

# SMART JOB PORTAL

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# **SMART JOB PORTAL**



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# **Chapter 1**

## **INTRODUCTION**

A typical job portal helps job seekers to find job advertisements for employment opportunities. It helps employers find suitable candidates for their job openings. It is a one-stop shop for job seekers and employers to connect and interact with each other. Job portals provide a wide range of services as job postings, job searches, resume building, job alerts, and more. They also provide employers with access to a large pool of potential candidates and help them to find the right person for the job. Job portals are becoming popular as they provide a convenient and efficient way for employers and job seekers to connect. This chapter describes the overview of the proposed system.

### **1.1 Overview**

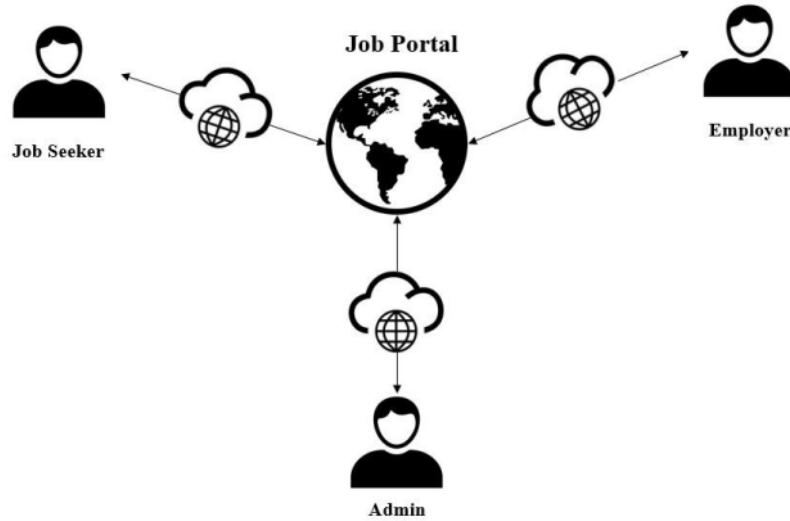
The system enables job seekers to search for jobs and employers to post job advertisements. In response to job postings, job searchers submitted their applications or CVs. Admin can manage (update and add) cities, countries, skills, and industries. Moreover, it also enables the admin to approve the member profile and job advertisement.

### **1.2 Scope**

The proposed system enables portal admin to manage (add or update) skills, countries, industries, and cities. Employers can post job advertisements, modify, and delete job advertisements. Job seekers can search for a job by city, country, skill, and industry, apply for job advertisements, and upload CVs.

### **1.3 Problem Domain**

The proposed system belongs to the area of management information systems, enterprise resource planning (ERP), profiling, and database management.



**Figure 1. 1 Deployment diagram of Smart Job Portal**

Figure 1.1 describes the overall workflow of the system. The users can log in to the website. The admin is responsible for content management. Content management includes adding and updating cities, countries, skills, and industries.

- A Job seeker can search job, apply for job and give feedback.
- An Employer can post a job, manage jobs, view and download CVs.
- The Administrator is able to manage skills, cities, countries and industries.
- The Administrator can monitor job post and member profile.

#### **1.4 Purpose**

The purpose is to develop a platform where job seekers can search for a job by city, country, skill, and industry, apply for jobs and enables employers to post their jobs and receive job applications.

#### **1.5 Organization of the document**

The following subsections provide an overview of the chapters of the remaining document.

### **1.5.1 Chapter 2:**

This chapter describes the related applications such as features of Rozee, Indeed, monster, and Smart job portal (The proposed system)

### **1.5.2 Chapter 3:**

This chapter describes the tools used to develop the project and the technology used for implementation.

### **1.5.3 Chapter 4:**

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This chapter deals with the functional and non-functional requirements of the proposed system. It also describes use cases for the admin panel, the employer, and the job seeker panel. Use case diagrams and sequence diagrams are also in this chapter

### **1.5.4 Chapter 5:**

This chapter describes the database design and table descriptions.

### **1.5.5 Chapter 6:**

This chapter describes the system testing and all the test cases for admin, employer, and job seeker.

### **1.5.6 Chapter 7:**

This chapter has the user manual of the proposed system.

### **1.5.7 Chapter 8:**

This chapter describes the conclusion and future work for the Smart job portal.

## **1.6 Summary**

This chapter describes the introduction of the Smart job portal. The overview of the proposed system. The purpose of the Smart job portal and its scope. The next chapter contains the study of related systems.

## **Chapter 2**

### **STUDY OF RELATED SYSTEMS**

Study of related systems provides insights into the feature and functions of some of the most popular job portals, which are being used in Pakistan and all over the world.

#### **2.1 Rozee (rozee.pk)**

One of the most well known internet job boards, Rozee, matches talent with opportunities. It offers services to both businesses and job searchers by giving them access to the same platform for posting and searching for jobs, respectively.

Around 100,000 employers and 9.5 million professionals use it, making it Pakistan's largest online recruitment platform. Around 1 million job placements have been made using Rozee's platform since it launched, and it possesses Pakistan's biggest searchable CV database.

The features provided by rozee are given below:

- Job Alerts
- Mobile App
- Referral Tracker
- Interview evaluation form
- Test Builder for weeding out the best applicants
- Post a job
- Upload CV
- Create New Folder
- Upload Multiple CVs
- Mailbox
- Auto Emails
- CV Search
- CV Writing Services

- Reported Companies
- Searching by job title, skill or company
- View Profile
- Change password
- Manages Jobs

## 2.2 Indeed (indeed.com)<sup>3</sup>

Indeed is a reliable job search engine for both companies and job seekers and employers around the world. It is available in 28 languages and more than 60 different nations. The website is designed with search engine techniques similar to those used by Google, enabling job searchers to quickly and conveniently search for and apply to openings that match their qualifications, experience, and career goals. Employers can also utilize the website to identify candidates who meet their hiring needs. Employees looking for new jobs can create a resume on the site, get email notifications when new positions are posted, and interview and hire their chosen candidates. Employers can post jobs, interview, and hire their preferred applications.

Using Indeed.com, job seekers can receive email job notifications. All they need to do set the job alerts preferences for their account. Job seekers can choose to receive daily, weekly, or monthly job alerts whenever a new position is posted.

The features provided by indeed are given below:

- Sponsor Job from Career Sites<sup>3</sup>
- Large Scale Hiring
- Aggregates Jobs Listings
- Email Job Alerts
- Free Job Postings
- Global Talent Pool
- Network/System Integration
- Google-like search engine
- Resume Builder

- Sponsored Jobs
- Mobile Apps
- Easy To Navigate
- Dominant Resource

### **2.3 Monster (monster.com)**

One of the most well known job portal websites, Monster, matches talent with opportunities. It offers services to both employers and job searchers by giving them access to the same platform for posting and searching for jobs, respectively. Monster is an international job-listing website.

The company also provides a highly rated app for job seekers on Google Play and the Apple App Store. It is advantageous for job seekers, companies since it makes Monster's services easier to use, and appeals to a society becoming more dependent on smartphones.

The features of the monster are listed below:

- Wide variety of job listings
- Multiple ways to filter jobs
- Read industry overviews
- Library of educational content
- Resume assistance available
- Polish your professional profile
- Employers can post vacancies
- Employers can contact candidates
- Employers can start and stop job postings at any time

### **2.4 Features of the Proposed System**

In the last section, we list the feature of the job portal. The proposed system provides various functions be listed below:

- Search for a job
- Apply for a job

- Upload CV
- Download CV
- Post Job Advertisement
- Update Job Advertisement
- Delete Job Advertisement
- Approve and Update Employer Profile
- Approve and Update Job Advertisement

## **2.5 User Characteristics**

The users who interact with the system are listed below:

### **2.5.1 Admin**

The Administrator is the user who can manage content (add and update) and approve jobs and profiles.

### **2.5.2 Employer**

An Employer is a user who can post job advertisements. He can also update or delete job advertisements, select the candidates for the specific job, search CVs sent by job seekers, and view and download CVs.

### **2.5.3 Job Seeker**

A Job Seeker is a user who can apply for a job according to their qualification, skills, and experience.

## **2.6 Summary**

This chapter covered the study of related systems. There is a description of the Rozee, Indeed, and the Monster. It also describes the feature of the Smart job portal. In the last section, we described the characters, who interact with the system admin, employer, and job seeker. In the next chapter, we describe the tools and technologies used to build the proposed system.

# Chapter 3

## TOOLS & TECHNOLOGIES

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The tools and technologies used for the implementation of the proposed system are discussed in this chapter.

### 3.1 Development Tools

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The tools used to build the Smart job portal are visual studio 2019 and SQL Server Management Studio SSMS. There is a brief description for both of the tools that are listed below:

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#### 3.1.1 Visual Studio 2019

Microsoft Visual Studio 2019 is an Integrated Development Environment used to create software, including mobile apps, websites, online applications, and computer programs. In the Smart job portal, visual studio 2019 used for development because of best features includes code editor with Intelli-Sense, Debugging and testing, Collaborative Development, Cross-platform development, Extensions, and Customizations. Visual Studio 2019 is a powerful IDE that helps developers to create high-quality applications with ease and efficiency.

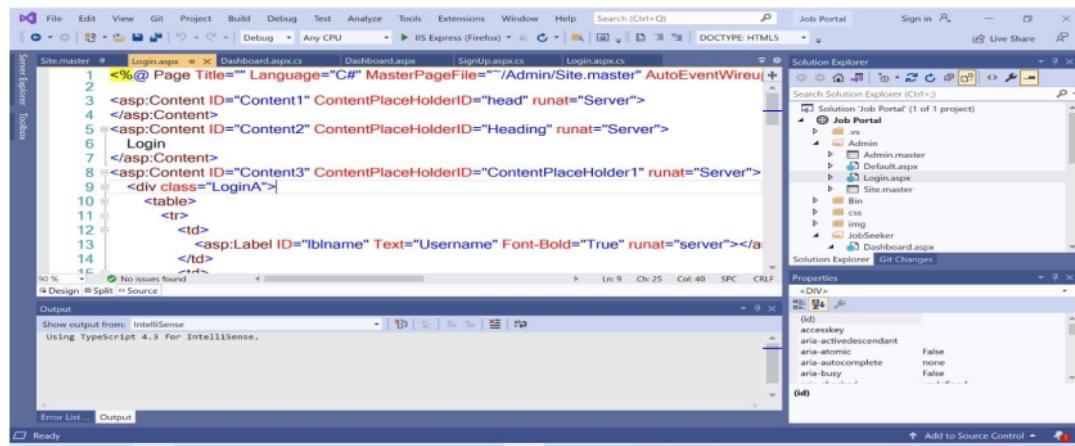


Figure 3.1 Microsoft Visual Studio 2019

### 3.1.2 Microsoft SQL Server 2016

Microsoft SQL Server 2016 was developed by Microsoft Corporation. It has several features, which improve its performance and efficiency. Some key features are query store, in-memory OLTP, always encrypted, stretched database, JSON Support, and many more.

SQL infrastructure manages in an integrated environment called SQL Server Management Studio (SSMS). In the smart job portal, the database is stored in a SQL server management studio and all the queries can be tested there. The database diagram can also make in the SQL Server Management studio. The components of SQL Server such that Azure SQL Database, Azure SQL Managed Instance, SQL Server on Azure VM, and Azure Synapse Analytics may be accessed, configured, managed, administered, and developed using SSMS.

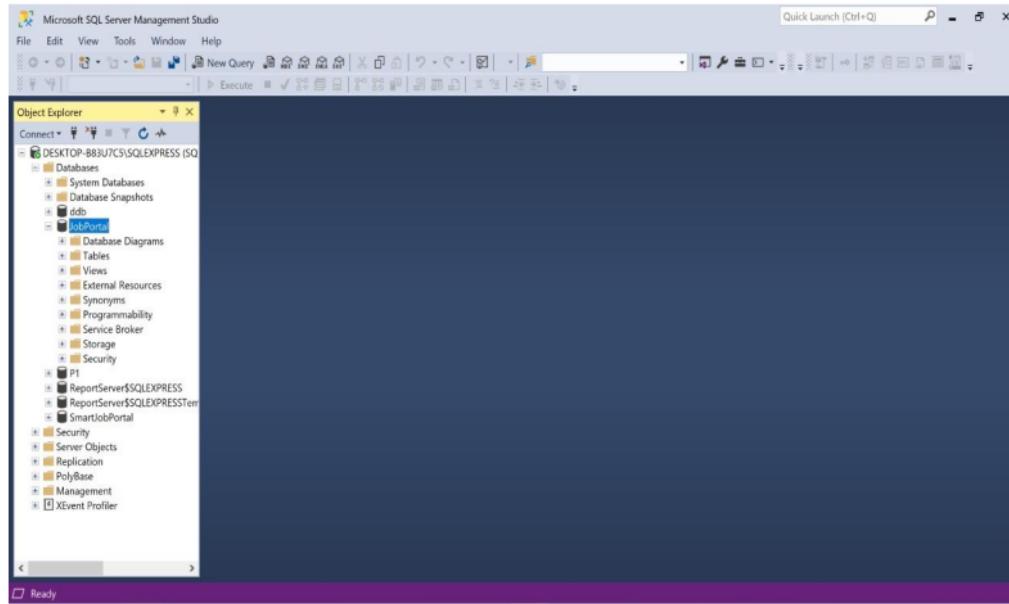


Figure 3.2 Microsoft SQL Server Management Studio 2016

## 3.2 Technologies

The technology used to implement the proposed system is ASP .NET (HTML, CSS, JS, and C#).

### 3.2.1 13 ASP .Net

A web development platform called ASP.NET offers a programming model, a thorough software architecture, and several services needed to create reliable web applications for PCs and mobile devices. ASP.NET is a free online framework for creating efficient websites and web apps using HTML, CSS, and JavaScript. An alternative to ASP.NET is 40 ASP.NET Core.

## 3.3 Summary:

The tools and technologies used to build the Smart job portal are described in this chapter. The technology is ASP .net (HTML, CSS, JS, and C#) for implementing the proposed system. The tools used to build the Smart job portal are Visual Studio 2019 and SQL Server Management Studio (SSMS).19 In the next chapter; we discussed the functional and non-functional requirements of the Smart job portal. Moreover, Use cases, use case diagrams, and sequence diagrams are also included in the next chapter.

# Chapter 4

## SYSTEM ANALYSIS

17 System Analysis describes the functional and non-functional requirements of the proposed system. The use case diagrams and sequence diagrams are in this chapter.

### 12 4.1 Functional Requirements

The functional requirements of the proposed system are in this section.

#### 4.1.1 Admin Module

##### 4.1.1.1 Login

The system enables the user to log in.

##### 4.1.1.2 Manage Cities

The system enables the user to add and update cities.

##### 4.1.1.3 Manage Countries

The system enables the user to add and update countries.

##### 4.1.1.4 Manage Skills

The system enables the user to add and update skills.

##### 4.1.1.5 Manage Industries

The system enables the user to add and update industries.

##### 4.1.1.6 Approve Member Profile

The system enables the user to approve the Member profiles. Member profiles can be either Employer Profile or Employee Profile.

