

**ANKARA UNIVERSITY  
ENGINEERING FACULTY  
DEPARTMENT OF COMPUTER ENGINEERING**



**SOFTWARE ENGINEERING**

**LECTURE PROJECT**

**A JOB WEBSITE ANALYSIS REPORT**

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UML Tool : Argo UML

# Object-Oriented Software Engineering

## Analysis Report

### A Job Website

#### TABLE OF CONTENTS

|  |    |
|--|----|
| 1. Introduction .....                  | 1  |
| 2. Overview .....                      | 1  |
| 3. Scope of Project .....              | 2  |
| 3.1. Problem Statement .....           | 2  |
| 3.2. Proposed System .....             | 3  |
| 3.2.1. Software Architecture .....     | 3  |
| 4. Requirement Specification .....     | 4  |
| 4.1. Functional Requirements .....     | 4  |
| 4.1.1. Modules .....                   | 5  |
| 4.1.2. Characteristics .....           | 5  |
| 4.1.3. Constraints .....               | 5  |
| 4.2. Non-Functional Requirements ..... | 6  |
| 4.2.1. Security .....                  | 6  |
| 4.2.2. Safety .....                    | 6  |
| 4.2.3. Performance .....               | 6  |
| 5. System Model .....                  | 7  |
| 5.1. Use Case Diagram .....            | 8  |
| 5.1.1. Registration .....              | 9  |
| 5.1.2. Login .....                     | 10 |
| 5.1.3. Search .....                    | 11 |
| 5.1.4. Apply Job .....                 | 12 |
| 5.1.5. Like Job List .....             | 12 |
| 5.1.6. Feedback .....                  | 13 |
| 5.1.7. Profile Match .....             | 13 |

|  |    |
|--|----|
| 5.1.8. Manage Account .....              | 14 |
| 5.1.9. Post Job .....                    | 14 |
| 5.1.10. Manage Job Active/Inactive ..... | 15 |
| 5.1.11. Send/Receive Message .....       | 15 |
| 5.1.12. Change Password .....            | 16 |
| 5.2. Dynamic Models .....                | 17 |
| 5.2.1. Sequence Diagram .....            | 17 |
| 5.2.2. Activity Diagram .....            | 22 |
| 5.3. Object and Class Model .....        | 24 |
| 5.3.1. Class Diagram .....               | 24 |
| 6. User Interface .....                  | 26 |
| 6.1. Screen Mock-ups .....               | 26 |
| 6.1.1. Job Seeker Pages .....            | 28 |
| 6.1.2. Employer Pages .....              | 31 |
| 6.1.3. Administrator Pages .....         | 32 |
| 6.1.4. Registration Pages .....          | 35 |
| 6.1.5. Contact Us .....                  | 36 |
| 6.1.6. About Us .....                    | 37 |
| 7. Conclusion .....                      | 38 |
| 8. References .....                      | 38 |

## **1. Introduction**

- This web based portal basically concerned with different job services provided by different companies.
- It is also concerned with details of jobseekers.
- Jobseeker can view the list of different jobs and can apply for jobs.
- Then the company going to select the required job seekers for their qualification and update the database.
- The portal going to follow different companies policy.
- It should be an admin to manage all things.

## **2. Overview**

- Scope of Project
- Problem Statement
- Proposed System (Software Architecture)
- Functional Requirements
- Non-Functional Requirements
- UML Diagrams
- User Interface
- Important Decisions in Overall Analysis

### **3. Scope of Project**

→The online job portal that is developed provide jobseekers with different jobs information like:

- Online applying for jobs
- Search for jobs

→Supported by well-designed database and web-based design.

→A friendly user interface is provided to facilitate different services.

→The basic scope contains:

- Jobseeker's area
- Company's area
- Administrator's area

#### **3.1. Problem Statement**

Problem:

→The old system requires applicants to search through print and visual media for job opportunities.

→Applicants need to apply for jobs using conventional methods and appear for interview on a specified date at a specified location.

→Employers need to advertise the vacancies and sort all applicant details, conduct selection procedures and complete the formalities.

Solution:

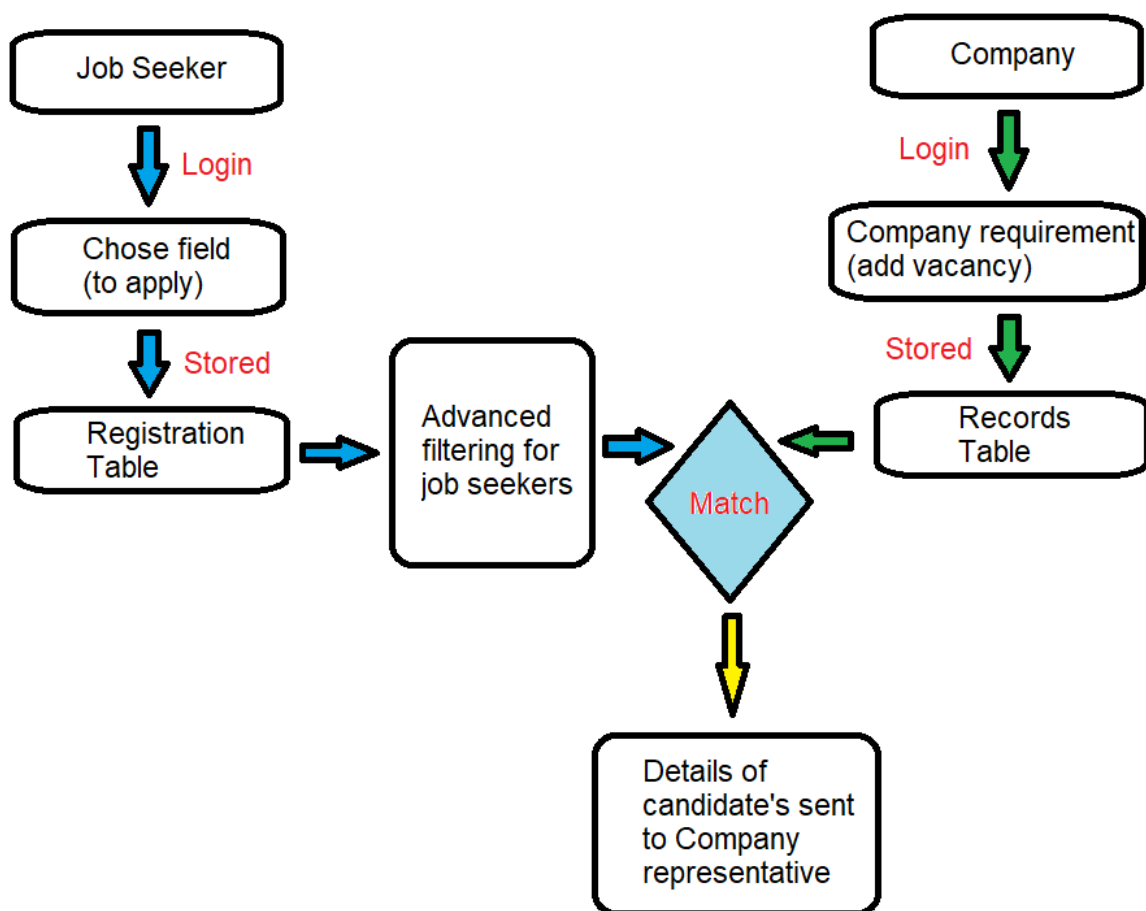
→This approach of that problem is "Online Job Portal" where applicants easily find the jobs and employer can find suitable candidates for the job.

### 3.2. Proposed System

→ Simple and Professional GUI for users of all qualification groups.

→ Increased filtering for employees seeking job as a Fresher Or as an Experienced individual.

#### 3.2.1. Software Architecture



## **4. Requirement Specification**

### **4.1. Functional Requirements**

- Secure registration and Login facilities for both Job Seeker as well as Employer.
- An intelligent search for jobs in a particular Qualification/Experience in a certain Field.
- An intelligent search engine for the Employer to search for Job Seekers with a particular Qualification/Experience in a certain Field.
- Employers should be notified if any Job Seeker has shown interest in their vacancy.
- The Employer should have an option for downloading the CV of the Job Seeker.
- A Blog/Forum where the general job related discussions could be maintained.
- The Job Seeker should have an option of updating his CV.
- Captcha has to be used in all registration form to ensure that no spam user is able to register at the website.
- Administrator has to approve the Employer before he can put the vacancies.
- Also a paid section of the website could be maintained where special features are given to the Job Seekers.
- The special features might include a CV Writing Help, access to a job fair etc.

