

Online Job Portal

A Project

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Abstract

JOB SEARCH PORTAL

Finding jobs that best suits the interests and skill set is quite a challenging task for the job seekers. The difficulties arise from not having proper knowledge on the organization's objective, their work culture and current job openings. In addition, finding the right candidate with desired qualifications to fill their current job openings is an important task for the recruiters of any organization. Online Job Search Portals have certainly made job seeking convenient on both sides. Job Portal is the solution where recruiter as well as the job seeker meet aiming at fulfilling their individual requirement. They are the cheapest as well as the fastest source of communication reaching wide range of audience on just a single click irrespective of their geographical distance.

The web application "Job Search Portal" provides an easy and convenient search application for the job seekers to find their desired jobs and for the recruiters to find the right candidate. Job seekers from any background can search for the current job openings. Job seekers can register with the application and update their details and skill set. They can search for available jobs and apply to their desired positions. Android, being open source has already made its mark in the mobile application development. To make things handy, the user functionalities are developed as an Android application. Employer can register with the application and posts their current openings. They can view the Job applicants and can screen them according to the best fit. Users can provide a review about an organization and share their interview experience, which can be viewed by the Employers.

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Chapter 1 - Project Description

1.1 Introduction

Job Search Portal is a web application, which serves jobseekers to find available job vacancies and Employers to identify eligible job seekers with the prospect of selecting the most qualified candidates. The only way to select best-qualified candidate is to have a pool of eligible applicants, which is possible by drawing the interest of individuals in the market. Job search portals best serve this purpose. E-recruitment has become the standard means for employers and job seekers to meet their respective objectives. The traditional methods for recruitment includes Job fairs, University career employment services, Employee referrals, advertising in the newspapers, televisions etc. With the advancement in technology and growth of internet usage, the e-recruitment has revolutionized the way organizations hire and candidates search for jobs. With the Online Job search portals, the recruitment process is speeded up at every stage from job postings, to receiving applications from candidates, interviewing process. The cost of searching/posting jobs will be much less compared to the traditional way of advertising. Job search portal stands as an effective means for Employers to outline the job vacancies, responsibilities and qualifications to attract jobseekers. Using the portal jobseekers can extensively search for jobs in companies, organizations and regions they may otherwise have not learnt. In addition, candidates/Employers can write a review about an organization, which might help them to change the way things are done.

1.2 Motivation

The purpose of developing an Online Job Search Portal comes from our idea to make the job search efficient and handy. It helps the recruiters as a primary source of talent search. It also helps the job seekers to search for current vacancies at a single point. Therefore, we can say that Online Job Search Portal act as a bridge of communication between organizations and applicants. With the evolution of technology and internet being the main source of information for the applicants, these job portals and have become an excellent method to reach wide range of audience. Initially, when we are unaware of these portals, we used to do research about companies and their technology stack through their respective websites and apply if the job responsibilities matches our interests. This requires lots of effort and time. However, later when we realized the importance of job search portals, we able to access jobs in companies, locations that we might not otherwise have learned.

Chapter 2 - Requirement Analysis

2.1 Requirement Gathering

Requirement Analysis is the first and important step in the Software development activity for building robust and user-friendly applications. We have started working on determining the functionalities that the application should provide. We have done a good amount of research on existing systems and the disadvantages of those. Once the functional requirements are finalized, I did research on the current technologies that are widely used in the industry and decided to use Spring MVC, hibernate replacing the traditional way of developing web applications. After a meeting with our project supervisor Shamim Reza Sajib, we decided to develop a web based application as well to provide more flexibility to the users.

2.2 Requirement Specifications

Below are the technical requirements to develop Job Search Portal application

2.2.1 Software Requirements

Operating System: Windows 10

Application Server: Apache Tomcat 8.5.6

Database: MySQL, SQLite Database

Front End: HTML5, CSS3, JavaScript, jQuery

Web Service: RESTful web services

Browser: Chrome or Firefox or Internet Explorer

2.2.2 Hardware Requirements

Processor: Intel core i3 or higher processor

Processor speed: 3.40 GHz

RAM: 4 GB

Chapter 3 - System Design

3.1 System Design

Systems design is the process of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements. System designs are modeled using UML which is a standard object-oriented analysis and design language. The UML is a collection of diagrams and standard set of notations for specifying and visualizing various aspects such as requirements and design of software systems.

3.1.1 Use Case Diagram

A diagram is a visualization of set of elements and the relationships between them. Use case is a set of scenarios, which defines functionalities of the system from a user's perspective. The main components of a use case diagram include actors, use cases and their relationships. They depict the interaction between actors and system to achieve certain goal. This, a use case diagram is important in modelling the behavior of a system.

