
SOFTWARE REQUIREMENTS SPECIFICATION

For
Job Portal

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1. Introduction

1.1 Purpose

The purpose of a job portal is to connect employers and job seekers efficiently through an online platform. It facilitates the job search process by allowing individuals to search for job opportunities, apply for positions, and manage their applications. Employers use job portals to post job openings, search for suitable candidates, and streamline the hiring process. Overall, job portals serve as a centralized hub for job-related activities, making it easier for both employers and job seekers to find and fill positions.

1.2 Document Conventions

- Entire document should be justified.
- Convention for Main title
 - Font face: Times New Roman
 - Font style: Bold
 - Font Size: 14
- Convention for Sub title
 - Font face: Times New Roman
 - Font style: Bold
 - Font Size: 12
- Convention for body
 - Font face: Times New Roman
 - Font Size: 12

1.3 Scope of Development Project

The scope for the development of job portals lies in continual technological innovation and adapting to evolving workforce trends. Future developments may include enhanced AI algorithms for precise job matching, improved mobile interfaces for seamless user experiences, deeper integration with social and professional networks, and further expansion into remote and gig opportunities. Additionally, blockchain technology could be explored for secure credential verification, contributing to increased transparency and trust in the hiring process. As the job market evolves, continuous improvement and responsiveness to user needs will be key areas for the ongoing development of job portals.

1.4 Definitions, Acronyms and Abbreviations

JAVA -> platform independence
SQL-> Structured query Language
ER-> Entity Relationship
UML -> Unified Modeling Language
IDE-> Integrated Development Environment
SRS-> Software Requirement Specification

1.5 References

Here are reference links for some popular job portals:

- academia.edu
- freeprojectz.com
- freestudentprojects.com
- <https://www.kashipara.com/project/java/75/online-job-portal-system-in-jsp-project-with-source-code>
- <https://1000projects.org/online-job-portal-java-project-report-source-code.html>

2. Overall Descriptions

2.1 Product Perspective

Use Case Diagram of Job Portal

2.2 Product Function

Entity Relationship Diagram of Job Portal

2.3 User Classes and Characteristics

The application provides different types of services based on the type of users [Jobseeker/Employer]. The Admin will be acting as the controller and he will have all the privileges of an administrator. The member can be either a jobseeker or Employer who will be able to view Resume

The features that are available to the Employer are:-

- Can post vacancy
- Can view potential job seekers resume
- Can hire jobseekers at ease.
- Can create a profile for the MNC
- Can advertise the company
- Can notify

The features that are available to the Jobseeker are:-

- Can find various job opportunities in different domains
- Can be highly resourceful
- Can get consistent job alerts
- All the information are highly confidential
- It is cost effective
- Can update the resume
- Can check the vacancy
- Can be accessible anywhere at anytime

2.4 Operating Environment

2.5 Assumptions and Dependencies

- The assumptions are:-
- The coding should be error free
- The system should be user-friendly so that it is easy to use for the users
- The information of all users, resume and cv must be stored in a database that is accessible by companies
- The system should have more storage capacity and provide fast access to the database
- The system should provide search facility and helps in notification
- Users must have their correct usernames and passwords to enter into their online accounts and do actions Internet connection

The dependencies are:-

- The specific hardware and software due to which the product will be run
- On the basis of listing requirements and specification the project will be developed and run
- The admin should have proper understanding of the product
- The system should have the general report stored
- The information of all the users must be stored in a database that is accessible by the Admin

2.6 Requirement

Software Configuration :-

This software package is developed using java as front end, Microsoft SQL Server as the back end to store the database.

Language: Java Runtime Environment, Net beans 7.0.1 (front end)

Database: MS SQL Server (back end), JAVA

Hardware Configuration:-

Processor: Pentium(R)Dual-core CPU

Hard Disk: 40GB

RAM: 256 MB or more

2.7 Data Requirement

The inputs consist of the query to the database and the output consists of the solutions for the query. The output also includes the user receiving the details of their accounts. In this project the inputs will be the queries as fired by the users and companies like create an account, selecting jobs and putting into account. Now the output will be visible when the user requests the server to get details of their account in the form of time, date and which jobs are currently in the account.

3. External Interface Requirement

3.1 User Interfaces

Describe the logical characteristics of each interface between the software product and the users. This may include sample screen images, any GUI standards or product family style guides that are to be followed, screen layout constraints, standard buttons and functions (e.g., help) that will appear on every screen, keyboard shortcuts, error message display standards, and so on. Define the software components for which a user interface is needed. Details of the user interface design should be documented in a separate user interface specification.

3.2 Hardware Interfaces

Describe the logical and physical characteristics of each interface between the software product and the hardware components of the system. This may include the supported device types, the nature of the data and control interactions between the software and the hardware, and communication protocols to be used.

3.3 Software Interfaces

Describe the connections between this product and other specific software components (name and version), including databases, operating systems, tools, libraries, and integrated commercial components. Identify the data items or messages coming into the system and going out and describe the purpose of each. Describe the services needed and the nature of communications. Refer to documents that describe detailed application programming interface protocols. Identify data that will be shared

across software components. If the data sharing mechanism must be implemented in a specific way (for example, use of a global data area in a multitasking operating system), specify this as an implementation constraint.