#### **4.1.1. Modules**

##### User Module

→In this module Job Seeker register himself and upload his resume and fill the profile give by admin and after login he will search for the job on various conditions and he can change his profiles and resume and he can apply for the jobs based on various conditions. He can see the response of the company and he can call the company person for the interview.

##### Company Module

→In this module Company register himself and his company and after login he will add new job and he can search

##### Admin Module

→In this module Admin will add all the qualifications, skill, experience, city, state, country and update and delete information about the employer or job seeker. He can also search for the job seeker and he can send mail to offer the job to job seeker and he can also see the jobs add by the job provider.

#### **4.1.2. Characteristics**

→The “User” is expected to be internet familiar and to be able to use the job portal.

→The “Admin” is expected to be familiar with internet and database.

#### **4.1.3. Constraints**

##### Hardware Constraints

→The system should work on most home desktop and laptop PC's which support PHP, HTML or MySQL.

##### Software Constraints

→The system will be intent to run on Firefox, Google Chrome etc.



## **4.2. Non-Functional Requirements**

- Secure access of confidential data (user's details). SSL can be used.
- Better component design to get better performance at peak time.
- Flexible service based architecture will be highly desirable for future extension.
- The database used here is robust, reliable and fast. So users will have to wait for the output very short time.
- This application can be accessed from any type of platform.
- There is no case of redundancy in the database so it will not take extra memory space.
- Username & password are sent to the users via mobile sms and email after registration.
- Password recovery system is also provided in case of forgetting the password.

### **4.2.1. Security**

- The job portal will provide restriction against unauthorized access.

### **4.2.2. Safety**

- There will be a backup of data for any future mishap.

### **4.2.3. Performance**

- The online job portal will never break down and work consistently.

## 5. System Model

UML Diagrams

→ Use Case Diagram

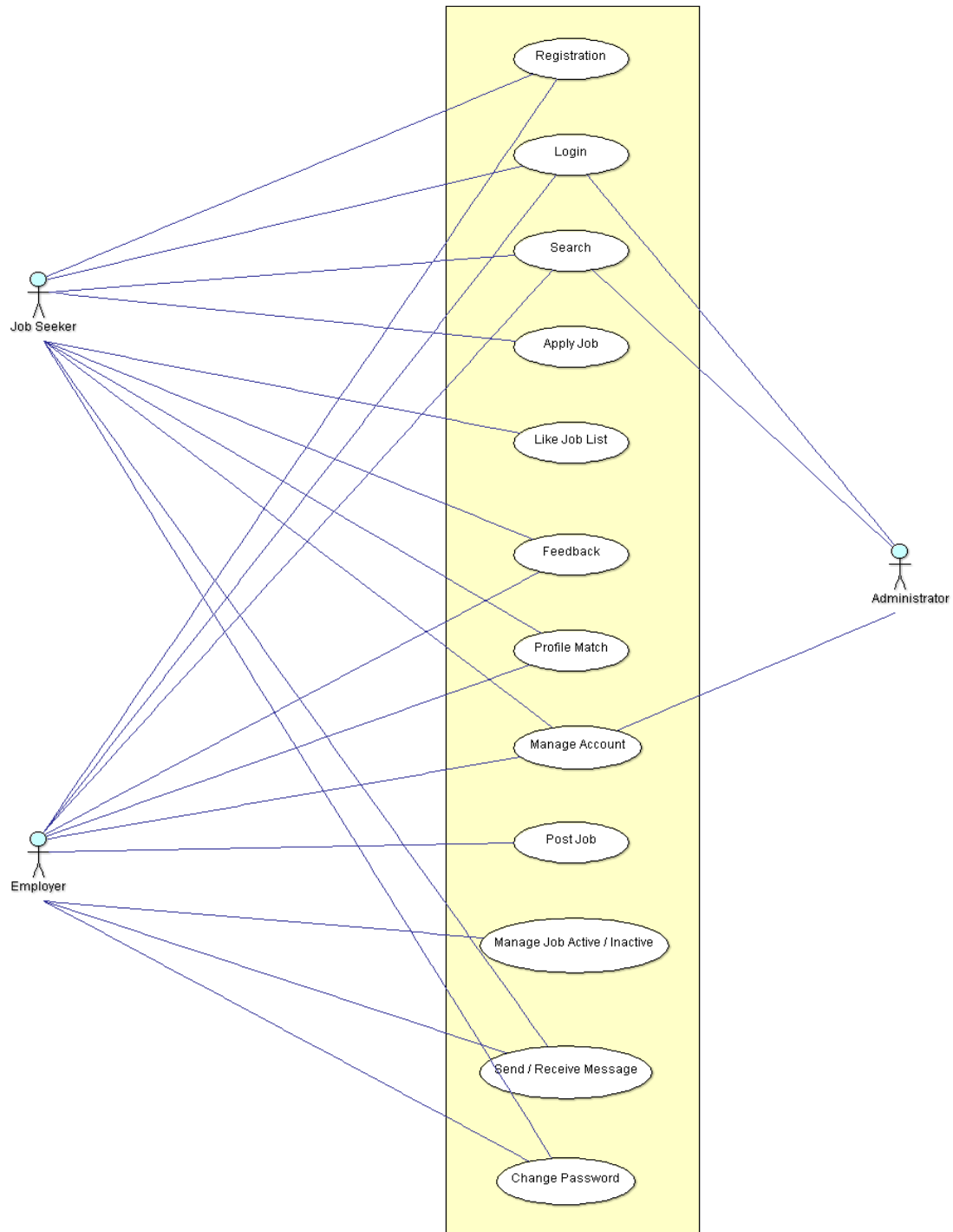
→ Sequence Diagram

→ Activity Diagram

→ Class Diagram

## 5.1. Use Case Diagram

This section provides information about the main use case model of Job Website, detailed use case explanations are included below.



**Figure 5.1.** This figure illustrates the use case model of Job Website

### 5.1.1. Registration

Primary Actor

→ Job Seekers, Employers, New Users

Stakeholders and Interests

→ New users and the users having account can register.

→ Employers and job seekers that already have account can register again if they don't remember their email. If they remember they can recover their passwords by clicking "Forget Password?".

Pre-condition

→ The account details are in database, so users must not be logged in.

Post-condition

→ The user must use appropriate format for email like [example@example.com](mailto:example@example.com) and mobile with 11 digits.

Entry Condition

→ After filling his info the user clicks "Submit" button.

Exit Condition

→ -

Success Scenario Event Flow

→ The user goes to register form according to account type which is either Job Seeker or Employer.

→ The user fills the information in the right format and clicks to "Submit" button.

→ If the account is not in the database, the new account is created.

Alternative Flows

→ If the email has wrong format, a dialog saying that "Please Enter valide mail" appears.

→ If the mobile has wrong format, a dialog saying that "Please Enter valid mobile" appears.

→ If the username exists, a warning appears.

### **5.1.2. Login**

Primary Actor

→ Job Seekers, Employers, Administrators

Stakeholders and Interests

→ Each of the members above have different types of home pages and tabs to do their own tasks.

Pre-condition

→ The user must have an account that exists in the database.

Post-condition

→ -

Entry Condition

→ The user must click "Login" button by providing correct and non-empty username and password.

Exit Condition

→ -

Success Scenario Event Flow

→ The user enters his username and password.

→ The user click "Login" button.

→ If there exists an account with the username and password is correct, the user logs in and goes to his home page depending on his account type.

Alternative Flows

→ If either of the credentials are wrong, it's stated on the login form.

### **5.1.3. Search**

Primary Actor

→ Job Seekers, Employers, Administrators

Stakeholders and Interests

→ Job Seekers search the jobs that are posted.

→ Employers search the Job Seekers that applied to their job.

→ Administrators search to manage both job seekers and employers.

Entry Condition

→ Job Seekers must click “Search Job” tab. Employers must be in “Manage Job” page. Administrators must be in either “Manage Job Seeker” page or “Manage Employer” page.

Exit Condition

→ -

Success Scenario Event Flow

→ The user has logged in the system.

→ According to his account type, he goes to appropriate page.

→ Types text into the text field and clicks “Submit”.

Alternative Flows

→ If no such entry is found, an empty page is shown.