Use Case Diagram for Job Search Portal

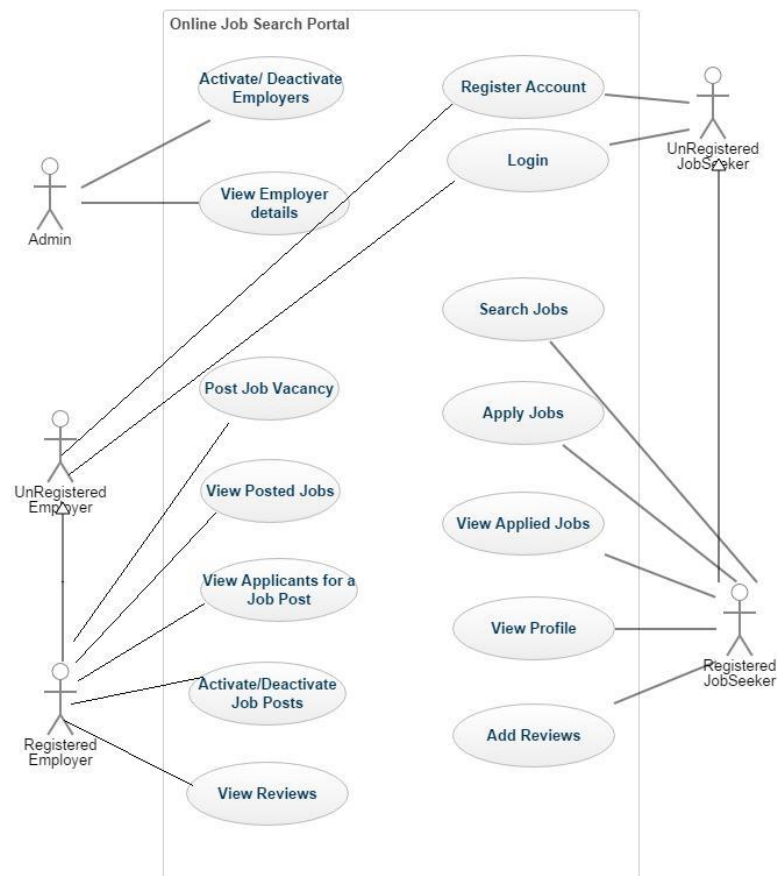


Figure 3.1.1: Use Case Diagram

Actors:

The Actors of the system are Admin, Unregistered Employer, Register Employer, Unregistered Jobseeker and Registered Jobseeker.

Use cases:

I have identified a set of use cases based on the functionalities and goals of the application.

Register Account- This use case denotes a set of actions required for Employer and Job seeker to register with the application.

Login- This use case denotes a set of actions required for Employer and Job seeker to login into the application.

Activate/De-activate Account- This use case denotes a set of actions required for admin to activate or de-activate the Employers.

View Employers- This use case denotes a set of actions required for admin to view the Employers that are registered with the application.

Add Job Vacancy- This use case denotes a set of actions required for Employer to post a job vacancy.

Activate/De-activate Job Post- This use case denotes a set of actions required for Employer to change the status of the Job Post.

View Applicants for a Job Post- This use case denotes a set of actions required for Employer to view the list of applicants for a particular job post.

View Reviews- This use case denotes a set of actions required for Employer to view Reviews provided by the applicants.

View Job Posts- This use case denotes a set of actions required for Employer to view all the jobs posted by the Employer.

Search Job Posts- This use case denotes a set of actions required for Job Seeker to search available and active jobs.

Apply for Job- This use case denotes a set of actions required for Job Seeker to apply for an available job vacancy.

Add Reviews- This use case denotes a set of actions required for Job Seeker to add Reviews for an organization that can be viewed by the Employer.

3.1.2 Class Diagram

Class diagram is a graphical representation of the static view of the system. It describes the design and structure of the system by displaying the system's classes, their attributes, methods and relationships among objects.