##### 4.1.1.7 Approve Job Advertisements

30 The system enables the user to approve the Job Advertisements.

## **7.1.2 Employer & Job Seeker Module**

### **4.1.2.1 Registration**

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The system enables the user to register.

### **4.1.2.2 Login**

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The system enables the user to log in.

### **4.1.2.3 Post a Job Advertisement**

The system enables the user to post a job Advertisement.

### **4.1.2.4 View CVs**

The system enables the user to view a CV.

### **4.1.2.5 Download CVs**

The system enables the user to download CVs.

### **4.1.2.6 Search for Job**

The system enables users to search for jobs by city, country, skills, and industry. According to the user's interest, the job searched.

### **4.1.2.7 Apply for Job**

The system enables the user to apply for the job.

### **4.1.2.8 Upload CV**

The system enables the user to upload CV.

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## **4.2 Non-Functional Requirements**

### **7.2.1 Performance**

The system performs its requested tasks in an acceptable time.

### **7.2.2 Reusability**

The source code of the proposed system is reusable and used in other applications with some modifications.

### **7.2.3 Maintainability**

The system is maintainable, and the code can be changed and modified according to valid requirements.

### **7.2.4 Usability**

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The Web-based system provides a graphical user interface for its users. It is a user-friendly interface.

### **7.2.5 Availability**

The system can be available 20 to 24/7 since it is a website, and users can access the website from anywhere.

### **4.2.6 Security**

All users are authenticated and authorized. If the user gives a valid email and password, then log in to the website and access the software. In another case, he gets an error message.

### **4.2.7 Reliability**

The system consistently performs the specified function without failure. The Smart job portal is efficient and reliable.

### **4.2.8 Portability**

The system can be able to run under different computing environments. It is easy to shift it from one platform to another.

## **4.3 Use Cases**

The use cases for the proposed system are written in this section, which are discussed below. The admin, employer and job seeker

### **4.3.1 Admin Module**

#### **4.3.1.1 Use case 1 - Login**

The user would be able to login if the username and password are correct.

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**Table 4. 1 Admin Login Use Case**

<b>ID</b>	UC-01
<b>Title</b>	Login
<b>Description</b>	The user enters credentials to login to the system.
<b>Actor</b>	Admin
<b>Preconditions</b>	N/A
<b>Post Conditions</b>	Admin will be redirected to dashboard.
<b>Basic steps</b>	<p style="margin-left: 20px;">1. The user would enter username.</p> <p style="margin-left: 20px;">2. The user would enter password.</p> <p style="margin-left: 20px;">3. The user would click on the login button.</p>
<b>Exception</b>	If user enter invalid username or password than an error will occur and he will not log in.

#### 4.3.1.2 Use case 2 – Manage Countries

The user would be able to manage countries.

**Table 4.2 Admin Manage Countries Use Case**

<b>ID</b>	UC-02
<b>Title</b>	Manage Countries
<b>Description</b>	The user manages countries in which he/she can either add country or update country.
<b>Actor</b>	Admin
<b>Preconditions</b>	Sign in
<b>Post Conditions</b>	Admin will be added or updated countries successfully.
<b>Basic steps</b>	<p style="margin-left: 20px;">1. The user would click on manage countries (From the Menu). The user would be redirected to manage countries page.</p> <p style="margin-left: 20px;">2. The user would click on add (update) button.</p>

	<p style="text-align: center;">2</p> <ul style="list-style-type: none"> <li>3. The user would enter the country name.</li> <li>4. The user would enter the dialing code.</li> <li>5. The user would enter the domain code.</li> <li>6. The user would upload the flag image.</li> <li>7. The user would click on save button.</li> <li>8. The system would show the message of “country added or updated” to the user.</li> </ul>
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#### 4.3.1.3 Use case 3 – Manage Cities

The user would be able to manage cities.

**Table 4. 3 Admin Manage Cities Use Case**

<b>ID</b>	UC-03
<b>Title</b>	Manage Cities
<b>Description</b>	The user manages cities in which he/she can either add city or update city.
<b>Actor</b>	Admin
<b>Preconditions</b>	Sign in
<b>Post Conditions</b>	Admin will be added or updated cities successfully.
<b>Basic steps</b>	<ul style="list-style-type: none"> <li>1. The user would click on manage cities (From the Menu). 18 The user would be redirected to manage cities page.</li> <li>2. The user would click on add (update) button. 2 3. The user would enter the city name.</li> <li>4. The user would enter the zip code.</li> <li>5. The user would click on save button.</li> <li>6. The system would show the message of “city added or updated” to the user.</li> </ul>

#### **4.3.1.4 Use case 4 – Manage skills**

The user would be able to manage skills.

**Table 4. 4 Admin Manage Skills Use Case**

<b>ID</b>	UC-04
<b>Title</b>	Manage Skills
<b>Description</b>	The user manages skills in which he/she can either add skill or update skill.
<b>Actor</b>	Admin
<b>Preconditions</b>	Sign in
<b>Post Conditions</b>	Admin will be added or updated skills successfully.
<b>Basic steps</b>	<ol style="list-style-type: none"><li>1. The user would click on manage skills (From the Menu). The user would be redirected to the manage skills page. <span style="background-color: #e0e0ff; border: 1px solid #8080ff; padding: 2px;">35</span></li><li>2. The user would click on add (update) button.</li><li>3. The user would enter the skill name.</li><li>4. The user would click on the save button.</li><li>5. The system would show the message of “skill added or updated” to the user.</li></ol>

#### **4.3.1.5 Use case 5 – Manage industries**

The user would be able to manage industries.

**Table 4. 5 Admin Manage Industries Use Case**

<b>ID</b>	UC-05
<b>Title</b>	Manage Industries
<b>Description</b>	The user manages industries in which he/she can either add industry or update industry.
<b>Actor</b>	Admin

<b>Preconditions</b>	Sign in
<b>Post Conditions</b>	Admin will be added or updated industries successfully.
<b>Basic steps</b>	<ol style="list-style-type: none"> <li>1. The user would click on manage industries (From the Menu). The user would be redirected to manage industries page.</li> <li>2. The user would click on add (update) button.</li> <li>3. The user would enter the industry name.</li> <li>4. The user would click on save button.</li> <li>5. The system would show the message of “industry added or updated” to the user.</li> </ol>

#### 4.3.1.6 Use case 6 – Approve Member Profile

The user would be able to approve the member profile.

**Table 4. 6 Admin Approve Member Profile Use Case**

<b>ID</b>	UC-06
<b>Title</b>	Approve Member Profile
<b>Description</b>	The user approves the member profile. The member profile would be either the employer profile or the job seeker profile.
<b>Actor</b>	Admin
<b>Preconditions</b>	Signup
<b>Post Conditions</b>	The Member profile will be approved successfully.
<b>Basic steps</b>	<ol style="list-style-type: none"> <li>1. The user would click on approve member profile (From the Menu). The user would be redirected to approve member profile page.</li> <li>2. The user would click on the view button. All the information of members such as name, email, password and phone number would be visible to user.</li> </ol>

	<p>3. The user would click on approved button.</p> <p>4. The system would show the message of “member profile approved” to the user.</p>
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#### 4.3.1.7 Use case 7 – Approve Job Advertisement

The user would be able to approve the job advertisement.

**Table 4. 7 Admin Approve Job Advertisement Use Case**

<b>ID</b>	UC-07
<b>Title</b>	Approved Job Advertisement
<b>Description</b>	The user approves the job advertisement, which are posted by employers.
<b>Actor</b>	Admin/ Employer
<b>Preconditions</b>	The employer posted a job advertisement.
<b>Post Conditions</b>	Admin will be approved the job advertisement successfully.
<b>Basic steps</b>	<p>1. The user would click on approve job advertisement (From the Menu). The user would be redirected to approve job advertisement page.</p> <p>2. The user would click on the view button. All information such as Title, Description, skills, location, career level, positions, qualification, experience, and salary of posted job would be visible to the user.</p> <p>3. The user would click on approved button.</p> <p>4. The system would show the message of “job advertisement approved” to the user.</p>

### **7.3.2 Employer & Job Seeker Module**

#### **4.3.2.1 Use case 1 – Job Seeker Sign Up**

The user would be able to register his/her account in the smart job portal.

**Table 4. 8 Job Seeker Signup Use Case**

<b>ID</b>	UC-08
<b>Title</b>	Sign Up
<b>Description</b>	The user creates his/her account in the smart job portal.
<b>Actor</b>	Job Seeker
<b>Preconditions</b>	The user is at the Sign-Up page.
<b>Post Conditions</b>	<p>2 The user will be redirected to the login page. 12</p> <ol style="list-style-type: none"><li>1. Click on the sign-up button.</li><li>2. The user would enter the first name.</li><li>3. The user would enter the last name.</li><li>4. The user would enter the email.</li><li>5. The user would enter the password.</li><li>6. The user would enter the phone number.</li><li>7. The user would click on Create account button.</li><li>8. The system would show the message “account created successfully” to the user.</li><li>9. The user would get the email for verification of the account.</li></ol>
<b>Basic steps</b>	

#### **4.3.2.2 Use case 2 – Employer Sign Up**

The user would be able to register his/her account in the smart job portal.

**Table 4. 9 Employer Signup Use Case**

<b>ID</b>	UC-09
<b>Title</b>	Sign Up
<b>Description</b>	The user creates his/her account in the smart job portal.
<b>Actor</b>	Employer
<b>Preconditions</b>	The user is at the Sign Up page.
<b>Post Conditions</b>	User will go to login page.
<b>Basic steps</b>	<ol style="list-style-type: none"> <li>1. Click on login button. <span style="background-color: #e0e0ff; border: 1px solid #800080; padding: 2px;">14</span></li> <li>2. The user would enter the first name.</li> <li>3. The user would enter the last name.</li> <li>4. The user would enter the email.</li> <li>5. The user would enter the company name.</li> <li>6. The user would enter the password.</li> <li>7. The user would enter the mobile number.</li> <li>8. The user would enter the city name.</li> <li>9. The user would enter the CNIC.</li> <li>10. The user would click on create account button.</li> <li>11. The system would show the message of “account created successfully” to the user.</li> <li>12. The user would get the email for verification of the account.</li> </ol>

#### 4.3.2.3 Use case 3 – Login

The user would be able to login if the email and password are correct.

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**Table 4. 10 Employer & Job Seeker Login Use Case**

<b>ID</b>	UC-10
<b>Title</b>	Login
<b>Description</b>	The user enters credentials to login to the system.

<b>Actor</b>	Employer / Job Seeker
<b>Preconditions</b>	N/A
<b>Post Conditions</b>	User will be redirected to dashboard.
<b>Basic steps</b> 2	<ol style="list-style-type: none"> <li>1. The user would enter email.</li> <li>2. The user would enter password.</li> <li>3. The user would click on the login button.</li> </ol>
<b>Exception</b>	If user enter invalid email or password than an error will occur and he will not log in.

#### 4.3.2.4 Use case 4 – Forgot Password

The user would be able to get his/her password on email.

**Table 4. 11 Employer & Job Seeker Forgot Password Use Case**

<b>ID</b>	UC-11
<b>Title</b>	Forgot Password
<b>Description</b>	The user forgets the password and the password send to the registered email.
<b>Actor</b>	Employer, Job Seeker 51
<b>Preconditions</b>	The user is on the login page.
<b>Post Conditions</b>	<p>The user will gets a password on his/her registered email.</p> <ol style="list-style-type: none"> <li>1. The user would enter the email.</li> <li>2. The user would enter the invalid password.</li> <li>3. The user would get the error of invalid password.</li> <li>4. The user would click on forgot password button.</li> <li>5. The user would redirected to the page where he/she would enters the email.</li> <li>6. The system would show message of “the password sends to email” to the user.</li> </ol>
<b>Basic steps</b> 2	

#### **4.3.2.5 Use case 5 – Post a Job**

The user would be able to post a job.

**Table 4. 12 Employer Post a job Use Case**

<b>ID</b>	UC-12
<b>Title</b>	Post a Job
<b>Description</b>	The user posted a job advertisement.
<b>Actor</b>	Employer
<b>Preconditions</b>	Signup
<b>Post Conditions</b>	The employer will be posted job advertisement successfully.
<b>Basic steps</b>	<ol style="list-style-type: none"><li>1. The user would click on post a job (From the Menu). He would redirected to post a job page.</li><li>2. The user would enter the job Title.</li><li>3. The user would enter the job Description.</li><li>4. The user would enter Skills.</li><li>5. The user would enter the required career level for this job and number of positions available.</li><li>6. The user would enter the salary range.</li><li>7. The user would enter the job location.</li><li>8. The user would click on post a job button.</li><li>9. The job is posted successfully.</li></ol>

#### **4.3.2.6 Use case 6 – Manage Job Advertisement**

The user would be able to manage job advertisements.

**Table 4. 13 Employer Manage Jobs Advertisements Use Case**

<b>ID</b>	UC-13
<b>Title</b>	Manage job advertisements

<b>Description</b>	The user manages job advertisement in which he/she can either delete or update job advertisements.
<b>Actor</b>	Employer
<b>Preconditions</b>	Sign in
<b>Post Conditions</b>	The employer will be managed the job advertisement successfully.
<b>Basic steps</b>	<ol style="list-style-type: none"> <li>1. The user would click on manage jobs (From the Menu). The user would be redirected to manage jobs page.</li> <li>2. The user would click on delete (update) button.</li> <li>3. The system would show the message of “job advertisement deleted” to the user.</li> </ol>

#### 4.3.2.7 Use case 7 – Search Job

The user would be able to search the job according to his qualification.

**Table 4. 14 Job Seeker Search Job Use Case**

<b>ID</b>	UC-14
<b>Title</b>	Search Jobs
<b>Description</b>	The user searches the job according to his/her qualification.
<b>Actor</b>	Job Seeker
<b>Preconditions</b>	The job seeker is at the home page of job portal.
<b>Post Conditions</b>	The job seeker will be searched the job successfully.
<b>Basic steps</b>	<ol style="list-style-type: none"> <li>1. The user would enter the job title.</li> <li>2. The user would enter the skill, city or company.</li> <li>3. The user would click on search button.</li> <li>4. The system would show the message of “job searched successfully” to the user.</li> </ol>

#### **4.3.2.8 Use case 8 – Apply for Job**

The user would be able to apply for job related to his interest and qualification.

**Table 4. 15 Job Seeker Apply for Job Use Case**

<b>ID</b>	UC-15
<b>Title</b>	Apply for job
<b>Description</b>	The user apply for job according to his interest and qualification.
<b>Actor</b>	Job Seeker
<b>Preconditions</b>	Signup
<b>Post Conditions</b>	The job seeker will be applied for job successfully.
<b>Basic steps</b>	<ol style="list-style-type: none"> <li>1. The user would enter the job title.</li> <li>2. The user would select the city.</li> <li>3. The user would click on search button.</li> <li>4. The system would show the vacancies to the user.</li> <li>5. The user would click on apply button.</li> <li>6. The user would enter the desired salary</li> <li>7. The user would enter the current salary.</li> <li>8. The user would upload the CV.</li> <li>9. The user would click on submit button.</li> <li>10. The system would show the message of “application submitted” to the user.</li> </ol>

#### **4.3.2.9 Use case 7 – View and Download CV’s**

The user would be able to view and download CV’s send by job seeker’s.