#### **5.1.4. Apply Job**

Primary Actor

→ Job Seekers

Stakeholders and Interests

→ Job Seekers can apply the jobs they've searched by just clicking "Apply" button.

Entry Condition

→ Job Seekers can apply by clicking "Apply" button.

Exit Condition

→ -

Success Scenario Event Flow

→ Job Seeker logs in.

→ He searches or looks the news tab to list jobs.

→ He clicks "Apply" button, after adding his CV.

#### **5.1.5. Like Job List**

Primary Actor

→ Job Seekers

Stakeholders and Interests

→ Any Job Seeker can like jobs searched.

Entry Condition

→ The user must be in "Search Jobs" page.

Exit Condition

→ -

Success Scenario Event Flow

→ The Job Seeker click "Search Job" tab and goes the page.

→ He chooses one of the jobs and click the "Like" button

### **5.1.6. Feedback**

Primary Actor

→Employers, Job Seekers

Stakeholders and Interests

→Employers and Job Seekers can give feedbacks about the website.

Pre-condition

→The user must be logged in.

Post-condition

→-

Entry Condition

→The user clicks “Feedback” tab to go to the feedback page.

Exit Condition

→After sending the feedback, it goes to home page.

Success Scenario Event Flow

→The user clicks “Feedback” tab.

→He goes to the page.

→He writes his feedback into the text field and clicks submit button

### **5.1.7. Profile Match**

Primary Actor

→Employers, Job Seekers



### **5.1.8. Manage Account**

Primary Actor

→Employers, Job Seekers, Administrators

Stakeholders and Interests

→Users can change their account information to update.

Entry Condition

→The user must be in Profile page.

Exit Condition

→-

Success Scenario Event Flow

→The user goes to Profile page.

→Enters his new information.

→Clicks "Submit" to update it.

### **5.1.9. Post Job**

Primary Actor

→Employer

Stakeholders and Interests

→Employers can post jobs for people seeking a job.

Entry Condition

→Employer must be in Manage Job page.

Exit Condition

→-

Success Scenario Event Flow

→Employer click Manage Job tab and goes to the page.

→Fills the details of the job.

→Clicks the Submit button to post it.

#### **5.1.10. Manage Job Active/Inactive**

Primary Actor

→Employer

Stakeholders and Interests

→Employers can create a new job or edit an existing one.

Entry Condition

→Employer must go to the Manage Job page.

Exit Condition

→-

Success Scenario Event Flow

→Employer click Manage Job tab and goes to the page.

→Fills the details about the job.

→Clicks Submit button to post it.

#### **5.1.11. Send/Receive Message**

Primary Actor

→Employers, Job Seekers

Stakeholders and Interests

→Job Seekers and Employers can send message in order to make an interview.

Entry Condition

→The user must be in Walkin page.

Exit Condition

→-

Success Scenario Event Flow

→The Employer goes to Walkin page.

→He sends a request to the Job Seeker.

→If the Job Seeker accepts they can make an interview by a chat program.

### **5.1.12. Change Password**

Primary Actor

→Employers, Job Seekers

Stakeholders and Interests

→The users can change their passwords to a new password.

Pre-condition

→The user must be logged in.

Post-condition

→-

Entry Condition

→The user must be in Profile page.

Exit Condition

→-

Success Scenario Event Flow

→The user clicks to Profile tab.

→Goes to the page and types the new password.

→Clicks the Submit button to update.

## **5.2. Dynamic Models**

This section provides detailed information about the Job Website by illustrating some crucial scenarios of the job in sequence diagrams. Besides, activities of the system are also stated in activity diagram in this section.

### **5.2.1. Sequence Diagram**

→Following sequence diagrams illustrates the scenario explained below.

Scenario 1

→A person must register to using this system.

→A person choose the position that being appropriate for himself (Job Seeker or Employer). After the registering the system, it is a member of the system.

→Members must log in to enter the system. If the information entered in the system matches the information in the database correctly, the user enters the system.

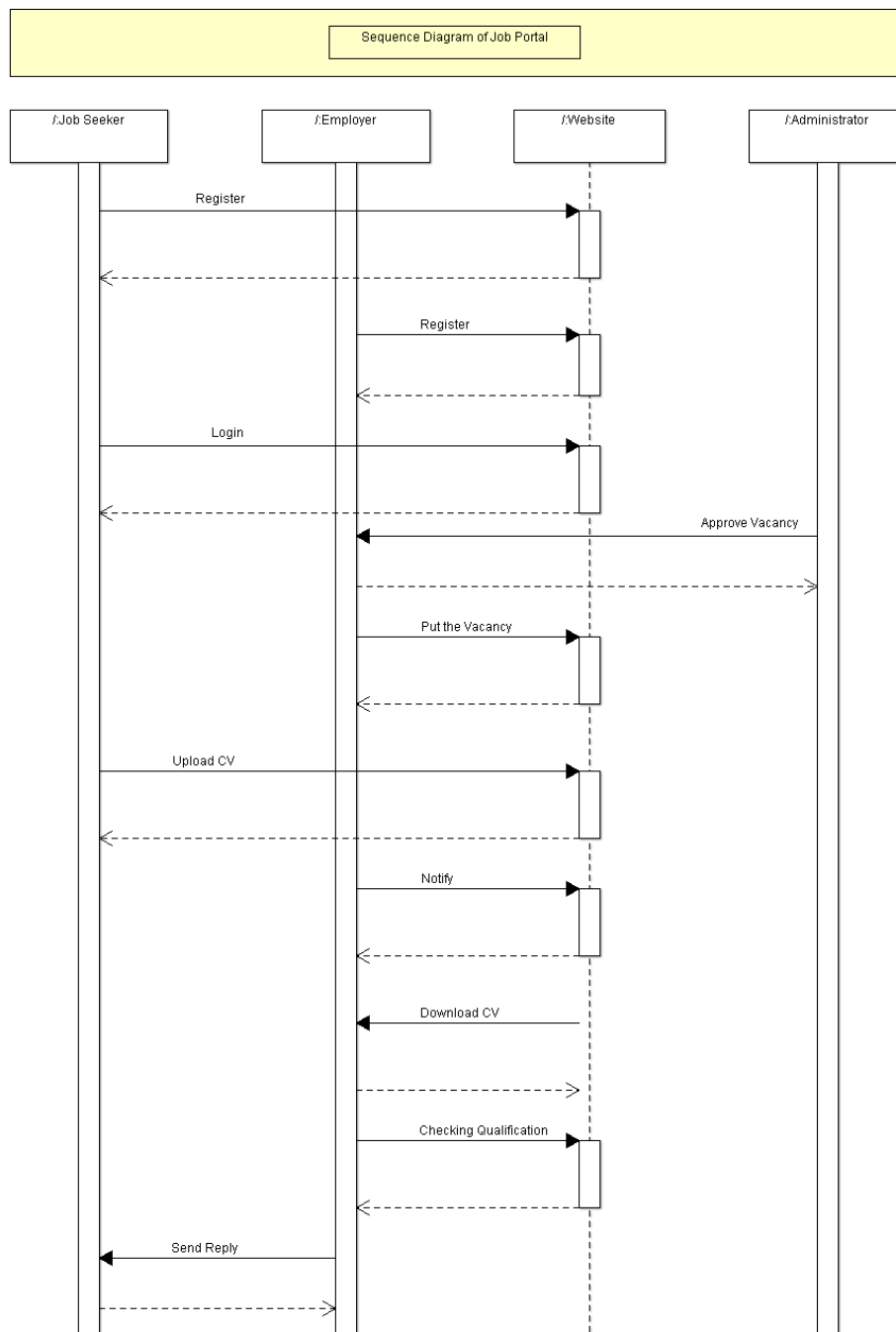
→After entering the system, the employer can put the vacancy on the website if the admin lets to the employer.

→A jobseeker upload the his/her CV on the website. Of course, the admin should approve this CV for seeing the companies.

→A employer can notify their announcement on the website.

→A employer can check the appropriate qualifications for himself.

→A employer can send a feedback to the job seeker.