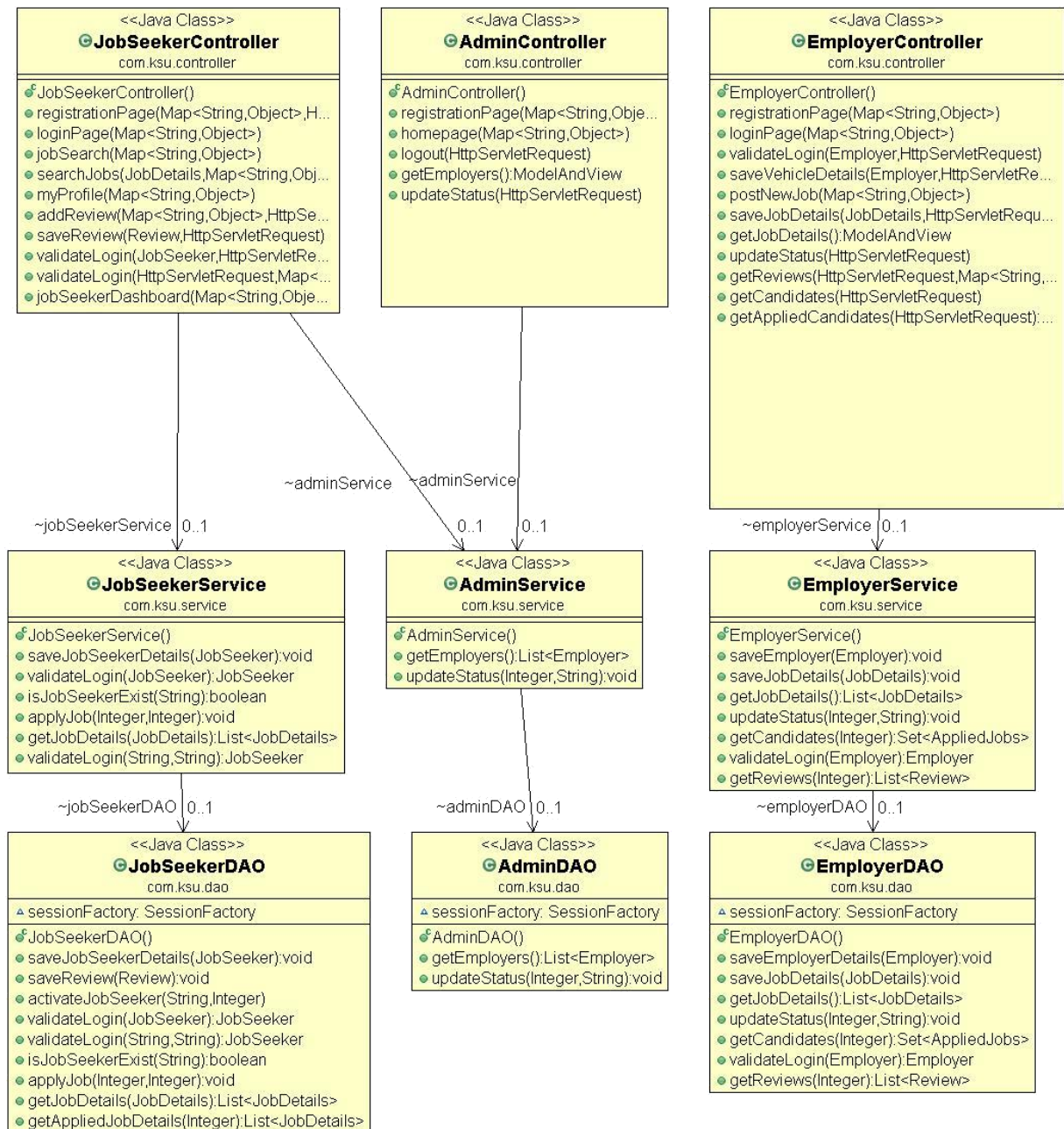


Figure 3.1.2: Class Diagram

3.1.2.1 Controller classes: The Project contains three controller classes i.e. AdminController, JobSeekerController and EmployerController. These classes are responsible for handling HTTP requests and returns HTTP response.

3.1.2.2 Service classes: The Project contains three Service classes i.e. AdminService, JobSeekerService and EmployerService. The Controller classes pulls data from the request and passes it to the appropriate service class. The Service classes are responsible for called or more DAO class.

3.1.2.3 DAO classes: The Project contains three Service classes i.e. AdminDAO, JobSeekerDAO and EmployerDAO. The DAO classes contains the query code and directly interacts with the model classes. The DAO classes send back model classes to the Controller class in order to be sent to the view layer.

Chapter 4 - Database Design

The database that is used to design the web application is MySQL. MySQL workbench is used to create tables and run queries. In this application development, we have used MySQL to store employer details, jobseeker details, applied jobs by the applicants, jobs posted by the employer. Hence, we have identified five tables to achieve desired functionality.