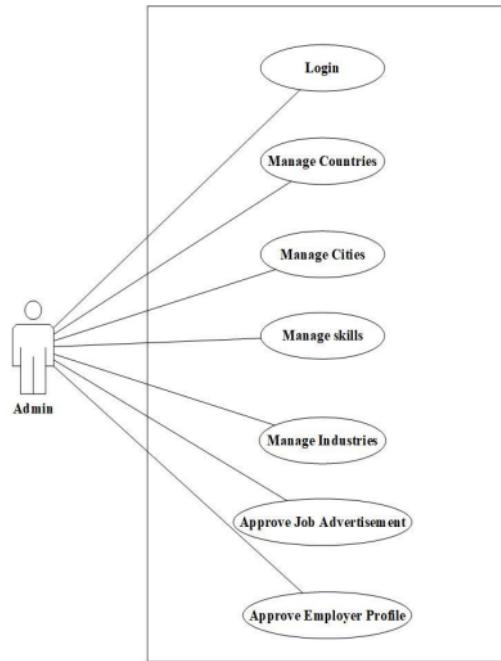
**Table 4. 16 Employer View and Download CV’s Use Case**

<b>ID</b>	UC-16
<b>Title</b>	View and Download CV’s

<b>Description</b>	The user views or downloads the CV's send by job seeker's.
<b>Actor</b>	Employer
<b>Preconditions</b>	The user is on the dashboard.
<b>Post Conditions</b>	The employer will be viewed or downloaded CV successfully.
<b>Basic steps</b>	<ol style="list-style-type: none"> <li>1. The user would click on manage CV's (From the Menu). The user would be redirected to manage CV page.</li> <li>2. The system would show different CV's to the employer send by Job Seeker.</li> <li>3. The user click on view button. <sup>8</sup></li> <li>4. The system would redirected the user to the new window where he can view the CV. <sup>39</sup></li> <li>5. The user would click on the download button.</li> <li>6. The system would show the message of "CV downloaded" to the user.</li> </ol>

## 4.4 Use Case Diagrams

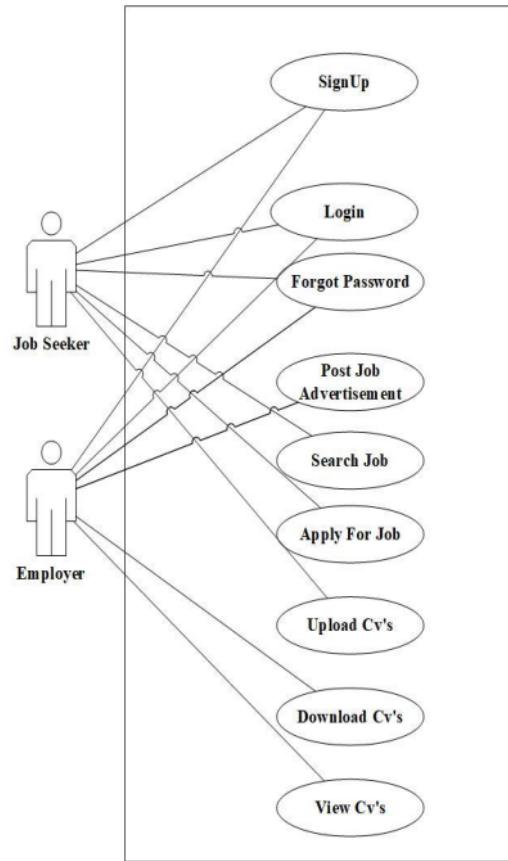
### 7.4.1 Admin



**Figure 4. 1 Use Case Diagram for Admin**

The admin would do the content management and would perform the following functions manage countries, manage cities, manage skills, manage industries, and approve Job Advertisements and Approve Member profiles.

#### 7.4.2 Employer & Job Seeker



**Figure 4. 2 Use Case Diagram for Employer & Job Seeker**

The employer would register, log in, reset the password, post job advertisements, and view and download cvs. The job seeker would register, log in, reset their password, search for jobs by country, city, industry, and skill, apply for jobs, apply for the job, and upload their CV.

#### 4.5 Sequence Diagrams

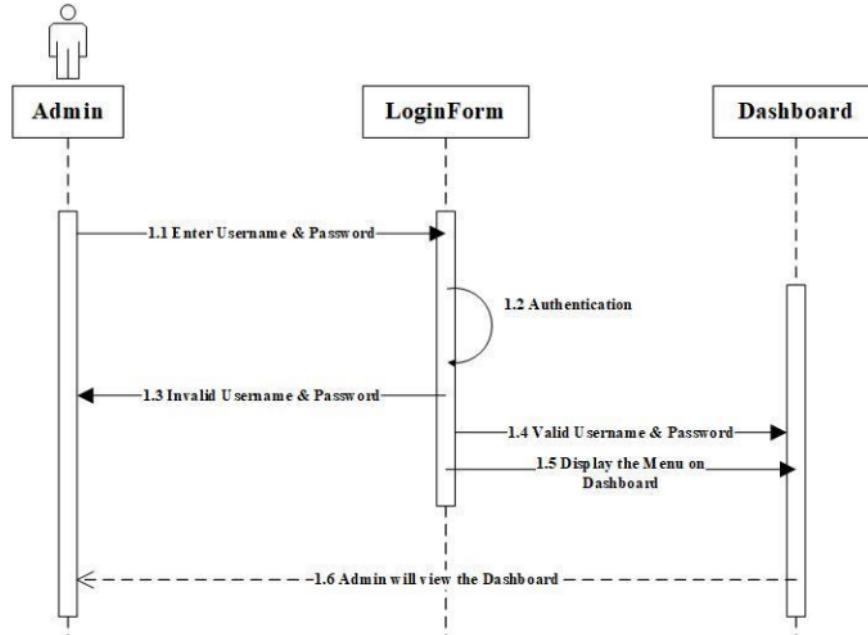
The sequence diagrams describes the flow of functions. How the messages passes and how the functionality is performed can be describe diagrammatically.

### 7.5.1 Admin

36

#### 4.5.1.1 Sequence Diagram for Admin Login

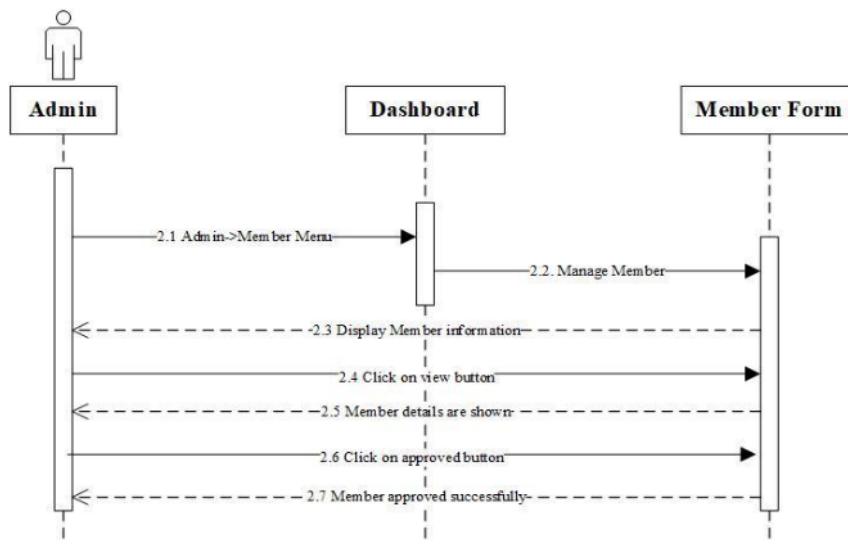
Figure 4. 3 displays the sequence of steps for the login of admin.



9  
Figure 4. 3 Sequence Diagram for Admin Login

#### 4.5.1.2 Sequence Diagram for Admin Approve Member Profile

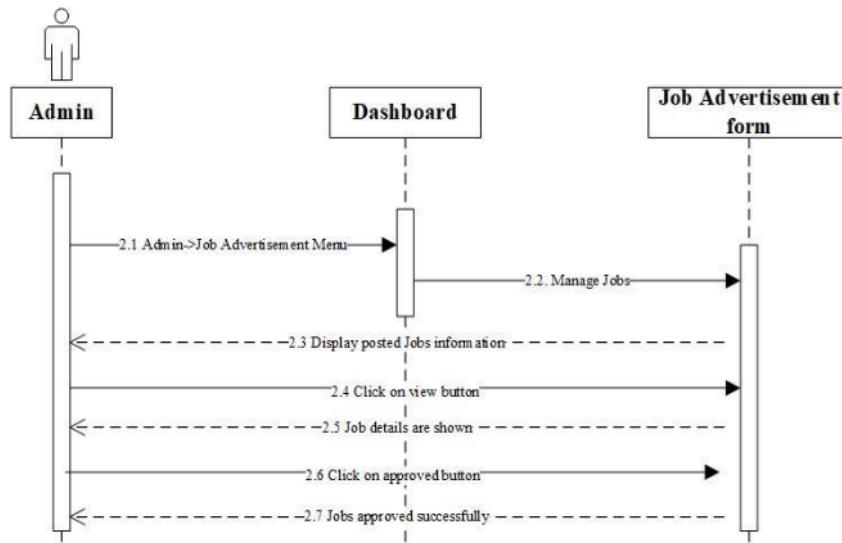
Figure 4. 4 displays the sequence of steps for approve member profile of the admin.



**Figure 4. 4 Sequence Diagram for Admin Approve Member Profile**

#### 4.5.1.3 Sequence Diagram for Admin Approve Job Advertisement

Figure 4. 5 displays the sequence of steps for approve job advertisement of the admin.

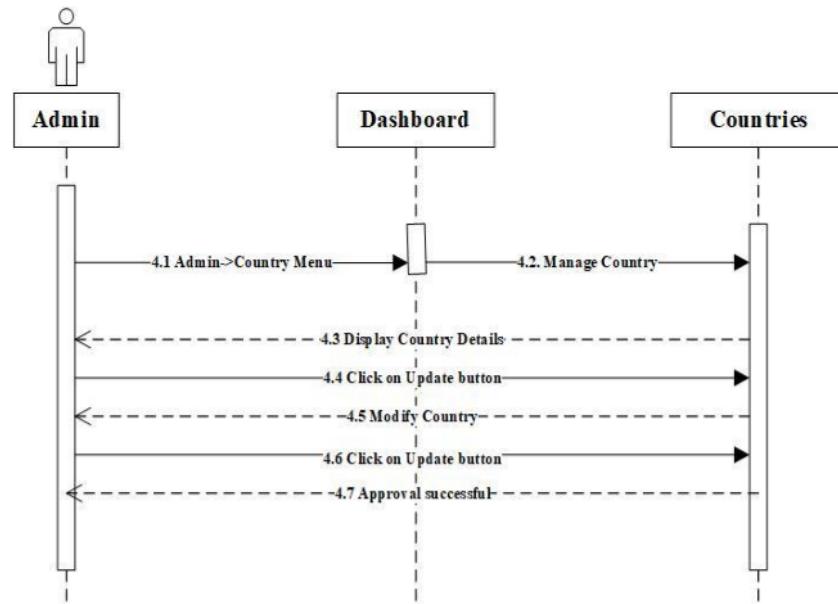


9

**Figure 4. 5 Sequence Diagram for Admin Approve Job Advertisement**

#### 4.5.1.4 Sequence Diagram for Admin Manage Countries

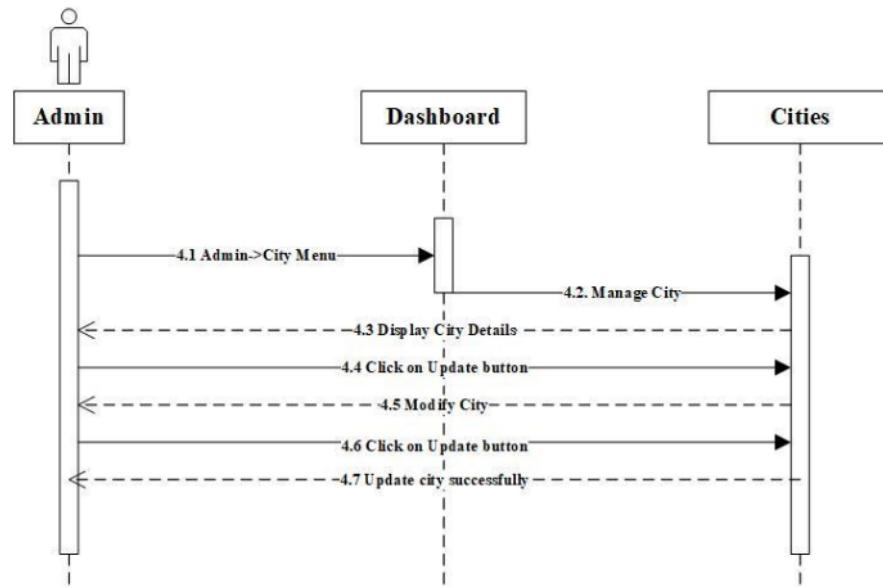
Figure 4.6 displays the sequence of steps for manage countries of admin.



9  
**Figure 4.6 Sequence Diagram for Admin Manage Countries**

#### **4.5.1.5 Sequence Diagram for Admin Manage Cities**

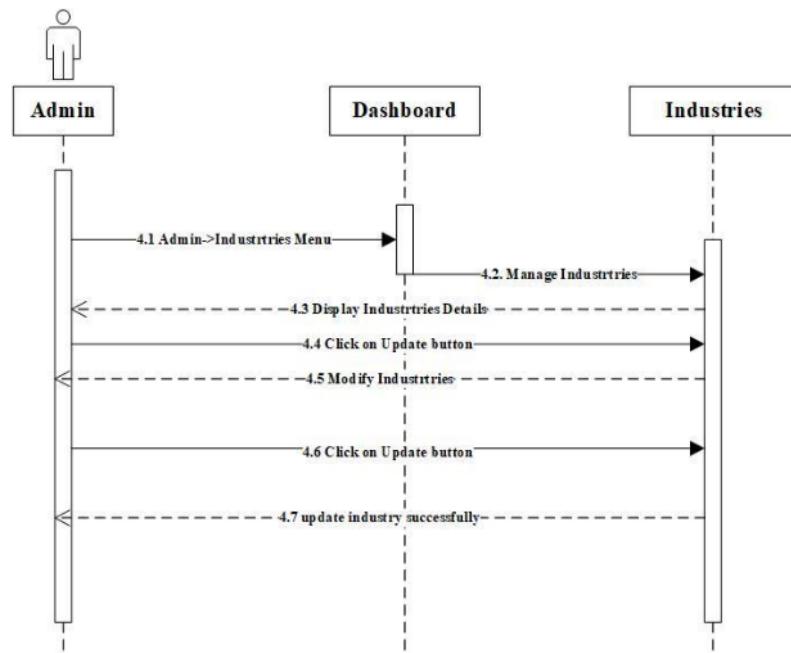
Figure 4. 7 displays the sequence of steps for manage cities of admin.