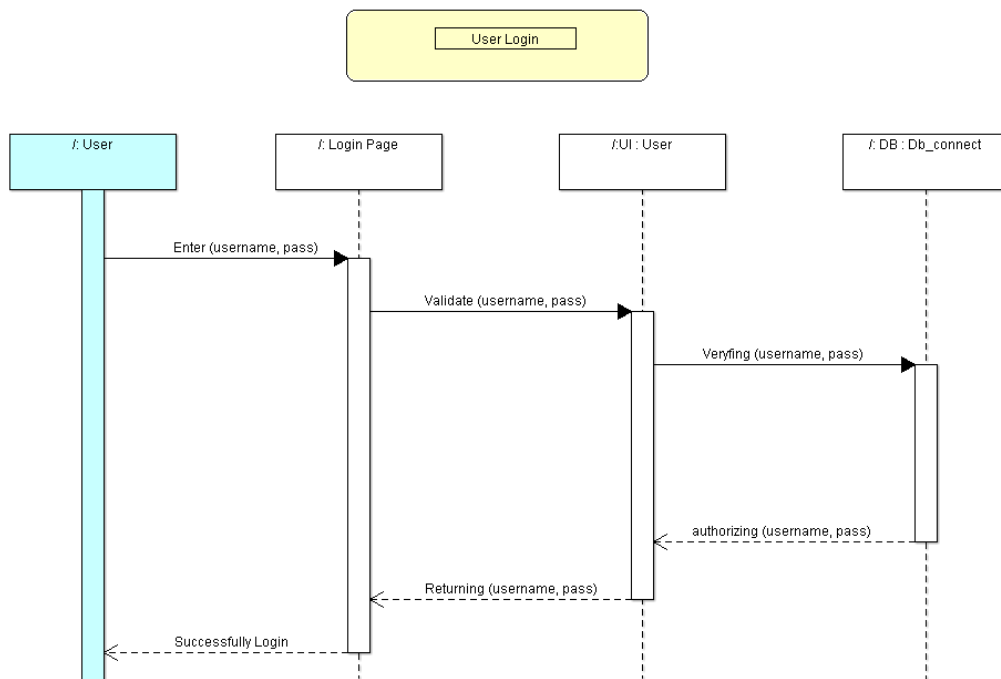


**Figure 5.2.** This figure illustrates the sequence diagram of Job Website

## Scenario 2

→A user must log in to enter the system with username and password.

→If the information entered in the system matches the information in the database correctly, the user enters the system successfully.

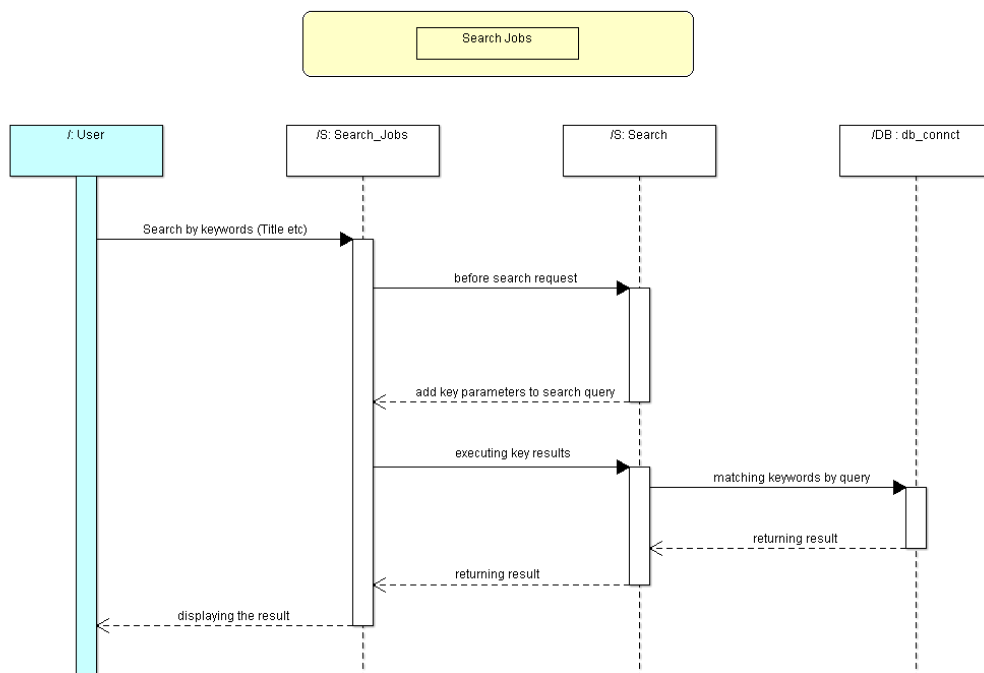


**Figure 5.3.** This figure illustrates the sequence diagram of User Login

### Scenario 3

→A job seeker can search any jobs by entering the first letters, job title to the job, position boxes.

→The matching keywords by query return as a result to the job seeker.

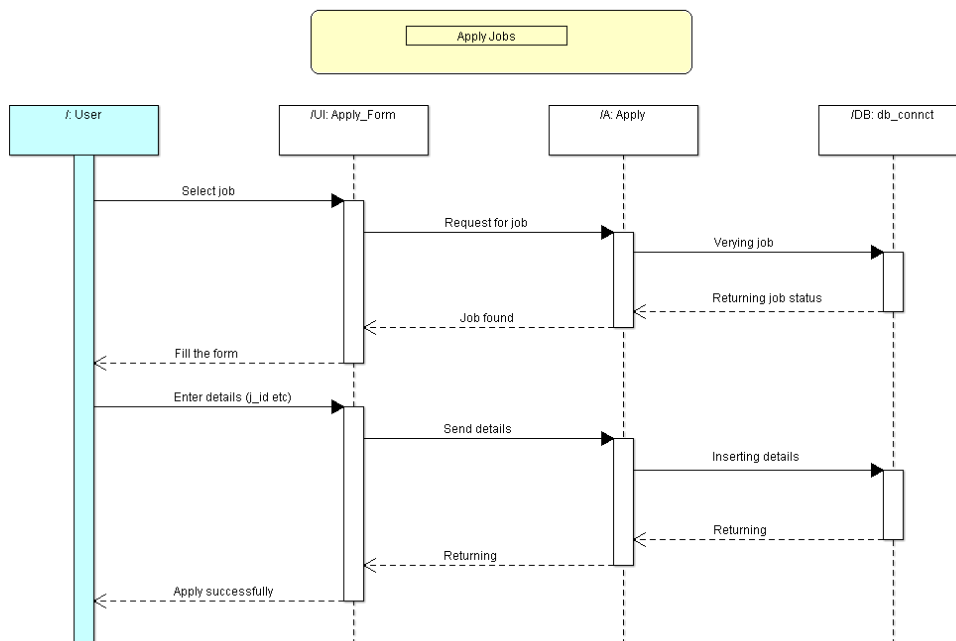


**Figure 5.4.** This figure illustrates the sequence diagram of Search Jobs

#### Scenario 4

→A job seeker can select any jobs and fill the system.