- i. Employer table: holds details of Employer
- ii. Jobseeker table: holds details of applicant
- iii. Applied Jobs table: holds details of jobs applied by the job seeker
- iv. Posted Jobs table: holds details of jobs posted by the Employer
- v. Reviews table: holds the reviews for interview, salary, work life provided by the jobseeker

When employer registers with the application, the application inserts the details of the employer into the Employer table. Similarly, when a jobseeker creates an account, his/her details will be inserted into the Jobseeker table. When jobseeker searches for the available job vacancies, the application queries the database to retrieve the job vacancies that are posted by the employer from the Posted Jobs table. Similarly, when an employer wishes to view the applicants for a particular job posting, the application queries the database to retrieve the details of the job and job seeker from the Applied Jobs table. In addition, the employer can activate or deactivate the job status thus updating the database. The jobseeker can provide reviews about an organization and will be saved in the Reviews table.

Chapter 5 – Implementation

The Online Job Search Portal is a web-based and android application, which revolutionizes the way companies hire the candidates and jobseekers search for job vacancies. The employers can view reviews given by the jobseekers and make improvements in their system accordingly. The application provides a flexible and easy to use environment on desktops as well as portable devices like smart phones/tablets for the users to achieve their respective objective the modules that we have implemented in the Job Search Portal are as listed.

Admin ,Employer ,Jobseeker

5.1 Admin

Spring Security provides the Admin login. The Admin module provides various functionalities. The Admin users are responsible for activating and deactivating the employer accounts. In addition, Admin users can view the list of employers registered with the application.

5.2 Employer

Employer users will be able to perform functions such as registering with the application and creating an account by providing the details of Employer Name, Employer Code, Address, Company E-mail, Mobile Number, Login Name, and Password that are stored in the Employer table of MySQL database. Once the account is activated, this module allows employers to post jobs summarizing responsibilities and expected skills that will be saved in the Posted Jobs table of MySQL database. The employer will also be given privilege to activate or deactivate jobs. He/she can view the list of job postings that are active. He/she can also view the applicant details that have applied for a particular job posting. The employer will be able to view reviews provided by the jobseeker.

5.3 Jobseeker

The Jobseeker users will be able to perform functions such as registering with the application and creating an account by providing the details of First Name, Last Name, E-mail, Password, Mobile Number, Primary Skill and Experience that are stored in the Jobseeker table of MySQL database.

Once the account is activated, jobseekers can search, view and apply for active job openings. All the applied jobs details are stored in the Applied Jobs table of MySQL database. The applicants can also write/update reviews for the companies.

The Online Job Search web application is developed on Eclipse IDE using Java 1.8 and Spring MVC framework. I have used annotation configuration for spring replacing XML configurations. The application uses Hibernate framework for mapping object-oriented domain model to a relational database. The backend database for the web application is MySQL and I have used MySQL workbench and MySQL query browser for managing the database. The web application is deployed in the tomcat server. An android application is developed for the jobseeker module using Android Studio IDE, Android SDK framework and Java using the RESTful web services provided by the web application.

Chapter 6 - Graphical User Interface

The Graphical User Interface are developed using HTML5, CSS, JavaScript, jQuery and Bootstrap to provide an easy to understand interactive screens. Various screens and the navigation between screens are discussed below.

6.1 Home Page

The home page appears on the start of the application. The screen will provide various functionalities like Home, Admin, Employer Registration, Employer Login, Jobseeker Registration and Jobseeker Login. When clicked on the button, it navigates to the respective screens.



Welcome To JOB PORTAL

Welcome to online Job Portal. It provides facility to the Job Seeker to search for various jobs as per his qualification. Here Job Seeker can registered himself on the web portal and create his profile along with his educational information. Job Seeker can search various jobs and apply for the Job.

This Portal is also designed for the various employer who required to recruit employees in their organization. Employer can registered himself on the web portal and then he can upload information of various job vacancies in their organization. Employer can view the applications of Job Seeker and send call latter to the job seekers.

For Advertise

Contact
0111111111

Login

User Name
admin

Password
.....

User Type
Employer

Login

[Forgot Password?](#)

Fig 6.1: Home page

6.2 Admin

After successful login, the admin navigates to the Admin dashboard page where he/she can access the details of the List of Employers registered with the application. He can also activate or deactivate Employers.



Figure 6.2: Admin Dashboard

6.3 Employer Dashboard

On successful registration and login, employer navigates to the Employer dashboard page where he can post a job or view the list of jobs posted.



Figure 6.3: Employer Dashboard

6.4 Post New Job

On clicking the Post New Job tab on the Employer page, the employer navigates to the Post New Job page where he posts current job opening with summary of qualifications and responsibilities.