32  
**Figure 4. 7 Sequence Diagram for Admin Manage Cities**

#### **4.5.1.6 Sequence Diagram for Admin Manage Industries**

Figure 4. 8 displays the sequence of steps for manage industries of admin.



27  
Figure 4.8 Sequence Diagram for Admin Manage Industries

#### 4.5.1.7 Sequence Diagram for Admin Manage Skills

Figure 4.9 displays the sequence of steps for manage skills of admin.

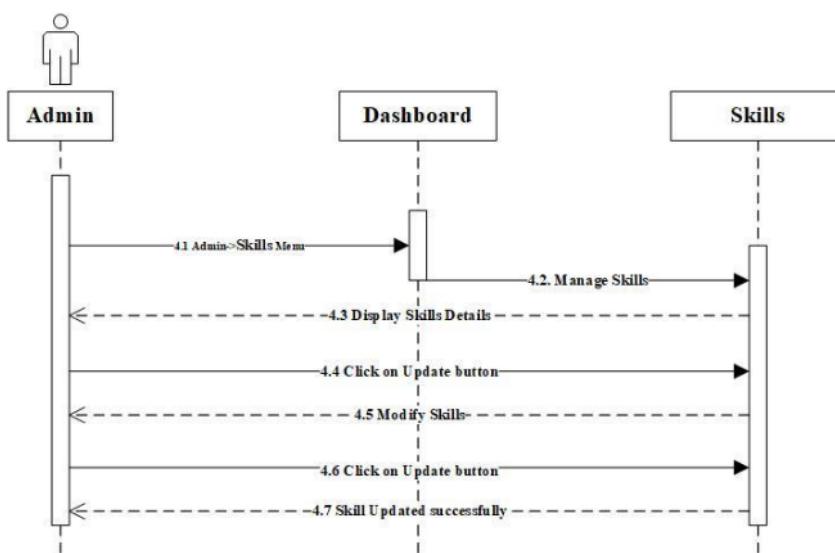


Figure 4.9 Sequence Diagram for Admin Manage Skills

## 7.5.2 Employer & Job Seeker

### 4.5.2.1 Sequence Diagram for Employer Sign Up

Figure 4. 10 displays the sequence of steps for signup of employer.

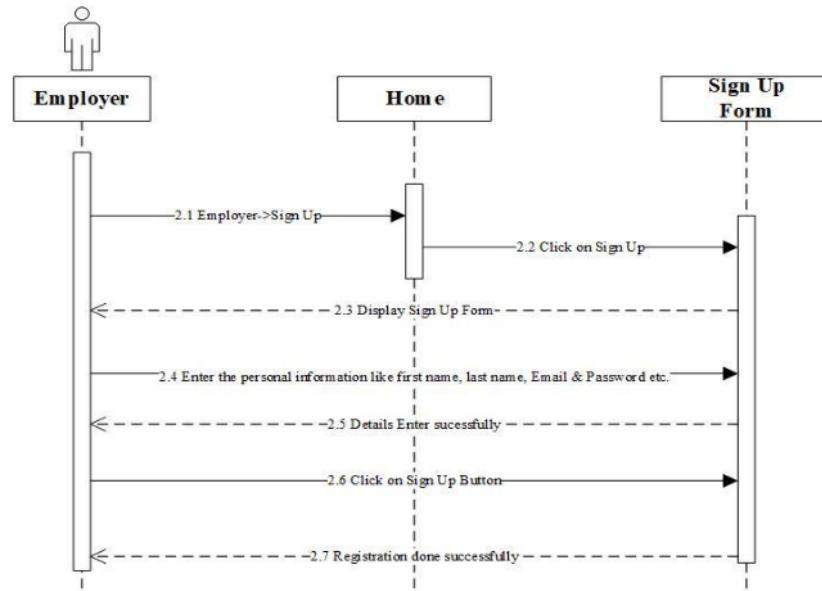
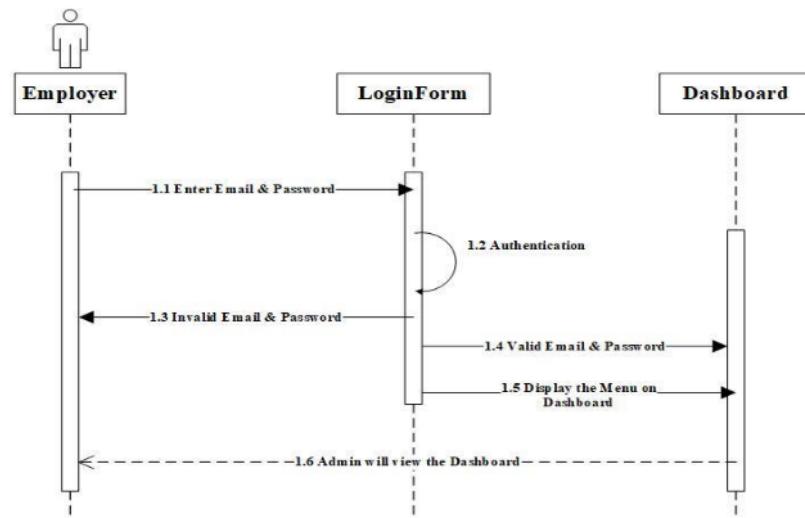


Figure 4. 10 Sequence Diagram for Employer Signup

### 7.5.2.2 Sequence Diagram for Employer Login

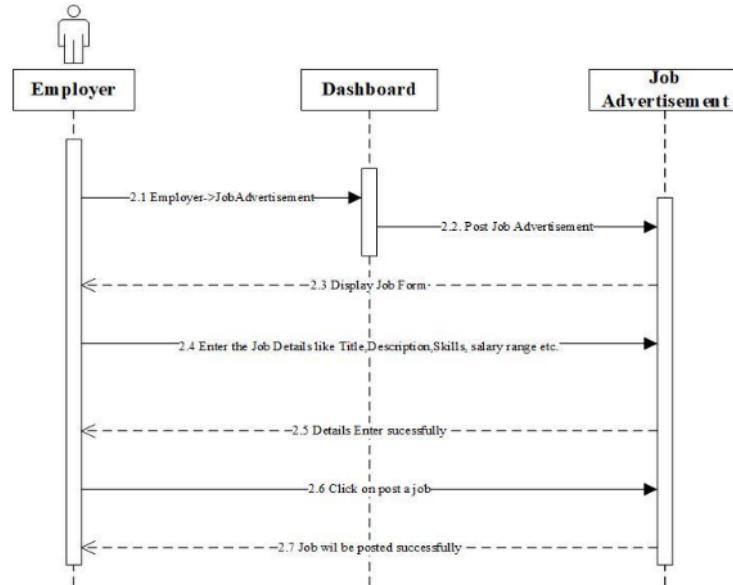
Figure 4. 11 displays the sequence of steps for login of employer.



**Figure 4. 11 Sequence Diagram for Employer Login**

#### 7.5.2.3 Sequence Diagram for Employer Post a Job

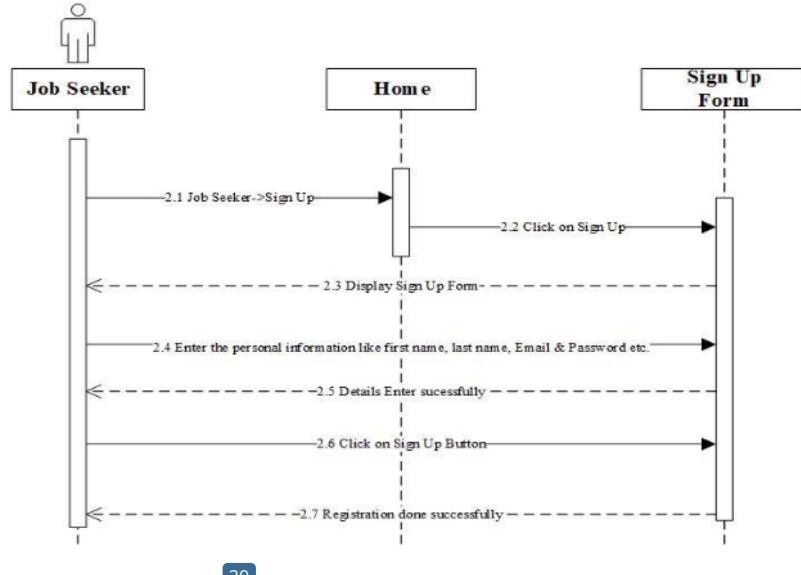
Figure 4. 12 displays the sequence of steps for post a job advertisement of employer.



**Figure 4. 12 Sequence Diagram for Employer Post a Job**

#### 7.5.2.4 Sequence Diagram for Job Seeker Sign Up

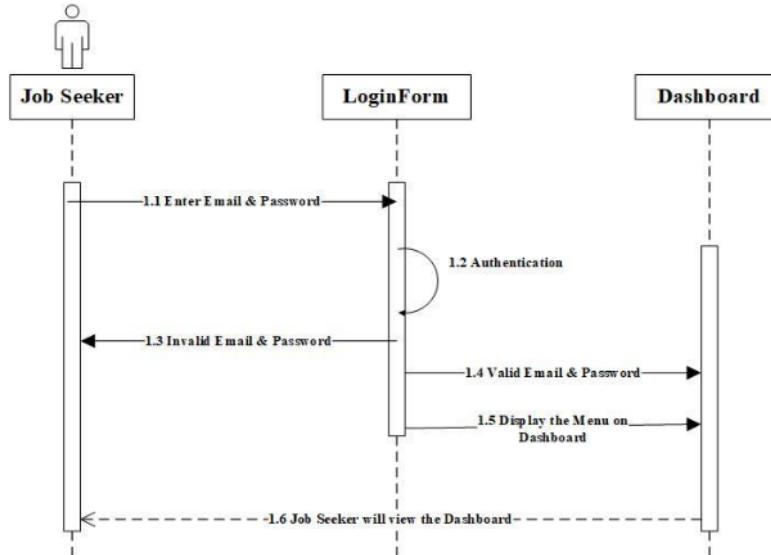
Figure 4. 13 displays the sequence of steps for signup of job seeker.



20  
Figure 4. 13 Sequence Diagram for Job Seeker Signup

#### 4.5.2.2 Sequence Diagram for Job Seeker Login

Figure 4. 14 displays the sequence of steps for login of job seeker.



20  
Figure 4. 14 Sequence Diagram for Job Seeker Login

#### 4.5.2.3 Sequence Diagram for Job Seeker Apply for job

Figure 4. 15 displays the sequence of steps for apply for job of job seeker.

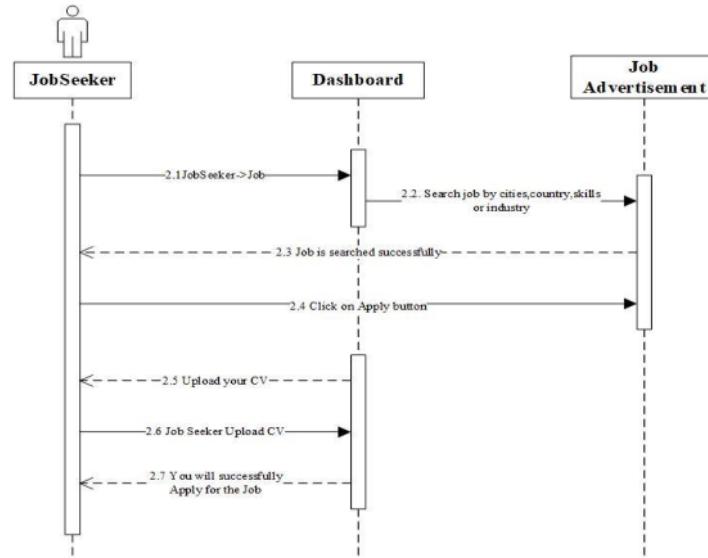


Figure 4. 15 Sequence Diagram for Job Seeker Apply for Job

#### 4.6 Summary

In this chapter, functional and non-functional requirements are covered. Use cases, use case diagrams, and sequence diagrams are discussed. In the next chapter, we discussed system design, table design and user interface design.

## Chapter 5

### SYSTEM DESIGN

#### 5.1 Database Design

Figure 5.1 shows the different tables like Member, City, Country, Companies, Skill, Industry, Employer Profile, Job Seeker Profile, etc. The member table can store the member login details. The Member is either Employer or Job Seeker. Therefore, there are different tables for employer profile & job seeker profile. The Cities table contains

information about the cities. The skills table has information about the skills. The companies table contains information about companies.

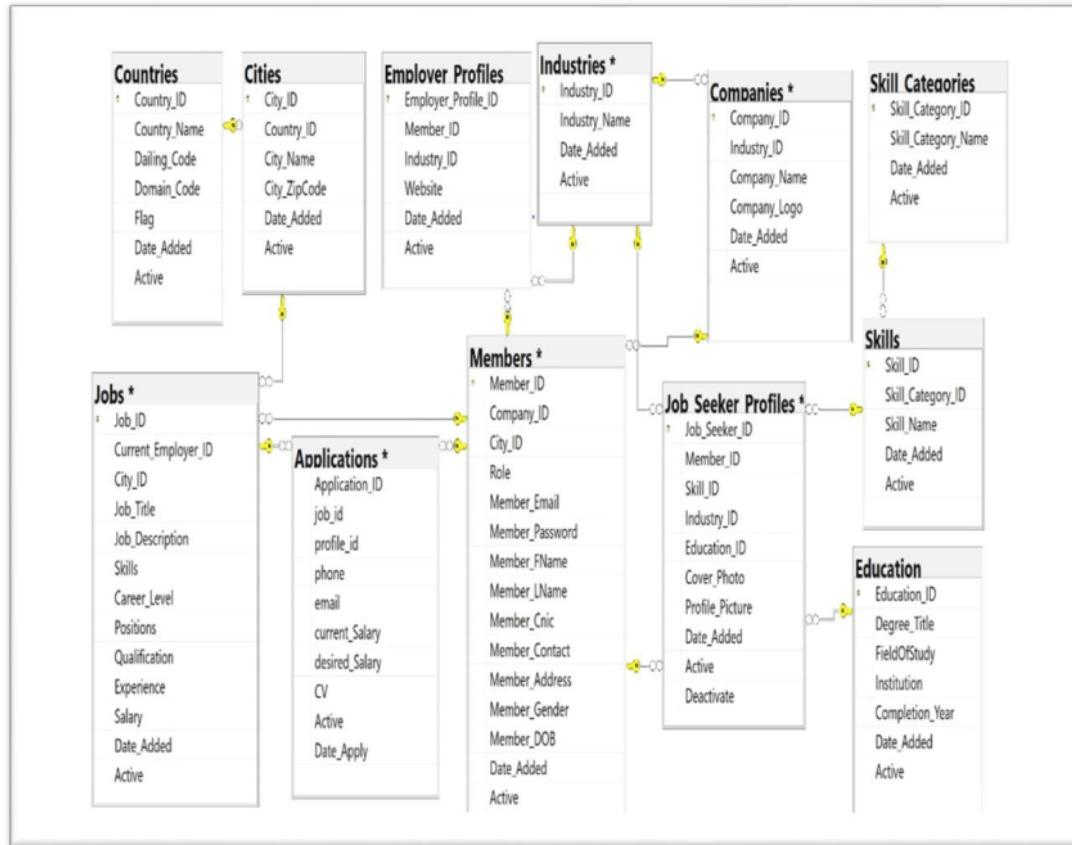


Figure 5. 1 Database diagram for smart job portal

## 5.2 Tables Description

### 5.2.1 Countries

Table 5. 1 Countries Database Design

Countries			
S No.	Name	Data Type	Description
1	Country_ID	Numeric(18,0)	Primary key