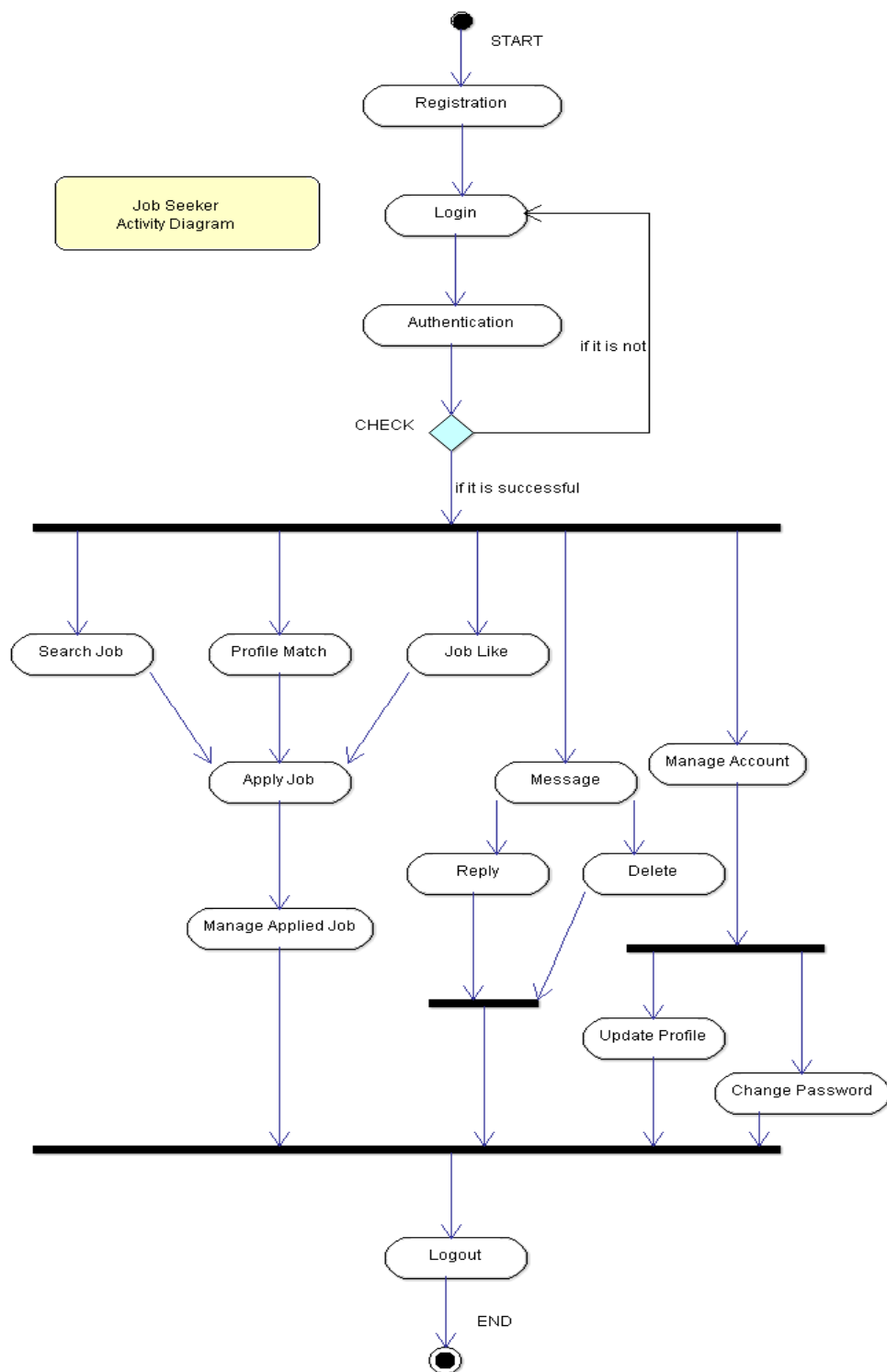
→A job seeker can add details to the system. The system send a feedback successfully.



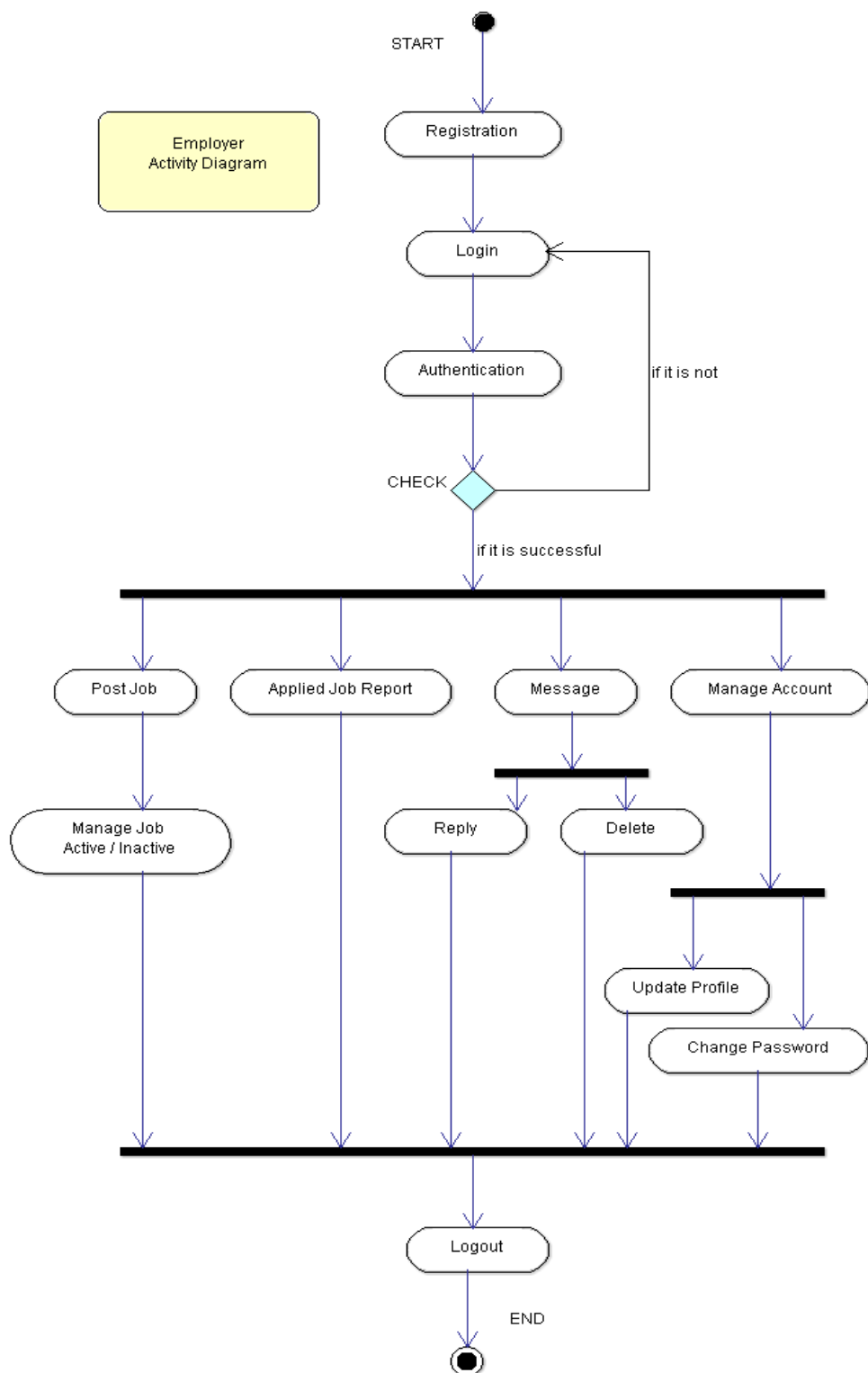
**Figure 5.5.** This figure illustrates the sequence diagram of Apply Jobs



## 5.2.2. Activity Diagram



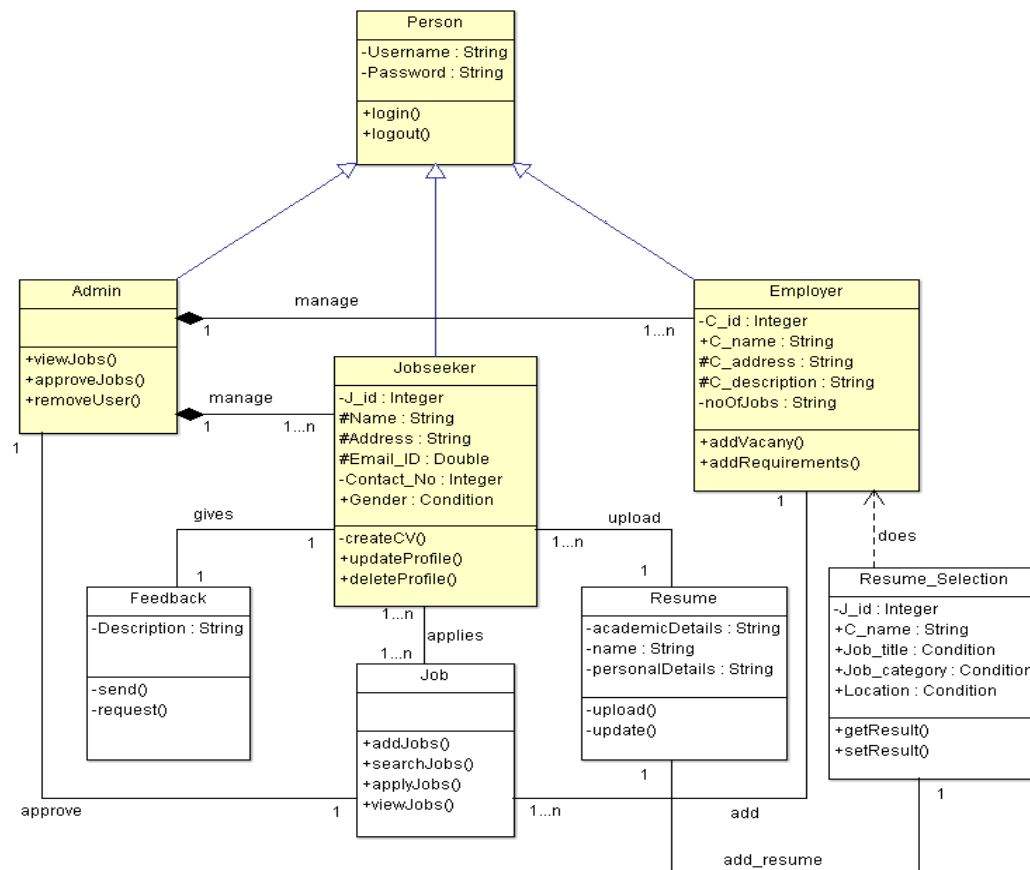
**Figure 5.6.** This figure illustrates the activity diagram of Job Seeker



**Figure 5.7.** This figure illustrates the activity diagram of Employer

## 5.3. Object and Class Model

### 5.3.1. Class Diagram



**Figure 5.8.** This figure illustrates the class diagram of Job Website

#### Person

→Username, Password: The credentials of the user in the website.