3.4 Communications Interfaces

Describe the requirements associated with any communications functions required by this product, including e-mail, web browser, network server communications protocols, electronic forms, and so on. Define any pertinent message formatting. Identify any communication standards that will be used, such as FTP or HTTP. Specify any communication security or encryption issues, data transfer rates, and synchronization mechanisms.

4. System Features

The users of the system should be provided the surety that their account is secure. This is possible by providing :-

- User authentication and validation of members using their unique member ID
- Utilize secure login information.
- Check applicant information.
- Be on the alert for phishing scams.
- Don't provide sensitive information.
- Report suspect activity.
- Proper accountability which includes not allowing a member to see other member's account. Only administrator will see and manage all member accounts

5. Other Non-functional Requirements

5.1 Performance Requirement

Job portal developed in Java should include specific performance requirements to ensure that the system meets the desired performance standards. Below are some performance-related requirements that can be included in the SRS document:

- Define the maximum acceptable response time for critical user interactions, such as loading job listings, submitting applications, and searching for jobs.
- Describe how the system will scale with an increase in the number of users or job listings.
- Specify the expected number of concurrent users the system should support without degradation in performance.

5.2 Safety Requirement

The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup so that the database is not lost. Proper UPS/inverter facility should be there in case of power supply failure.

5.3 Security Requirement

- System will use secured database
- Implement multi-factor authentication for user login.
- Utilize role-based access controls to manage user permissions.
- Implement comprehensive logging of security-relevant events.
- Include auditing mechanisms to monitor user activities and detect anomalies.
- Proper user authentication should be provided
- Adhere to data protection laws and regulations.
- Implement mechanisms for secure handling of personal information.
- include explicit user consent features to ensure privacy compliance.

5.4 Requirement attributes

- Assign a unique identifier or code to each requirement for easy reference and traceability.
- Provide a concise and descriptive title for each requirement to convey its purpose.
- Specify the method or approach that will be used to verify and validate the implementation of each requirement
- Identify any constraints or limitations that may impact the implementation of the requirement (e.g., budget, time constraints).

5.5 Business Rules

A business rule is anything that captures and implements business policies and practices. A rule can enforce business policy, make a decision, or infer new data from existing data. This includes the rules and regulations that the System users should abide by. This includes the cost of the project and the discount offers provided. The users should avoid illegal rules and protocols. Neither admin nor member should cross the rules and regulations.

5.6 User Requirement

The users of the system are members and admin who act as administrator to maintain the system. The members are assumed to have basic knowledge of the computers and internet browsing. The administrators of the system should have more knowledge of the internals of the system and is able to rectify the small problems that may arise due to disk crashes, power failures and other catastrophes to maintain the system. The proper user interface, user manual, online help and the guide to install and maintain the system must be sufficient to educate the users on how to use the system without any problems.

The admin provides certain facilities to the users in the form of:-

- User Registration
- Profile Management
- Job Search and Filters
- Application Submission
- Notifications
- Saved Jobs and Searches
- Privacy Settings
- User Feedback Mechanism
- Integration with Social Media

6. Other Requirements

6.1 Data and Category Requirement

There are different categories of users namely, Admin, students etc. Depending upon the category of user the access rights are decided. It means if the user is an administrator then he can be able to modify the data, delete, append etc. All other users except the Librarian only have the rights to retrieve the information about database. Similarly there will be different categories of books available. According to the categories of books their relevant data should be displayed. The categories and the data related to each category should be coded in the particular format.

6.2 Appendix

A: Admin, Abbreviation, Acronym, Assumptions; B: Business rules; C: Class, Client, Conventions; D: Data requirement, Dependencies; G: GUI; K: Key; J: Job, jobseeker ; M: Member; N: Non-functional Requirement; O: Operating environment; P: Performance, Perspective, Purpose; R: Requirement, Requirement attributes; S: Safety, Scope, Security, System features; U: User, User class and characteristics, User requirement;

6.3 Glossary

The following are the list of conventions and acronyms used in this document and the project

as well:

- Administrator: A login id representing a user with user administration privileges to the software
- User: A general login id assigned to most users
- Client: Intended users for the software
- SQL: Structured Query Language; used to retrieve information from a database
- SQL Server: A server used to store data in an organized format
- Layer: Represents a section of the project
- User Interface Layer: The section of the assignment referring to what the user interacts with directly
- Application Logic Layer: The section of the assignment referring to the Web Server. This is where all computations are completed
- Data Storage Layer: The section of the assignment referring to where all data is recorded
- Use Case: A broad level diagram of the project showing a basic overview
- Class diagram: It is a type of static structure diagram that describes the structure of a system by showing the system's cases, their attributes, and the relationships between the classes
- Interface: Something used to communicate across different mediums
- Unique Key: Used to differentiate entries in a database

6.4 Class Diagram

A class is an abstract, user-defined description of a type of data. It identifies the attributes of the data and the operations that can be performed on instances (i.e. objects) of the data. A class of data has a name, a set of attributes that describes its characteristics, and a set of operations that can be performed on the objects of that class. The classes' structure and their relationships to each other frozen in time represent the static model. In this project there are certain main classes which are related to other classes required for their working. There are different kinds of relationships between the classes as shown in the diagram like normal association, aggregation, and generalization. The relationships are depicted using a role name and multiplicities.