2	Country_Name	Varchar(50)	Name of country (Pakistan)
3	Dailing_Code	Numeric(18,0)	Dialing code or mobile code (+92)
4	Domain_Code	Varchar(50)	Domain code or country code (.pk)
5	Flag	Image	The flag of the country
6	Date_Added	Datetime	Default : getdate()
7	Active	Bit	Default : 1

### 5.2.2 Cities

Table 5. 2 Cities Database Design

Cities			
S No.	Name	Data Type	Description
1	City_ID	Numeric(18,0)	Primary key
2	Country_ID	Numeric(18,0)	Foreign key 45
3	City_Name	Varchar(50)	Name of city (Rawalpindi)
4	City_ZipCode	Numeric(18,0)	Zip code of city (45600, 46300)
5	Date_Added	Datetime	Default : getdate()
6	Active	bit	Default : 1

### 5.2.3 Skills

Table 5. 3 Skills Database Design

Skills			
S No.	Name	Data Type	Description
1	Skill_ID	Numeric(18,0)	Primary key

2	SkillCategory_ID	Numeric(18,0)	Foreign key
3	Skill_Name	Varchar(50)	Name of skill (Teamwork)
4	Date_Added	Datetime	Default : getdate()
5	Active	bit	Default : 1

#### 5.2.4 Industries

Table 5. 4 Industries Database Design

Industries			
S No.	Name	Data Type	Description
1	Industry_ID	Numeric(18,0)	Primary key
2	Industry_Name	Varchar(50)	Name of industry (Information Technology)
3	Date_Added	Datetime	Default : getdate()
4	Active	Bit	Default : 1

#### 5.2.5 Companies

Table 5. 5 Companies Database Design

Companies			
S No.	Name	Data Type	Description
1	Company_ID	Numeric(18,0)	Primary key
2	Company_Name	Varchar(50)	Name of company (Stack over flow)
3	Company_Logo	Varbinary(Max)	The logo of the company.
3	Date_Added	Datetime	Default : getdate()
4	Active	bit	Default : 1

### 5.2.6 Members

**Table 5. 6 Members Database Design**

<b>Members</b>			
<b>S No.</b>	<b>Name</b>	<b>Data Type</b>	<b>Description</b>
1	Member_ID	Numeric(18,0)	Primary key
2	City_ID	Numeric(18,0)	Foreign key
3	Role	char(1)	Either the member is the employer or job seeker
3	Member_FName	Varchar(50)	First Name of member (Maha, Nasir, Adnan)
4	Member_LName	Varchar(50)	Last Name of member (Shahid, Khan, Rajpoot)
5	Member_Email	Varchar(50)	Email of member (Maha_Shahid1@outlook.com)
6	Member_Password	Varchar(50)	Password of member for the account (Maha@442351)
7	Member_Cnic	Varchar(50)	Cnic of the member (37405-9607231-6)
8	Member_Contact	Varchar(50)	Contact number of the member (03335293287)
9	Member_Address	Varchar(50)	Address of the member ( house Number 543, Lane No. 3 Tulsa Road Lalazar Rawalpindi)
10	Member_Gender	Varchar(50)	Gender of member (Male or female)
11	Date_Added	Datetime	Default : getdate()
12	Active	Bit	Default : 1

### 5.2.7 Applications

**Table 5. 7 Applications Database Design**

<b>Applications</b>			
<b>S No.</b>	<b>Name</b>	<b>Data Type</b>	<b>Description</b>
1	Application_ID	Numeric(18,0)	Primary key
2	Job_ID	Numeric(18,0)	Foreign key
3	Member_ID	Numeric(18,0)	Foreign key
4	Current_Salary	Numeric(18,0)	The current salary of the member.
5	Desired_Salary	Numeric(18,0)	The expected salary of the member.
6	CV	Varbinary(MAX)	CV or resume of the member.
7	Date_Added	Datetime	Default : getdate()
8	Active	Bit	Default : 1

### 5.2.8 Jobs

**Table 5. 8 Jobs Database Design**

<b>Jobs</b>			
<b>S No.</b>	<b>Name</b>	<b>Data Type</b>	<b>Description</b>
1	Job_ID	Numeric(18,0)	Primary key
2	CurrentEmployer_ID	Numeric(18,0)	Foreign key
3	City_ID	Numeric(18,0)	Foreign key
4	Job_Title	Varchar(50)	The title of the job.
5	Job_Description	Varchar(MAX)	The description of the job.
6	Skills	Varchar(50)	Skills required for the job.

7	Career_level	Varchar(50)	Career level of job (Student, Intern Experience)
8	Positions	Numeric(18,0)	Number of posts vacant for the job.
9	Qualification	Varchar(50)	Qualification for job. (Matric, Intermediate, BS, MS, PHD)
10	Experience	Varchar(MAX)	Experience required for job (1year – 3year)
11	Salary	Varchar(MAX)	Salary range of the job.(5000 - 10000)
12	Date_Added	Datetime	Default : getdate()
13	Active	bit	Default : 1

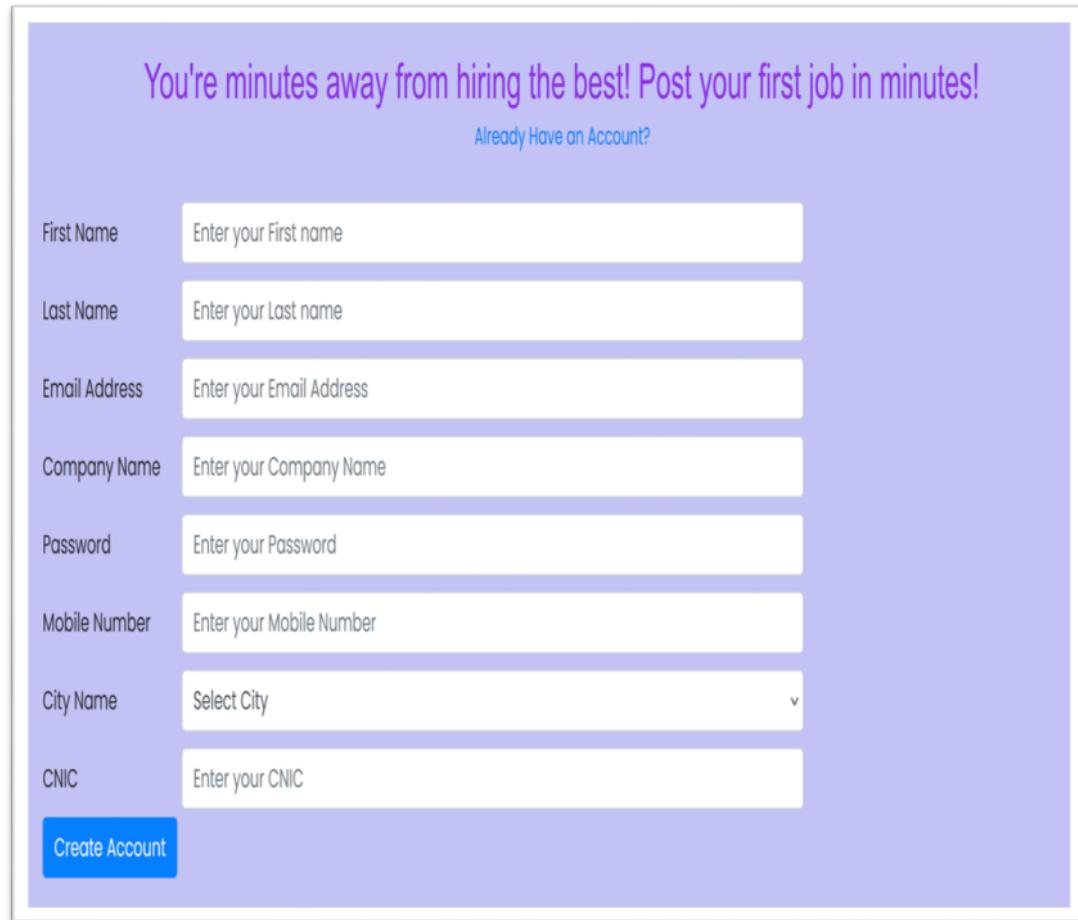
### 5.3 User Interface Designs

The different user interfaces for the Smart job portal are in this sub-section. The admin, employer, and job seeker interact with the system by login. The user has to signup first with a valid email, then login with the authorized email and password.

### 5.3.1 User Interface 1 – Sign Up

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Figure 5. 2 shows the sign screen for user.



The image shows a sign-up form with a light purple background. At the top, a motivational message reads "You're minutes away from hiring the best! Post your first job in minutes!". Below it is a link "Already Have an Account?". The form consists of eight input fields, each with a label and a placeholder text. A blue "Create Account" button is at the bottom.

First Name	Enter your First name
Last Name	Enter your Last name
Email Address	Enter your Email Address
Company Name	Enter your Company Name
Password	Enter your Password
Mobile Number	Enter your Mobile Number
City Name	Select City
CNIC	Enter your CNIC

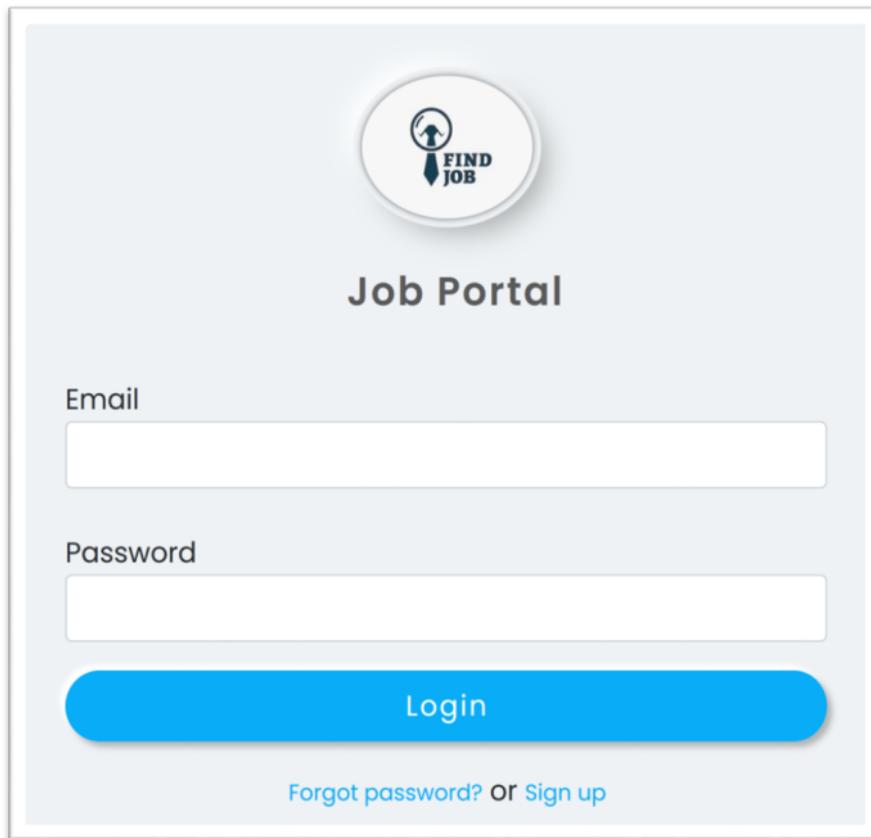
**Create Account**

Figure 5. 2 Sign Up

### 5.3.2 User Interface 2 - Login

21

Figure 5. 3 shows the login screen for the user.

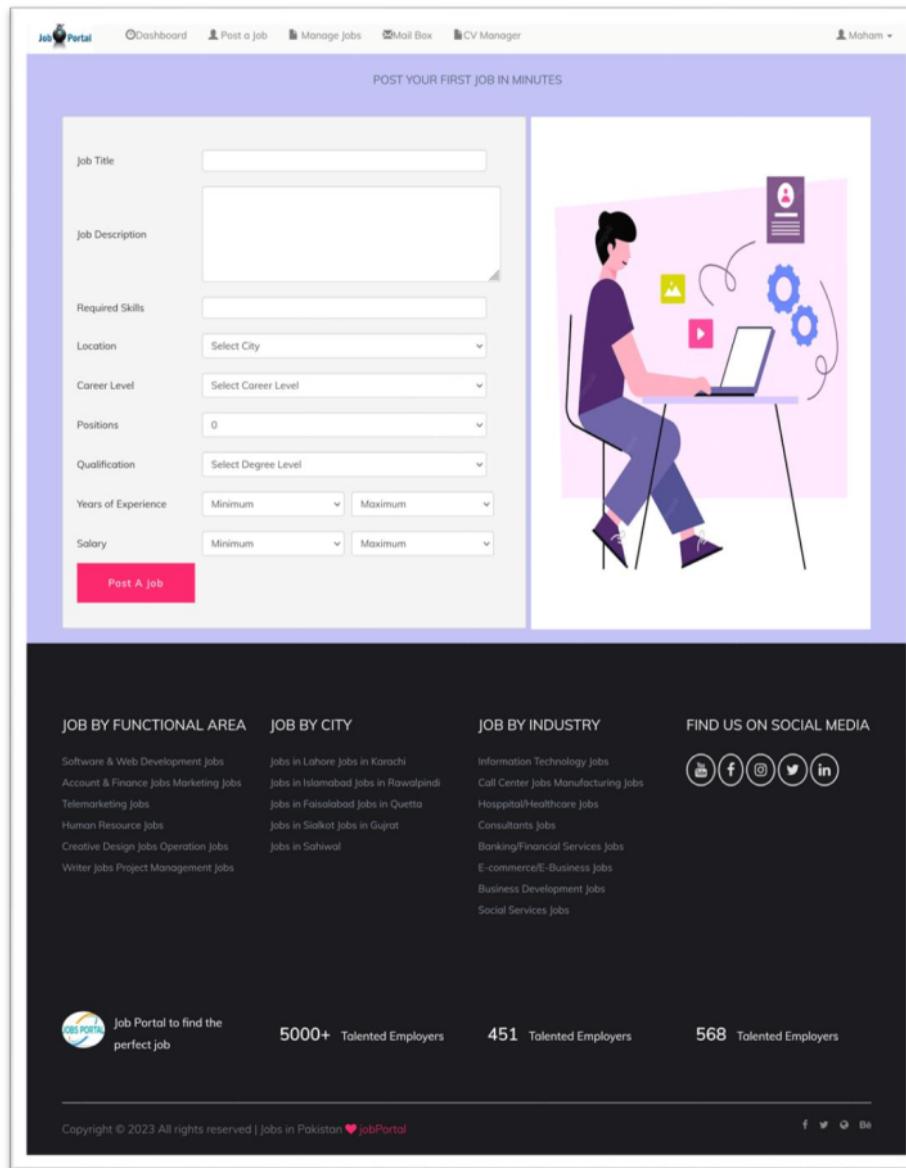


**Figure 5. 3 Login**

### 5.3.3 User Interface 3 – Post a Job

Figure 5. 4 shows the post a job screen for the employer. The user has to enter all the required information. Then, click on post a job. After clicking on post a job button. He gets a message of job is posted successfully.