→login(String u, String p): u is the username, p is the password. Redirects to the users' home page on successful login.

→logout(): The function to stop communication with the server. Returns void.

## Admin

→viewJobs(): Returns the list of jobs available in the server.

→approveJobs(List <Job> jobs): Validates the jobs in the list. Returns an array of the boolean.

→removeUser(String username): Used to ban a user, the user having “username” is deleted. Returns true on success, false otherwise.

## Jobseeker

→createCV(File myCV): This function is called after the Job Seeker chooses his CV and clicks Submit button. It add a BLOB type to the database.

→updateProfile(): After changing his profile informing and clicking “Submit” button on the “Profile” page this function is called.

→deleteProfile(): This function deletes current information in the database not the account, or we can say it assigns default values.

## Employer

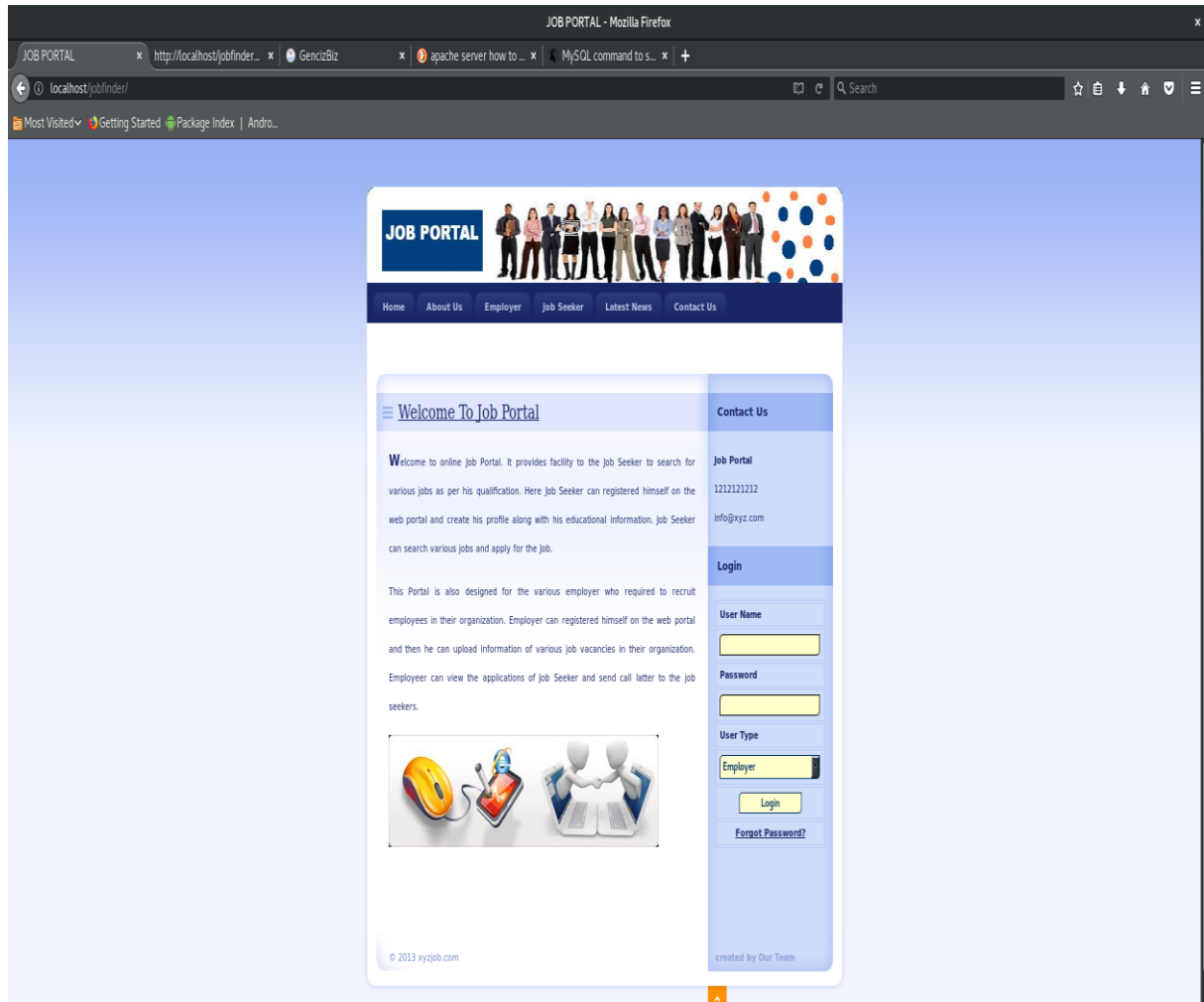
→addVacancy(int days): The number of days that the applied Job Seekers can go to a vacation.

→addRequirements(): Adds the list of requirements needed for the job.

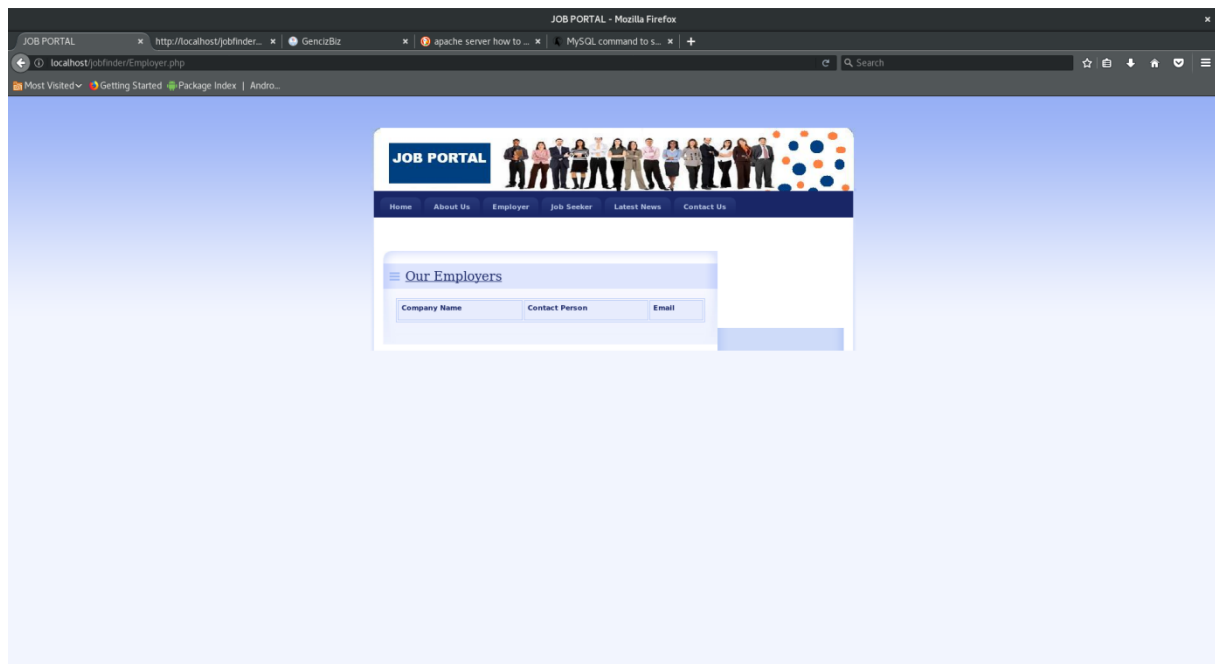
## 6. User Interface

### 6.1. Screen Mock-ups

The following images shows interface of non-logged in users.