Home Profile Manage Job Manage Walkin Application Logout

≡ Welcome ABC

Manage Job

Job Title:

Total Vacancy:

Qualification: B.C.A ▼

Other:

Description:

Submit

Welcome

ABC

Fig 6.4 : Post New Job

6.5 Jobseeker Dashboard

After successful registration and login, jobseeker navigates to Job Portal Page facilitating the functionalities of viewing his/her profile, Search Jobs, View applied jobs and add reviews.

JOB SEEKER'S PLACE

Home Profile Education Search Job Walkin Interview Feedback Logout

≡ Welcome To Control Panel

Profile Education Search JOB

Walkin Feedback Logout

Welcome

ttt

Figure 6.5: Job Seeker dashboar

6.6 Applied Jobs

On clicking the applied jobs tab, the jobseeker will be navigated to the Applied Jobs page which displays the details of the jobs applied.

JOB SEEKER'S PLACE

Home Profile Education Search Job Walkin Interview Feedback Logout

Search Job

Select Qualification: B.C.A ▼

Select Compnay Name: ABC ▼

Select Area of Work: Manager ▼

Search

JobId	1
CompanyName	ABC
JobTitle	Manager
Vacancy	1
MinQualification	B.C.A
Description	assdadadasdas
	Apply For Job

Welcome

ttt

Figure 6.6: Applied Jobs

6.7 Job Seeker Registration

Job seeker's can easily registration themselves by clicking registration here.

Job Seeker Registration Form		For Advertise
JobSeeker Name:	<input type="text"/>	Contact 01111111111
Address:	<input type="text"/>	
City:	<input type="text"/>	
Email:	<input type="text"/>	
Mobile:	<input type="text"/>	
Qualification:	B.C.A ▼	
Other:	<input type="text"/>	
Gender:	Male ▼	
BirthDate:	<input type="text"/>	
Upload Marksheet:	<input type="button" value="Choose File"/> No file chosen	
User Name:	admin	
Password:	
Security Question:	What is Your Pet Name? ▼	
Answer:	<input type="text"/>	
<input type="button" value="Submit"/>		

For Advertise

Contact
01111111111

Login

User Name
admin

Password
.....

User Type
Employer ▼

[Forgot Password?](#)

Fig 6.7: Job Seeker Registration

6.8 Employer Registration

Employer can easily registration themselves by clicking registration here.

[Home](#) [About Us](#) [Employer](#) [Job Seeker](#) [Latest News](#) [Contact Us](#)

Employer Registration Form

Company Name:	<input type="text"/>
Contact Person:	<input type="text"/>
Address:	<input type="text"/>
City:	<input type="text"/>
Email:	<input type="text"/>
Mobile:	<input type="text"/>
Area of Work:	<input type="text"/>
User Name:	<input type="text" value="admin"/>
Password:	<input type="password" value="....."/>
Security Question:	<input type="text" value="Who is Your Favourite P ▼"/>
Answer:	<input type="text"/>
<input type="button" value="Submit"/>	

For Advertise

Contact
01111111111

Login

User Name

Password

User Type

[Forgot Password?](#)

Fig 6.8: Employer Registration

6.9 Latest News

Admin can announce important new for employer job seekers .



Fig 6.9: Latest News

Chapter 7 - Conclusion and Future Work

7.1 Conclusion

Job Search Portals stands as a revolutionizing element in the sphere of recruitment. They act as a communication bridge between applicants and recruiters facilitating their requirements. This application helps organizations to have a greater exposure to the candidate pool and also job seekers facilitating wide search of jobs matching their interests. The web based application provides flexibility to the jobseekers to view the openings and applied jobs without the need to carry a laptop. This application provides an enhanced user experience for both employer and jobseeker. It provides user friendly interface which facilitates in reaching wide range of audience. The application has achieved all the requirements that were initially set in the requirements gathering phase. This project taught me some best practices in the technology stack like Spring MVC, Hibernate ORM, RESTful web services. Starting from requirements elicitation to design, construction, implementation and testing, I have gained a very good experience working with various technologies at every phase. Development of this project boosted my confidence in mobile and web development.

7.2 Future Work

This project fulfills the primary requirements of the job seekers and employers. It can be extended in several ways – We can provide recommendations and email updates for new job postings based on the job seeker's search history. Since, the job seekers might be interested in building a strong Resume, we can provide tips and information for the same. We can also provide templates for building the Resumes which might interest most applicants. The mobile application is developed fulfilling the functionalities of job seeker, it can be extended to support functionalities of Employer as well.

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