16



**Figure 5.4 Post a Job**

#### 5.3.4 User Interface 4 – Manage Job Advertisement

Figure 5.5 shows the Manage Jobs screen for the employer. The employer can manage jobs in which he can add and delete the posted job.

Job Portal    Dashboard    Post a Job    Manage Jobs    Mail Box    CV Manager    Mahom ▾

## Manage Job Advertisement

Job_Title	Job_Description	City_Name	Skills	Career_Level	Positions	Date of Job Post	Update	Delete
C# DEVELOPER	We are looking for a skilled C# developer to join our team. As a C# developer, you will have a strong understanding of the C# programming language and experience working with client-server desktop and web applications. We desire a skilled C# developer to work on code and .NET framework solutions for our company. The developer will be responsible for designing, writing, and maintaining C# code for our future and existing projects.	Karachi	.net	Intern	2	22-01-2023	<a href="#">Update</a>	<a href="#">Delete</a>
Full Stack Developer	Problem-solving is a crucial skill for full-stack developers, as problems often come up during the programming process. Knowing how to come up with solutions can help developers excel.	Islamabad	HTML, CSS	Experienced	1	25-01-2023	<a href="#">Update</a>	<a href="#">Delete</a>
SQL Engineer	Sibisoft pvt ltd is looking for an SQA Engineer preferably with accounting and financial application testing experience. A resource who is hardworking, excellent in communication and understand project requirements to deliver a quality product. A candidate with excellent verbal and written English skills are a must with strong analytical skills and problem-solving skills.	Karachi	SQL	Experienced	2	22-01-2023	<a href="#">Update</a>	<a href="#">Delete</a>

**JOB BY FUNCTIONAL AREA**

- [Software & Web Development Jobs](#)
- [Account & Finance Jobs](#)
- [Marketing Jobs](#)
- [Telemarketing Jobs](#)
- [Human Resource Jobs](#)
- [Creative Design Jobs](#)
- [Operation Jobs](#)
- [Writer Jobs](#)
- [Project Management Jobs](#)

**JOB BY CITY**

- [Jobs in Lahore](#)
- [Jobs in Karachi](#)
- [Jobs in Islamabad](#)
- [Jobs in Rawalpindi](#)
- [Jobs in Faisalabad](#)
- [Jobs in Quetta](#)
- [Jobs in Sialkot](#)
- [Jobs in Gujrat](#)
- [Jobs in Sahiwal](#)

**JOB BY INDUSTRY**

- [Information Technology Jobs](#)
- [Call Center Jobs](#)
- [Manufacturing Jobs](#)
- [Hospital/Healthcare Jobs](#)
- [Consultants Jobs](#)
- [Banking/Financial Services Jobs](#)
- [E-commerce/E-Business Jobs](#)
- [Business Development Jobs](#)
- [Social Services Jobs](#)

**FIND US ON SOCIAL MEDIA**

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 Job Portal to find the perfect job

5000+ Talented Employers    451 Talented Employers    568 Talented Employers

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**Figure 5. 5 Manage Job Advertisement**

### **5.3.5 User Interface 5 – View or Download CV’s**

Figure 5.6 shows the view or download CV’s screen for the employer. The user is able to view CV by clicking on the view button. The user is able to Download CV by clicking on the download button.

The screenshot shows a job portal interface. At the top, there is a navigation bar with links: Dashboard, Post a Job, Manage Jobs, Mail Box, CV Manager, and a user profile for 'Maham'. Below the navigation bar, the text 'CV'S OF JOB SEEKERS' is displayed in pink. A large heading 'View or Download CVs' is centered above a table.

Job Title	Email	Phone	Apply Date	View CV	Download PDF
SQL Engineer	samina@gmail.com	03335523187	22-02-2023	<a href="#">View</a>	<a href="#">Download</a>
SQL Engineer	sumitali537@gmail.com	0333542612	10-02-2023	<a href="#">View</a>	<a href="#">Download</a>
SQL Engineer	samina@gmail.com	03335523187	22-02-2023	<a href="#">View</a>	<a href="#">Download</a>

Below the table, there are four sections: 'JOB BY FUNCTIONAL AREA', 'JOB BY CITY', 'JOB BY INDUSTRY', and 'FIND US ON SOCIAL MEDIA'. Each section lists various categories. At the bottom left is the 'jobPortal' logo with the tagline 'Job Portal to find the perfect job'. To the right, it shows statistics: '5000+ Talented Employers', '451 Talented Employers', '568 Talented Employers', and social media icons for YouTube, Facebook, Instagram, Twitter, and LinkedIn. The footer contains the copyright notice 'Copyright © 2023 All rights reserved | Jobs in Pakistan ❤️ jobPortal' and social media links for Facebook, YouTube, Instagram, and LinkedIn.

**Figure 5. 6 View or Download CV's**

### 5.3.6 User Interface 6 – Search a Job

Figure 5. 7 shows the search a job screen for the job seeker. The user can enters the job title and select the city. Click on search button the user gets the jobs related to his interest.

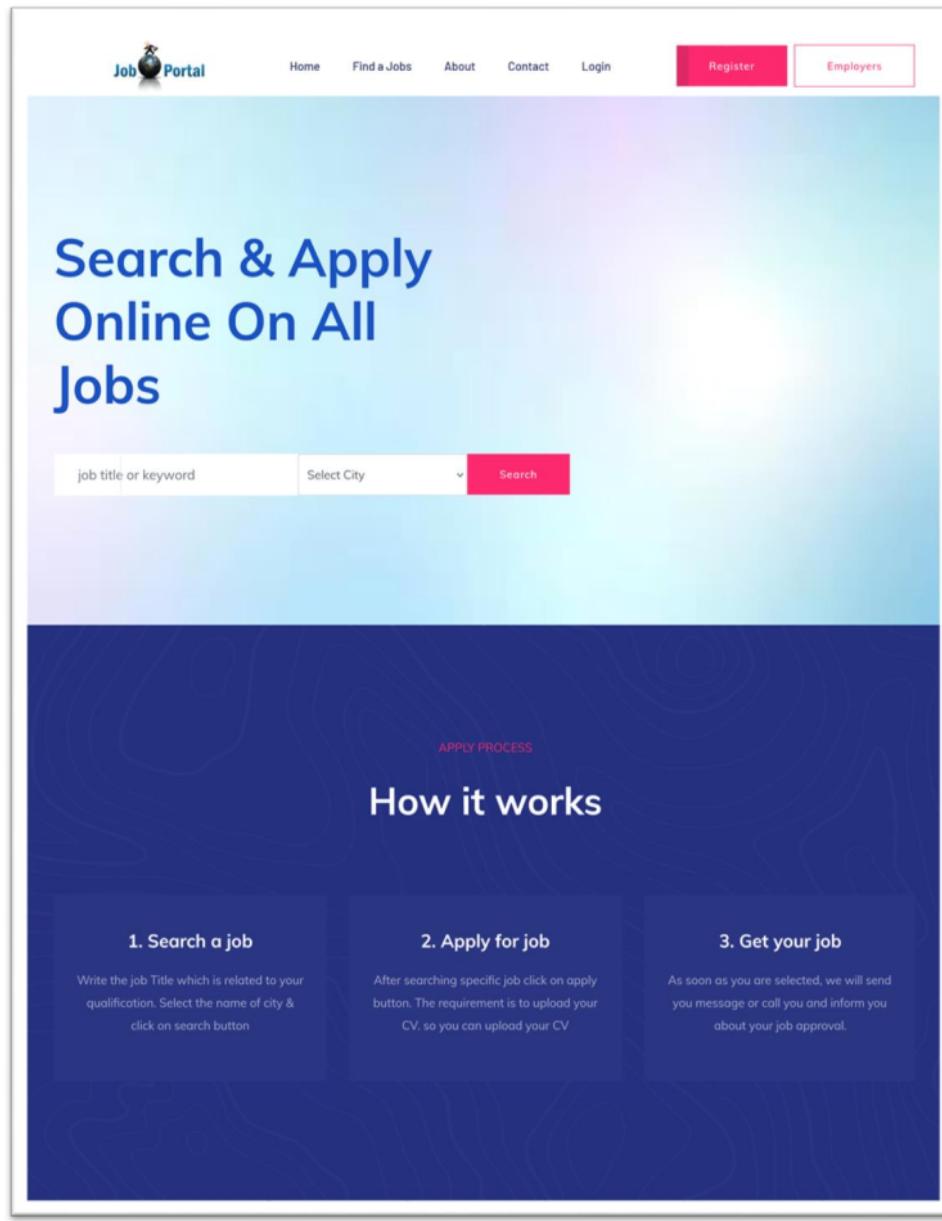


Figure 5.7 Search a Job

### **5.3.7 User Interface 7 – Result of Search Job**

Figure 5.8 shows the result of searched jobs screen for the job seeker. The user enters the title and select the city, and then the user clicks on search job button he redirects to this screen where he can see the searched jobs related to his interest.

The screenshot shows the Job Portal website interface. At the top, there is a navigation bar with links for Home, Find a Jobs, About, Contact, Login, Register, and Employers. Below the navigation bar is a banner featuring a group of professionals and the text "Jobs Searched". A search bar labeled "SEARCH JOBS" is present. The main content area displays a job listing for a "SQL Engineer" position, which includes the job title, company logo (Ziggo), location (Karachi, Pakistan), and salary range (\$12000 - \$18000). An "Apply" button is also visible. Below this, there are four sections: "JOB BY FUNCTIONAL AREA", "JOB BY CITY", "JOB BY INDUSTRY", and "FIND US ON SOCIAL MEDIA". The "JOB BY FUNCTIONAL AREA" section lists various job categories like Software & Web Development, Account & Finance, Marketing, etc. The "JOB BY CITY" section lists cities like Lahore, Karachi, Islamabad, Rawalpindi, Faisalabad, Quetta, Sialkot, Gujrat, and Sahiwal. The "JOB BY INDUSTRY" section lists industries like Information Technology, Call Center, Manufacturing, Hospital/Healthcare, Consultants, Banking/Financial Services, E-commerce/E-Business, Business Development, and Social Services. At the bottom, there is a footer with social media icons, a copyright notice, and a jobs statistics summary: 5000+ Talented Employers, 451 Applications Received, and 568 Jobs Available.

**Figure 5. 8 Result of search job**

### 5.3.8 User Interface 8 - Apply for Job

Figure 5. 9 shows the apply for job screen for the job seeker. The job seeker enters all the required information than click on apply button. The application for job is submitted successfully.

APPLICATION FOR JOB SEEKERS

Job Title	SQL Engineer
Full Name	Samina Nazli
Email	samina@gmail.com
Mobile	03335523187
Current Salary	
Desired Salary	
Upload CV	<input type="button" value="Browse..."/> No file selected.

**Click to Apply**

**JOB BY FUNCTIONAL AREA**

Software & Web Development Jobs	Jobs in Lahore	Jobs in Karachi
Account & Finance Jobs	Marketing Jobs	Jobs in Islamabad
Telemarketing Jobs		Jobs in Rawalpindi
Human Resource Jobs		Jobs in Quetta
Creative Design Jobs	Operation Jobs	Jobs in Sialkot
Writer Jobs	Project Management Jobs	Jobs in Gujrat

**JOB BY CITY**

Jobs in Lahore	Jobs in Karachi
Jobs in Islamabad	Jobs in Rawalpindi
Jobs in Quetta	Jobs in Sialkot
Jobs in Gujrat	Jobs in Sahiwal

**JOB BY INDUSTRY**

Information Technology Jobs	Call Center Jobs	Manufacturing Jobs
Hospital/Healthcare Jobs	Consultants Jobs	Banking/Financial Services Jobs
E-commerce/E-Business Jobs	Business Development Jobs	Social Services Jobs

**FIND US ON SOCIAL MEDIA**

**Job Portal to find the perfect job**

5000+ Talented Employers    451 Applications Received    568 Jobs Available

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**Figure 5. 9 Apply for Job**

## 5.4 Summary

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In this chapter, we covered the database design of the proposed system. The description of the database and all the information related to the tables are in the chapter. User interfaces with their details are also in this chapter, so users understand how to interact with the proposed system. In the next chapter, we tested all the use cases of the Smart job portal.

## Chapter 6

# SYSTEM TESTING

System Testing describes the test cases of the three primary users interacting with the proposed system, which are admin, employer, and job seeker. We tested all the use case for our proposed system.

### 6.1 Admin Panel Testing

#### 6.1.1 Test Case 1 – Login (Authorized)

Table 6. 1 Admin Login (Authorized) Test Case

<b>Test ID</b>	TC-01
<b>Related UC</b>	UC-01
<b>Use Case</b>	Login
<b>Test Description</b>	Check the login functionality.
<b>Test Date</b>	02-15-2023
<b>Test Environment</b>	<ul style="list-style-type: none"><li>OS : Windows</li><li>System: Laptop/Desktop</li></ul>
<b>Test Steps</b> <small>24</small>	<ol style="list-style-type: none"><li>Enter valid username.</li><li>Enter valid password.</li><li>Click on Login Button.</li></ol>
<b>Test Data</b>	<b>Username :</b> admin <b>Password :</b> 123
<b>Expected Results</b>	The user login successfully and he would redirect to dashboard.
<b>Actual Result</b>	User login and he would redirect to dashboard.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

### 6.1.2 Test Case 2 - Login (Unauthorized)

Table 6. 2 Admin Login (Unauthorized) Test Case

<b>Test ID</b>	TC-02
<b>Related UC</b>	UC-01
<b>Use Case</b>	Login
<b>Test Description</b>	Check the login functionality.
<b>Test Date</b>	02-15-2023
<b>Test Environment</b>	<ul style="list-style-type: none"><li>• OS : Windows</li><li>• System: Laptop/Desktop</li></ul>
<b>Test Steps</b>	<p>28</p> <ol style="list-style-type: none"><li>1. Enter invalid username.</li><li>2. Enter invalid password.</li><li>3. Click on Login Button.</li></ol>
<b>Test Data</b>	<b>Username :</b> admin1 <b>Password :</b> 12332
<b>Expected Results</b>	The error message appears and the dashboard would not appear.
<b>Actual Result</b>	Error message appears of invalid username and password.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

### 6.1.3 Test Case 3 – Manage Cities

Table 6. 3 Admin Manage Cities Test Case

<b>Test ID</b>	TC-03
<b>Related UC</b>	UC-02
<b>Use Case</b>	Manage Cities
<b>Test Description</b>	Check the Manage (add or update) City functionality.