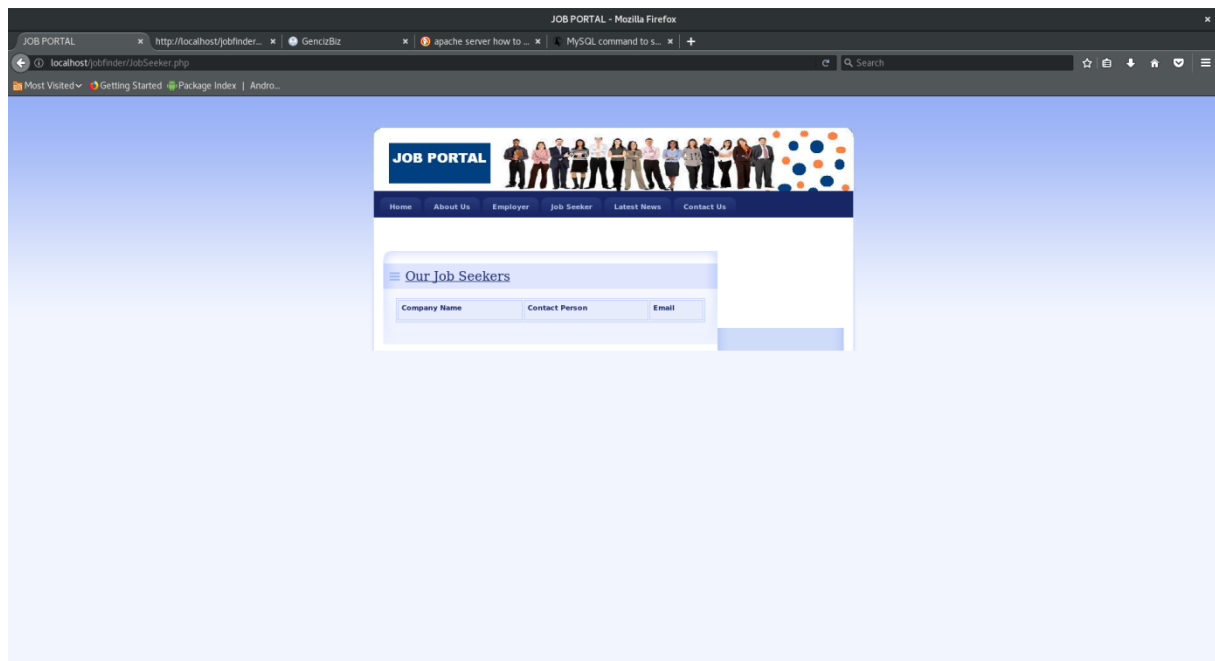


**Figure 6.1.** Home Page for non-logged in users



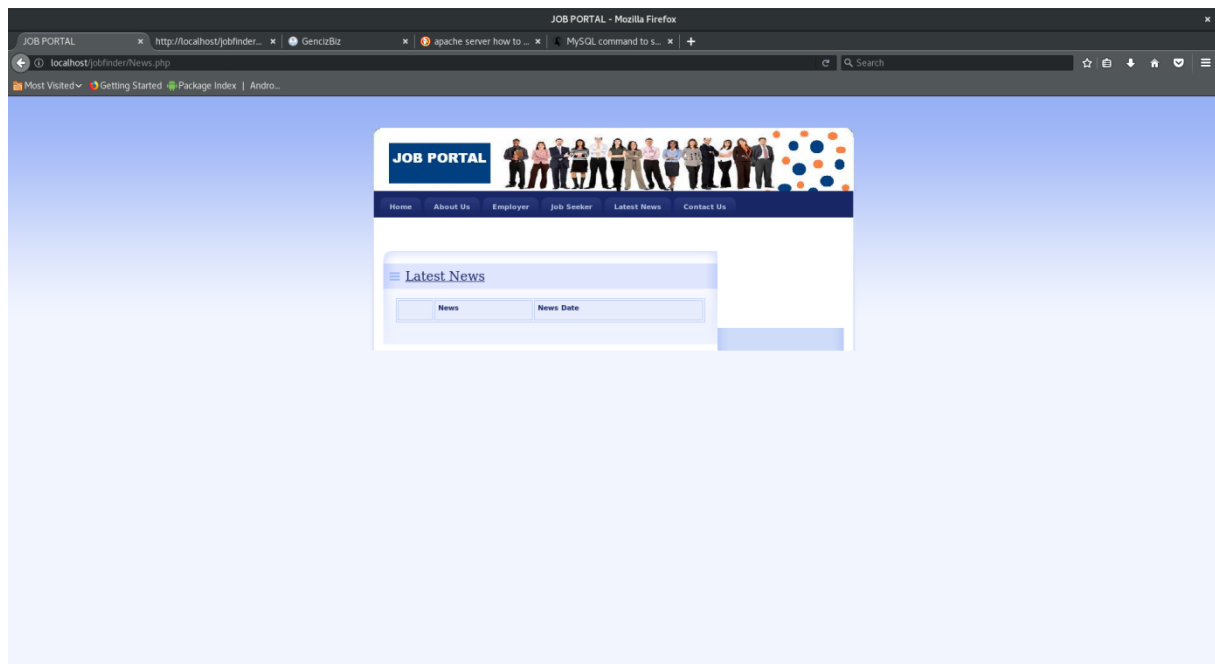
**Figure 6.2.** Employers List Page

→ Even non-logged in users can see the list of current employers who posted jobs.



**Figure 6.3.** Job Seekers List Page

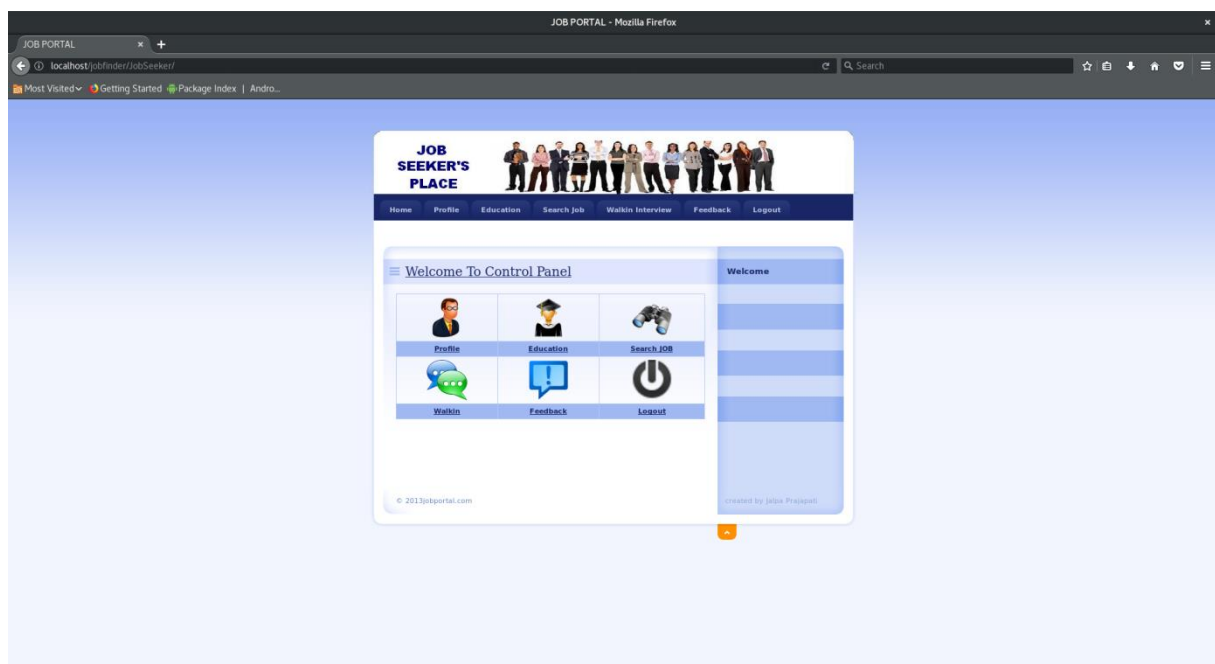
→ Similar to Employers List Page above, non-logged in users can see the list of current Job Seekers looking for a job.



**Figure 6.4.** The Latest News Page

→ In this Page, users can see whether a new job post exists.

