekers can upload and update their resumes.
FR5	Notifications	Email and SMS notifications for job application status
FR6	Chat	Anyone can chat with anyone registered in the job Portal
FR7	Skill Assessment	Job seekers can take skill-based quizzes and coding challenges. Scores can be shared with employers to highlight expertise. Employers can create custom assessments for candidates.

Non-Functional Requirements

Type	Requirement
Performance	The system shall handle 500 concurrent users with <500ms response time.
Security	Passwords shall be hashed using bcrypt.
Scalability	The system shall support horizontal scaling to accommodate growth.
Usability	The interface shall comply with WCAG 2.0 accessibility guidelines.
Availability	The system shall be available 99.9% of the time annually.

External Interface Requirements

6.1 User Interfaces

- **Home Page:** Job search bar, login/register buttons.
- **Employer Dashboard:** List of job postings, analytics, and candidate management.

6.2 Hardware Interfaces

- **Devices:** Minimum 2GB RAM, modern browser support.

6.3 Communication Interfaces

- **Protocol:** HTTPS for secure data transfer.

Other Requirements

- **Legal Compliance:**
GDPR and CCPA for user data privacy.
- **Backup and Recovery:**
Automatic daily backups of the database.

Appendices

Glossary of Terms

This section defines key terms and concepts used in the **Job Connect** application:

1. **Job Seeker:** An individual actively looking for employment opportunities through the platform. They can upload resumes, apply for jobs, and manage their profiles.
 2. **Employer:** A company or recruiter seeking to hire employees. Employers can post job openings, review applications, and communicate with job seekers.
 3. **Role-Based Access Control (RBAC):** A method of restricting application features and data access based on user roles (e.g., Job Seeker, Employer).
 4. **Resume Upload:** A feature allowing job seekers to upload their resumes in supported formats (e.g., PDF, DOCX).
 5. **RESTful API:** A set of web services adhering to the REST (Representational State Transfer) architecture, used for communication between the frontend and backend.
 6. **MySQL:** A relational database management system (RDBMS) used to store structured data such as user details, job postings, and role information.
 7. **GDPR:** The General Data Protection Regulation, a European Union standard for data privacy and protection.
 8. **Skill Assessment:** A feature that allows job seekers to take **quizzes or tests** to evaluate their skills in different job categories. Results can be added to their profiles to enhance credibility
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Example User Workflows

1. Job Seeker Workflow:

- **Step 1:** Register an account by providing an email address, password, and basic profile information.
- **Step 2:** Log in to the platform and complete the profile by uploading a resume and specifying preferences (e.g., desired job location, job type).
- **Step 3:** Search for jobs using filters like salary, job type, or location.
- **Step 4:** Apply for a job by clicking on a listing, reviewing the details, and submitting an application.

- **Step 5:** Receive notifications (email or SMS) for application status
- **Step 6:** Participate in **Skill Assessments** to validate expertise and improve job recommendations.
- **Step 7:** Earn **points** for completing profile sections, taking skill assessments, and actively applying for jobs.

2. Employer Workflow:

- **Step 1:** Register an account with company details and an email address.
- **Step 2:** Log in and create a company profile, including a logo and description.
- **Step 3:** Post a job opening by entering the job title, description, requirements, and location.
- **Step 4:** Review applications submitted by job seekers and download their resumes.
- **Step 5:** Shortlist candidates and communicate with them via email or platform messaging.
- **Step 6:** View candidates' **Skill Assessment results** to make informed hiring decisions.

References to Related Standards and Protocols

1. Data Privacy Standards:

- **GDPR:** The platform ensures compliance with GDPR by implementing secure user consent mechanisms, data encryption, and the ability for users to delete their accounts.

2. Authentication Protocols:

- **OAuth 2.0:** Used for secure user authentication and authorization.
- **JWT (JSON Web Tokens):** Implements session management to ensure secure communication between the frontend and backend.

3. Notification Protocols:

- **SMTP (Simple Mail Transfer Protocol):** Used for sending emails via providers like SendGrid.
- **REST API:** Twilio integration for sending SMS notifications.

4. Database Standards:

- **SQL:** Complies with ANSI SQL standards for MySQL operations.
- **ACID Transactions:** Ensures data integrity and consistency in MySQL.

5. Web Standards:

- **HTML5 and CSS3:** Ensures a modern and responsive design compatible with all major browsers.
- **WCAG 2.1:** Implements accessibility standards to cater to users with disabilities.

6. Security Protocols:

- **HTTPS:** Ensures encrypted communication between the client and server.
- **Data Encryption:** Sensitive data like passwords is stored using hashing algorithms (e.g., bcrypt).

7. API Standards:

- Follows RESTful design principles for consistent and scalable API development.