<b>Test Date</b>	02-15-2023
<b>Test Environment</b>	<ul style="list-style-type: none"> <li>• OS : Windows</li> <li>• System: Laptop/Desktop</li> </ul>
<b>Test Steps</b>	<ol style="list-style-type: none"> <li>1. Click on manage cities.</li> <li>2. Click on edit button.</li> <li>3. Edit the city name or zip code.</li> <li>4. Click on update button.</li> </ol>
<b>Expected Results</b>	The city would be updated.
<b>Actual Result</b>	City is updated successfully.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

#### 6.1.4 Test Case 4 – Manage Countries

Table 6. 4 Admin Manage Countries Test Case

<b>Test ID</b>	TC-04
<b>Related UC</b>	UC-03
<b>Use Case</b>	Manage Countries
<b>Test Description</b>	Check the Manage (add or update) Country functionality.
<b>Test Date</b>	02-15-2023
<b>Test Environment</b>	<ul style="list-style-type: none"> <li>• OS : Windows</li> <li>• System: Laptop/Desktop</li> </ul>
<b>Test Steps</b>	<ol style="list-style-type: none"> <li>1. Click on manage countries.</li> <li>2. Click on edit button.</li> <li>3. Edit the country name, dialing code or domain code.</li> <li>4. Click on update button.</li> </ol>
<b>Expected Results</b>	The country would be updated.

<b>Actual Result</b>	Country is updated successfully.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

#### 6.1.5 Test Case 5 - Manage Skills

Table 6. 5 Admin Manage Skills Test Case

<b>Test ID</b>	TC-05
<b>Related UC</b>	UC-04
<b>Use Case</b>	Manage Skills
<b>Test Description</b>	Check the Manage (add or update) skill functionality.
<b>Test Date</b>	02-15-2023
<b>Test Environment</b>	<ul style="list-style-type: none"> <li>• OS : Windows</li> <li>• System: Laptop/Desktop</li> </ul>
<b>Test Steps</b>	<ol style="list-style-type: none"> <li>1. Click on manage skill.</li> <li>2. Click on add new button.</li> <li>3. Enter the skill name.</li> <li>4. Click on update button.</li> </ol>
<b>Expected Results</b>	The city would be added.
<b>Actual Result</b>	City is added successfully.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

#### 6.1.6 Test Case 6 – Manage Industries

Table 6. 6 Admin Manage Industries Test Case

<b>Test ID</b>	TC-06
<b>Related UC</b>	UC-05

<b>Use Case</b>	Manage Industries
<b>Test Description</b>	Check the Manage (add or update) Industry functionality.
<b>Test Date</b>	02-15-2023
<b>Test Environment</b>	<ul style="list-style-type: none"> <li>• OS : Windows</li> <li>• System: Laptop/Desktop</li> </ul>
<b>Test Steps</b>	<ol style="list-style-type: none"> <li>1. Click on manage industry.</li> <li>2. Click on add new button.</li> <li>3. Add the name of industry.</li> <li>4. Click on add button.</li> </ol>
<b>Expected Results</b>	The industry would be added.
<b>Actual Result</b>	Industry is added successfully.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

#### 6.1.7 Test Case 7 – Approve Member profile

Table 6. 7 Admin Approve Member Profile Test Case

<b>Test ID</b>	TC-07
<b>Related UC</b>	UC-06
<b>Use Case</b>	Approve Member Profile
<b>Test Description</b>	Check the approve member profile functionality.
<b>Test Date</b>	02-15-2023
<b>Test Environment</b>	<ul style="list-style-type: none"> <li>• OS : Windows</li> <li>• System: Laptop/Desktop</li> </ul>
<b>Test Steps</b>	<ol style="list-style-type: none"> <li>1. Click on Approve Member profile.</li> <li>2. Click on view button.</li> <li>3. All information of member show in a form.</li> <li>4. Click on approved button.</li> </ol>

<b>Expected Results</b>	The member profile would be approved.
<b>Actual Result</b>	Member profile is approved successfully.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

#### 6.1.8 Test Case 8 – Approve Job Advertisement

Table 6. 8 Admin Approve Job Advertisement Test Case

<b>Test ID</b>	TC-08
<b>Related UC</b>	UC-07
<b>Use Case</b>	Approve Job Advertisement
<b>Test Description</b>	Check the approve job advertisement functionality.
<b>Test Date</b>	02-15-2023
<b>Test Environment</b>	<ul style="list-style-type: none"> <li>• OS : Windows</li> <li>• System: Laptop/Desktop</li> </ul>
<b>Test Steps</b>	<ol style="list-style-type: none"> <li>1. Click on Approve Job Advertisement.</li> <li>2. Click on view button.</li> <li>3. All information of related to job shown in a form.</li> <li>4. Click on approved button.</li> </ol>
<b>Expected Results</b>	The job advertisement would be approved.
<b>Actual Result</b>	Job advertisement is approved successfully.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

## 6.2 Employer Panel Testing

### 6.2.1 Test Case 1 – Sign Up

Table 6. 9 Employer Signup Test Case

<b>Test ID</b>	TC-09
<b>Related UC</b>	UC-09
<b>Use Case</b>	Sign Up
<b>Test Description</b>	Check the sign up functionality.
<b>Test Date</b>	02-16-2023
<b>Test Environment</b>	<ul style="list-style-type: none"><li>• OS : Windows</li><li>• System: Laptop/Desktop</li></ul>
<b>Test Steps</b> <small>49</small>	<ol style="list-style-type: none"><li>1. Click on Sign Up button.</li><li>2. Enter the first name, last name, email, company name, password, mobile number, city name &amp; CNIC.</li><li>3. Click on create account button.</li><li>4. For verification, email is send to your registered email.</li></ol>
<b>Expected Results</b>	The registration would be done.
<b>Actual Result</b>	Registration is done successfully.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

### 6.2.2 Test Case 2 - Login

Table 6. 10 Employer Login Test Case

<b>Test ID</b>	TC-10
<b>Related UC</b>	UC-10
<b>Use Case</b>	Login
<b>Test Description</b>	Check the login functionality.

<b>Test Date</b>	02-16-2023
<b>Test Environment</b>	<ul style="list-style-type: none"> <li>• OS : Windows</li> <li>• System: Laptop/Desktop</li> </ul>
<b>23 Test Steps</b>	<ol style="list-style-type: none"> <li>1. Enter valid email.</li> <li>2. Enter valid password.</li> <li>3. Click on Login Button.</li> </ol>
<b>Test Data</b>	<b>Email :</b> mahashahid124@gmail.com <b>Password :</b> maha@123
<b>Expected Results</b>	The user login successfully and he would redirect to dashboard.
<b>Actual Result</b>	User login and he would redirect to dashboard.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

### 6.2.3 Test Case 3 – Forgot Password

Table 6.11 Employer Forgot Password Test Case

<b>Test ID</b>	TC-11
<b>Related UC</b>	UC-11
<b>Use Case</b>	Forgot Password
<b>Test Description</b>	Check the forgot password functionality.
<b>Test Date</b>	02-16-2023
<b>Test Environment</b>	<ul style="list-style-type: none"> <li>• OS : Windows</li> <li>• System: Laptop/Desktop</li> </ul>

<b>Test Steps</b>	<p style="text-align: center;">11</p> <ol style="list-style-type: none"> <li>1. Enter the <b>valid</b> email.</li> <li>2. Enter the <b>invalid password</b>.</li> <li>3. Click on Login Button.</li> <li>4. User gets an <b>error message</b>.</li> <li>5. Click on forgot password.</li> <li>6. User would redirect to next page where he would have to enter his valid email.</li> <li>7. Click on continue.</li> <li>8. The password is send to his email.</li> </ol>
<b>Expected Results</b>	The valid password would send to email.
<b>Actual Result</b>	Valid password send to email.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

#### 6.2.4 Test Case 4 – Post a job

Table 6.12 Employer Post a Job Test Case

<b>Test ID</b>	TC-12
<b>Related UC</b>	UC-13
<b>Use Case</b>	Post a Job advertisement
<b>Test Description</b>	Check the post job advertisement functionality.
<b>Test Date</b>	02-16-2023
<b>Test Environment</b>	<ul style="list-style-type: none"> <li>• OS : Windows</li> <li>• System: Laptop/Desktop</li> </ul>

<b>Test Steps</b>	<ol style="list-style-type: none"> <li>1. Click on post a job button.</li> <li>2. Enter the job title, job description, skills, location, career level, No. of positions, Qualification, Years of experience &amp; salary.</li> <li>3. Click on post a job button.</li> </ol>
<b>Expected Results</b>	The job advertisement would be posted.
<b>Actual Result</b>	Job advertisement would be posted successfully.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

#### 6.2.5 Test Case 5 – Manage Jobs

**Table 6. 13 Employer Manage Jobs Test Case**

<b>Test ID</b>	TC-13
<b>Related UC</b>	UC-14
<b>Use Case</b>	Manage Job advertisements
<b>Test Description</b>	Check the Manage (update or delete) job advertisement functionality.
<b>Test Date</b>	02-16-2023
<b>Test Environment</b>	<ul style="list-style-type: none"> <li>• OS : Windows</li> <li>• System: Laptop/Desktop</li> </ul>

<b>Test Steps</b>	<ol style="list-style-type: none"> <li>1. Click on Manage jobs.</li> <li>2. The user would see all the jobs which are posted.</li> <li>3. Click on update button.</li> <li>4. The user would update the job title, job description etc.</li> <li>5. Click on update button.</li> </ol> <p style="text-align: center;">OR</p> <ol style="list-style-type: none"> <li>6. Click on manage jobs.</li> <li>7. The user would see all the jobs which are posted.</li> <li>8. Click on delete button.</li> </ol>
<b>Expected Results</b>	The job advertisement would be updated or deleted.
<b>Actual Result</b>	Job advertisement would be updated or deleted successfully.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

#### 6.2.6 Test Case 6 – View or download CVs

**Table 6. 14 Employer View or download CV's Test Case**

<b>Test ID</b>	TC-14
<b>Related UC</b>	UC-15
<b>Use Case</b>	View or download
<b>Test Description</b>	Check the view or download CV functionality.
<b>Test Date</b>	02-16-2023
<b>Test Environment</b>	<ul style="list-style-type: none"> <li>• OS : Windows</li> <li>• System: Laptop/Desktop</li> </ul>

<b>Test Steps</b>	<ol style="list-style-type: none"> <li>1. Click on manage CVs.</li> <li>2. All CV's are appeared.</li> <li>3. Click on view button. OR</li> <li>4. Click on download button.</li> </ol>
<b>Expected Results</b>	The CV would view or downloaded.
<b>Actual Result</b>	CV would be view or downloaded successfully.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

### 6.3 Job Seeker Panel Testing

#### 6.3.2 Test Case 1 – Sign Up

Table 6. 15 Job Seeker SignUp Test Case

<b>Test ID</b>	TC-15
<b>Related UC</b>	UC-08
<b>Use Case</b>	Sign Up
<b>Test Description</b>	Check the sign up functionality.
<b>Test Date</b>	02-16-2023
<b>Test Environment</b>	<ul style="list-style-type: none"> <li>• OS : Windows</li> <li>• System: Laptop/Desktop</li> </ul>
<b>Test Steps</b>	<p style="color: red;">25</p> <ol style="list-style-type: none"> <li>1. Enter the first name.</li> <li>2. Enter the last name.</li> <li>3. Enter the email.</li> <li>4. Enter the password.</li> <li>5. Enter the mobile number.</li> <li>6. Click on create account button.</li> </ol>

<b>Expected Results</b>	The registration would be done.
<b>Actual Result</b>	Registration is done successfully.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

### 6.3.3 Test Case 2 - Login

Table 6. 16 Job Seeker login Test Case

<b>Test ID</b>	TC-16
<b>Related UC</b>	UC-10
<b>Use Case</b>	Login
<b>Test Description</b>	Check the login functionality.
<b>Test Date</b>	02-16-2023
<b>Test Environment</b>	<ul style="list-style-type: none"> <li>• OS : Windows</li> <li>• System: Laptop/Desktop</li> </ul>
<b>31 Test Steps</b>	<ol style="list-style-type: none"> <li>1. Enter valid email.</li> <li>2. Enter valid password.</li> <li>3. Click on Login Button.</li> </ol>
<b>Expected Results</b>	The user login successfully and he would redirect to dashboard.
<b>Actual Result</b>	User login and he would redirect to dashboard.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

### 22 6.3.4 Test Case 3 – Forgot password

Table 6. 17 Job Seeker Forgot Password Test Case

<b>Test ID</b>	TC-17
<b>Related UC</b>	UC-11

<b>Use Case</b>	Forgot Password
<b>Test Description</b>	Check the forgot password functionality.
<b>Test Date</b>	02-16-2023
<b>Test Environment</b>	<ul style="list-style-type: none"> <li>• OS : Windows</li> <li>• System: Laptop/Desktop</li> </ul>
<b>Test Steps</b>	<p>11</p> <ol style="list-style-type: none"> <li>1. Enter the valid email.</li> <li>2. Enter the invalid password.</li> <li>3. Click on Login Button.</li> <li>4. User gets an error message.</li> <li>5. Click on forgot password.</li> <li>6. User would redirect to next page where he would have to enter his valid email.</li> <li>7. Click on continue.</li> <li>8. The password is send to his email.</li> </ol>
<b>Expected Results</b>	The valid password would send to email.
<b>Actual Result</b>	Valid password send to email.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

### 6.3.5 Test Case 4 – Search Jobs

Table 6. 18 Job Seeker Search Job Test Case

<b>Test ID</b>	TC-18
<b>Related UC</b>	UC-14
<b>Use Case</b>	Search Job
<b>Test Description</b>	Check the search job functionality.
<b>Test Date</b>	02-16-2023
<b>Test Environment</b>	<ul style="list-style-type: none"> <li>• OS : Windows</li> <li>• System: Laptop/Desktop</li> </ul>

<b>Test Steps</b>	<ol style="list-style-type: none"> <li>1. Enter the job title.</li> <li>2. Select the city.</li> <li>3. Click on search button.</li> </ol>
<b>Expected Results</b>	The job would be searched.
<b>Actual Result</b>	Job searched successfully.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

#### 6.3.6 Test Case 5 – Apply for job

Table 6. 19 Job Seeker Apply job Test Case

<b>Test ID</b>	TC-19
<b>Related UC</b>	UC-15
<b>Use Case</b>	Apply for Job
<b>Test Description</b>	Check the apply for job functionality.
<b>Test Date</b>	02-16-2023
<b>Test Environment</b>	<ul style="list-style-type: none"> <li>• OS : Windows</li> <li>• System: Laptop/Desktop</li> </ul>
<b>Test Steps</b>	<ol style="list-style-type: none"> <li>1. Enter the job title.</li> <li>2. Select the city.</li> <li>3. Click on search button.</li> <li>4. Jobs searched successfully.</li> <li>5. Click on apply button.</li> <li>6. Enter the current salary.</li> <li>7. Enter the desired salary.</li> <li>8. Upload your CV.</li> <li>9. Click on save button.</li> </ol>
<b>Expected Results</b>	The job application would be submitted.

<b>Actual Result</b>	Job application submitted successfully.
<b>Test By</b>	Maha Shahid (Developer)
<b>Status</b>	Pass

#### 6.4 Summary

In this chapter, we covered the test cases for our proposed system. All the functional requirements are tested. The users of Smart Job Portal are admins, employers, and job seekers. In the next chapter, we discussed the user manual.

## Chapter 7

### USER MANUAL

#### 7.1 Login

- 1 Open the smart job portal **website**.
2. Click on **login**.
3. Enter the **email**.
4. Enter the **password**.
5. Click **Login** button.
6. After click on login, the users would redirect to dashboard.

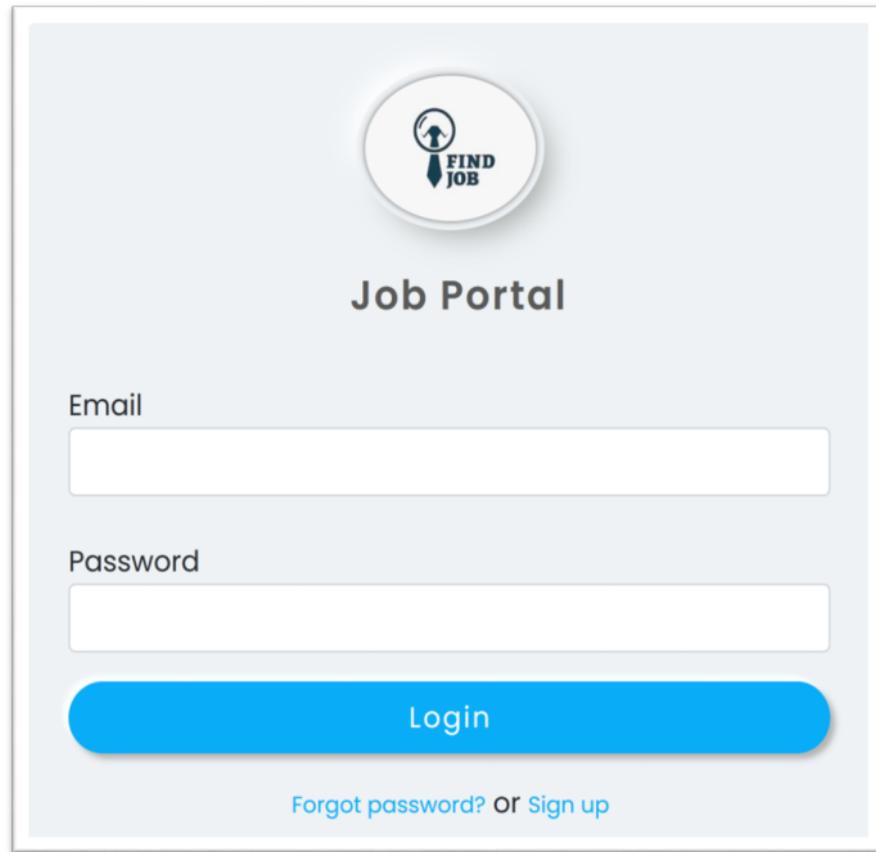
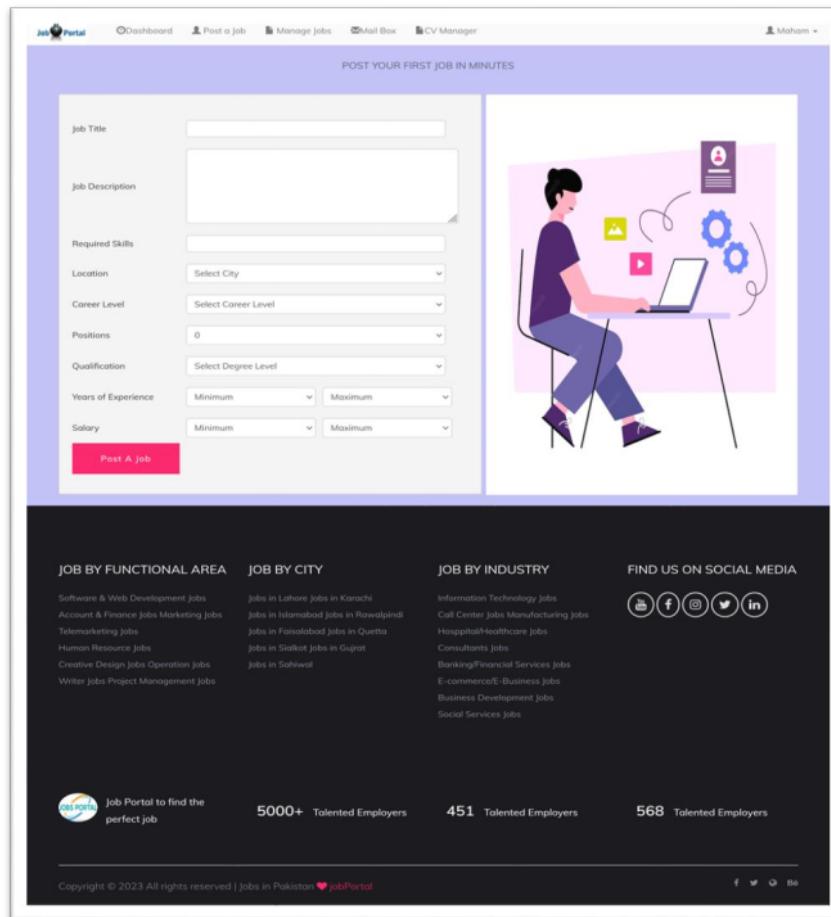


Figure 7.1 Login

## 7.2 Post a Job

1. Click on **post a job** button.
2. The required fields are **Job Title**, **Job Description**, skills, career level, No. of positions, Qualification, Years of experience, salary range.
3. Enter all these fields or fill all the above-mentioned fields.
4. Click on **post a job**.



4. Click on **Search** button.

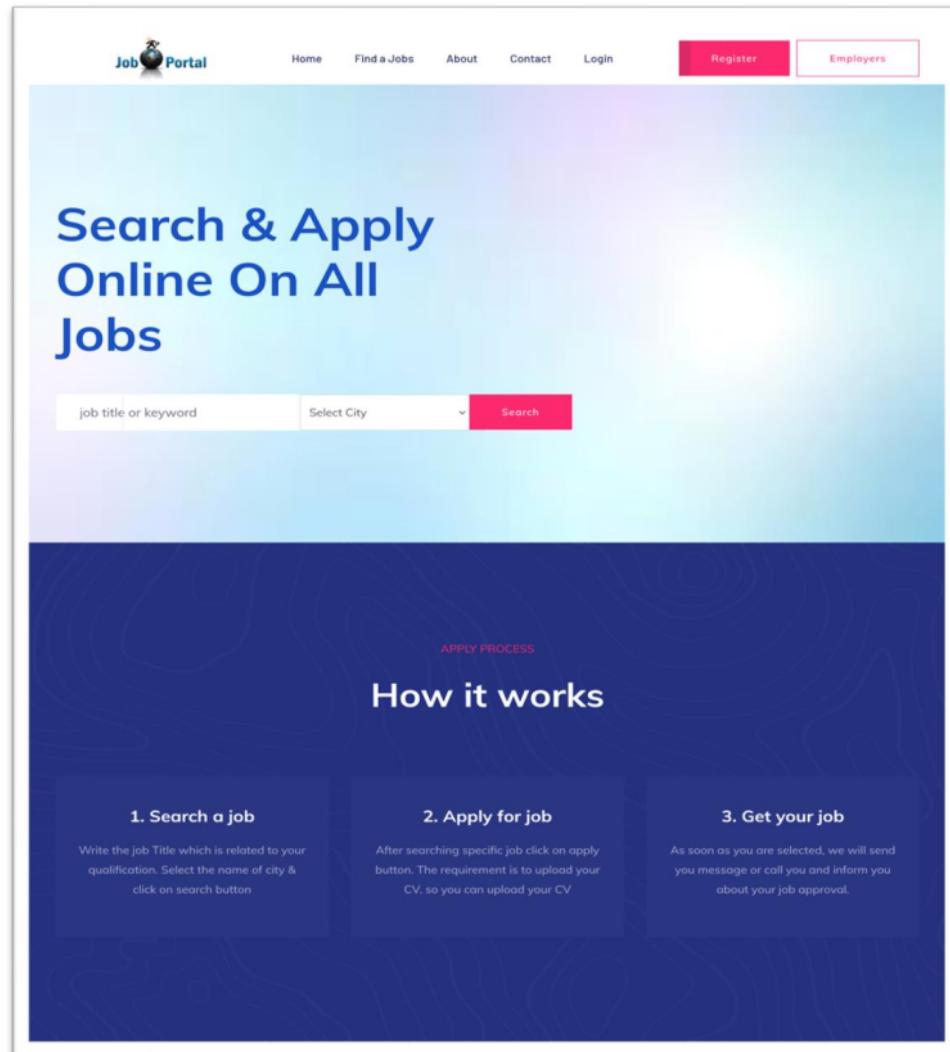


Figure 7.3 Search a Job

#### 7.4 Apply for Job

1. Open the Smart Job Portal Website.
2. Enter the **job title**.
3. Select the **city**.

4. Click on **Search** button.
5. Click on apply button.
6. Enter the **current** salary.
7. Enter the **desired** salary.
8. Upload the **CV**.
9. Click on Apply button.

The screenshot shows the 'APPLICATION FOR JOB SEEKERS' form. The fields filled are:

- Job Title: SQL Engineer
- Full Name: Samina Nazli
- Email: samina@gmail.com
- Mobile: 03335523187
- Current Salary: (empty)
- Desired Salary: (empty)
- Upload CV: (Browse... No file selected.)

A green 'Click to Apply' button is at the bottom. Below the form, there's a footer with social media links and statistics:

JOB BY FUNCTIONAL AREA	JOB BY CITY	JOB BY INDUSTRY	FIND US ON SOCIAL MEDIA
Software & Web Development Jobs Account & Finance Jobs Marketing Jobs Telemarketing Jobs Human Resource Jobs Creative Design Jobs Operation Jobs Writer Jobs Project Management Jobs	Jobs in Lahore Jobs in Karachi Jobs in Islamabad Jobs in Rawalpindi Jobs in Faisalabad Jobs in Quetta Jobs in Sialkot Jobs in Gujarat Jobs in Sahiwal	Information Technology Jobs Call Center Jobs Manufacturing Jobs Hospital/Healthcare Jobs Consultants Jobs Banking/Financial Services Jobs E-commerce/E-Business Jobs Business Development Jobs Social Services Jobs	

Footer stats: Job Portal to find the perfect job, 5000+ Talented Employers, 451 Applications Received, 568 Jobs Available. Copyright © 2023 All rights reserved | Jobs in Pakistan jobPortal. Social media links: f, v, g, Be.

**Figure 7.4 Apply for Job**

## 7.5 View and Download CV's

1. Click on **Manage CV's**.

2. Click on **view** button.
3. The CV viewed successfully.
4. Click on **download** button.
5. The CV downloaded successfully.

The screenshot shows a web application interface for a job portal. At the top, there is a navigation bar with links: Dashboard, Post a Job, Manage Jobs, Mail Box, CV Manager, and a user profile dropdown for 'Maham'. Below the navigation bar, the page title is 'CVs OF JOB SEEKERS' in pink text. The main content area features a heading 'View or Download CVs' in dark blue text. Below the heading is a table listing three job seekers with their details and download options.

Job Title	Email	Phone	Apply Date	View CV	Download PDF
SQL Engineer	samina@gmail.com	03335523187	22-02-2023	<a href="#">View</a>	<a href="#">Download</a>
SQL Engineer	sumitali537@gmail.com	0333542612	10-02-2023	<a href="#">View</a>	<a href="#">Download</a>
SQL Engineer	samina@gmail.com	03335523187	22-02-2023	<a href="#">View</a>	<a href="#">Download</a>

Below the table, there is a dark footer section containing four columns of links:

- JOB BY FUNCTIONAL AREA**: Software & Web Development Jobs, Account & Finance Jobs, Marketing Jobs, Telemarketing Jobs, Human Resource Jobs, Creative Design Jobs, Operation Jobs, Writer Jobs, Project Management Jobs.
- JOB BY CITY**: Jobs in Lahore, Jobs in Karachi, Jobs in Islamabad, Jobs in Rawalpindi, Jobs in Faisalabad, Jobs in Quetta, Jobs in Sialkot, Jobs in Gujrat, Jobs in Sahiwal.
- JOB BY INDUSTRY**: Information Technology Jobs, Call Center Jobs, Manufacturing Jobs, Hospital/Healthcare Jobs, Consultants Jobs, Banking/Financial Services Jobs, E-commerce/E-Business Jobs, Business Development Jobs, Social Services Jobs.
- FIND US ON SOCIAL MEDIA**: Links to YouTube, Facebook, Instagram, Twitter, and LinkedIn.

The footer also includes a logo for 'Job Portal', a statement 'Job Portal to find the perfect job', and social media counts: 5000+ Talented Employers, 451 Talented Employers, and 568 Talented Employers. At the bottom, there is a copyright notice 'Copyright © 2023 All rights reserved | Jobs in Pakistan ❤️ jobPortal' and a row of small social media icons.

**Figure 7.5 View or Download CV's**

## **7.6 Summary**

In this chapter, we describe the user manual of our proposed system. The user interacts with the website by following the steps. We are adding the diagrams of our proposed system for better understanding. The user will sign up into the smart job portal. He will log in to the site. After login, he posts a job and manages job advertisements. He will also view and download the CV.

# CONCLUSION & FUTURE WORK

### 8.1 Conclusion

Smart Job Portal has been developed for job seekers and employers in which job seekers can search for a specific job according to their qualifications, skills, and interests. He can also apply for a job that matches their interests. Employers can post job advertisements that are vacant in their company. The employer can update or delete the job advertisements as well. The proposed system also provides verification of employers and job seekers when they signup in Smart Job Portal. Companies can find the right candidate for the right job very efficiently using the Smart Job Portal.

### 8.2 Future Work

In the future, we will include the feature of messaging for job seekers & employers. They can send and receive messages within the site. We will also work on the functionality that we apply restriction of skills and locations. In this functionality, the job seeker would not apply for a job that does not match their skills. The job seeker would not be able to apply for a job not suitable for their location.

# SMART JOB PORTAL

## ORIGINALITY REPORT

**14%**

SIMILARITY INDEX

**6%**

INTERNET SOURCES

**1%**

PUBLICATIONS

**12%**

STUDENT PAPERS

### PRIMARY SOURCES

- |          |   |                |
|----------|---|----------------|
| <b>1</b> | <b>Submitted to Middle East College of Information Technology</b> | <b>1 %</b>     |
|          | Student Paper   |                |
| <b>2</b> | <b>Submitted to University of London External System</b>          | <b>1 %</b>     |
|          | Student Paper   |                |
| <b>3</b> | <b>comparecamp.com</b>  | <b>1 %</b>     |
|          | Internet Source   |                |
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