### 6.1.1. Job Seeker Pages



**Figure 6.5.** Home Page for Job Seekers

→ Job Seekers directly go to the pages by using the panel on the page.



**Figure 6.6.** Profile Page for Job Seekers

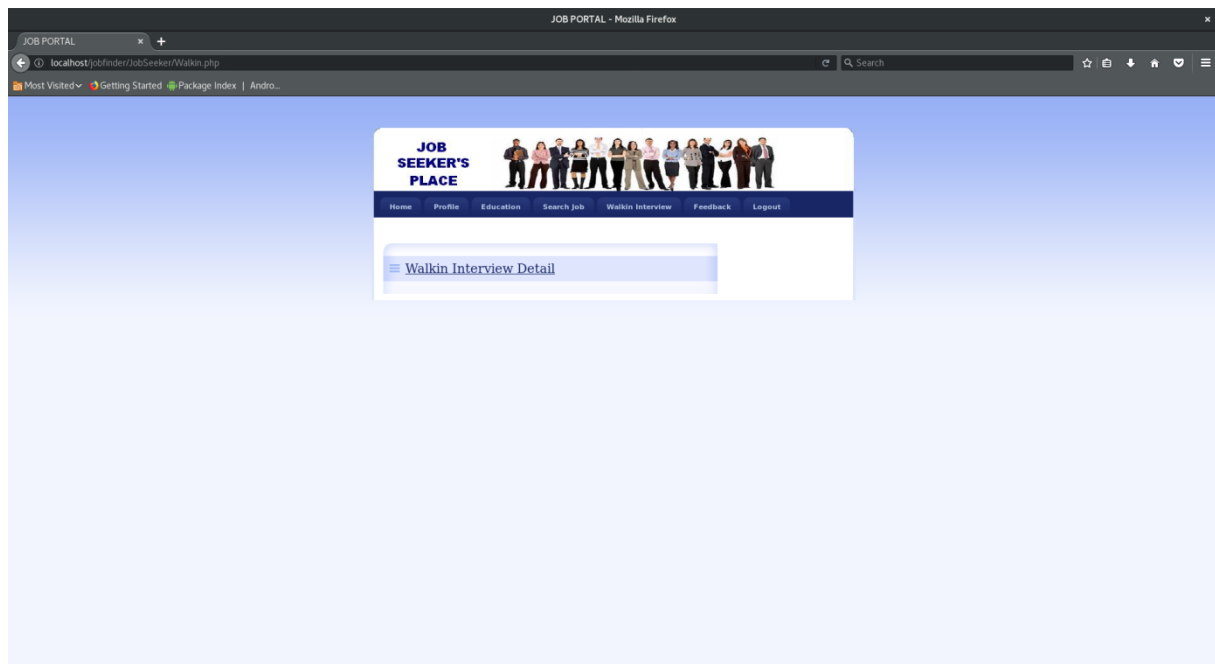
→ In this page, Job Seekers can edit their profile info.



**Figure 6.7.** Education Page for Job Seekers

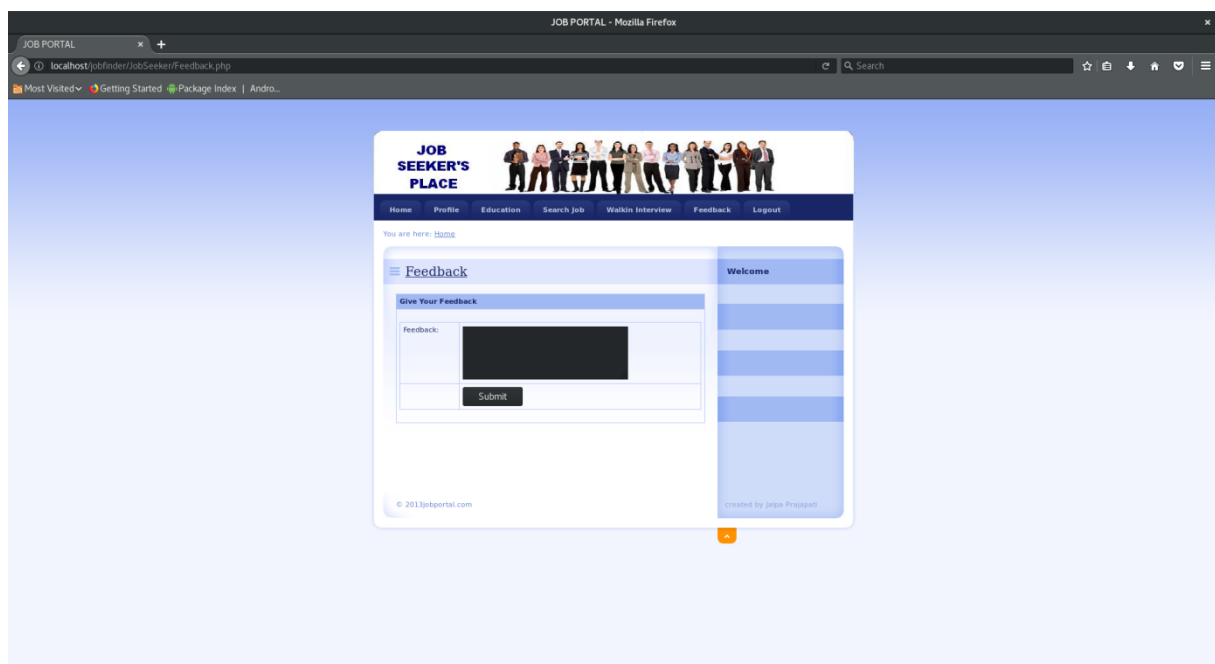
→ In this page, Job Seekers can create a new education info or edit an existing one.





**Figure 6.8.** Walkin Page for Job Seekers

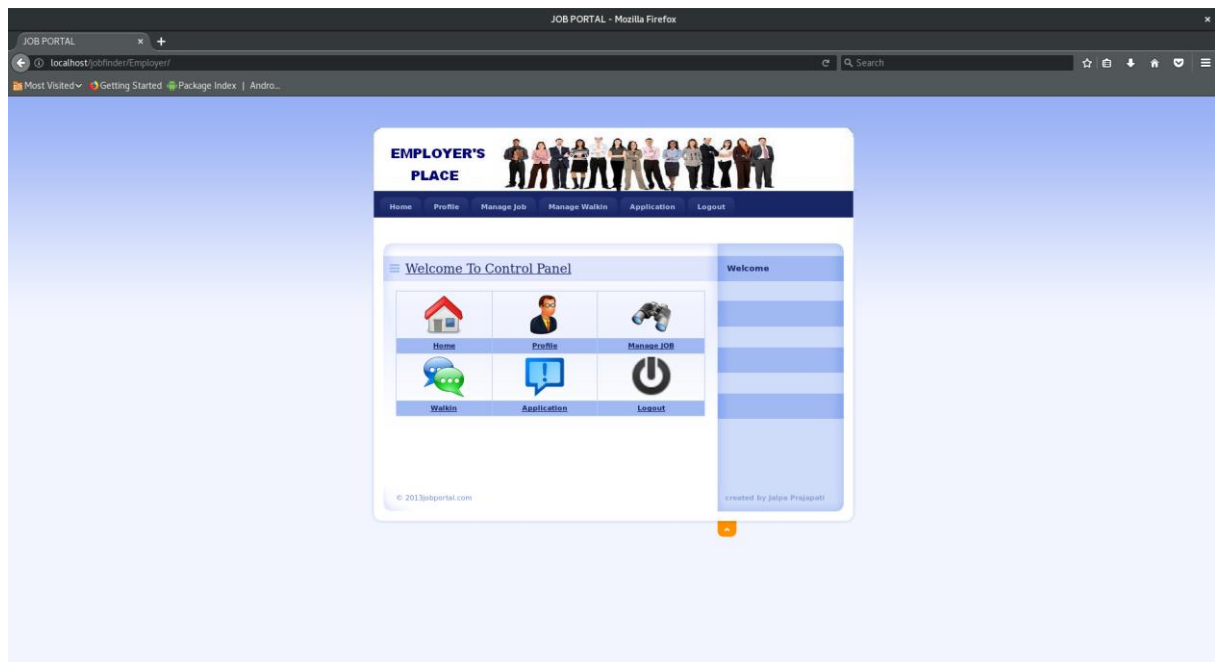
→ This page lists the interview records done so far.



**Figure 6.9.** Feedback Page for Job Seekers

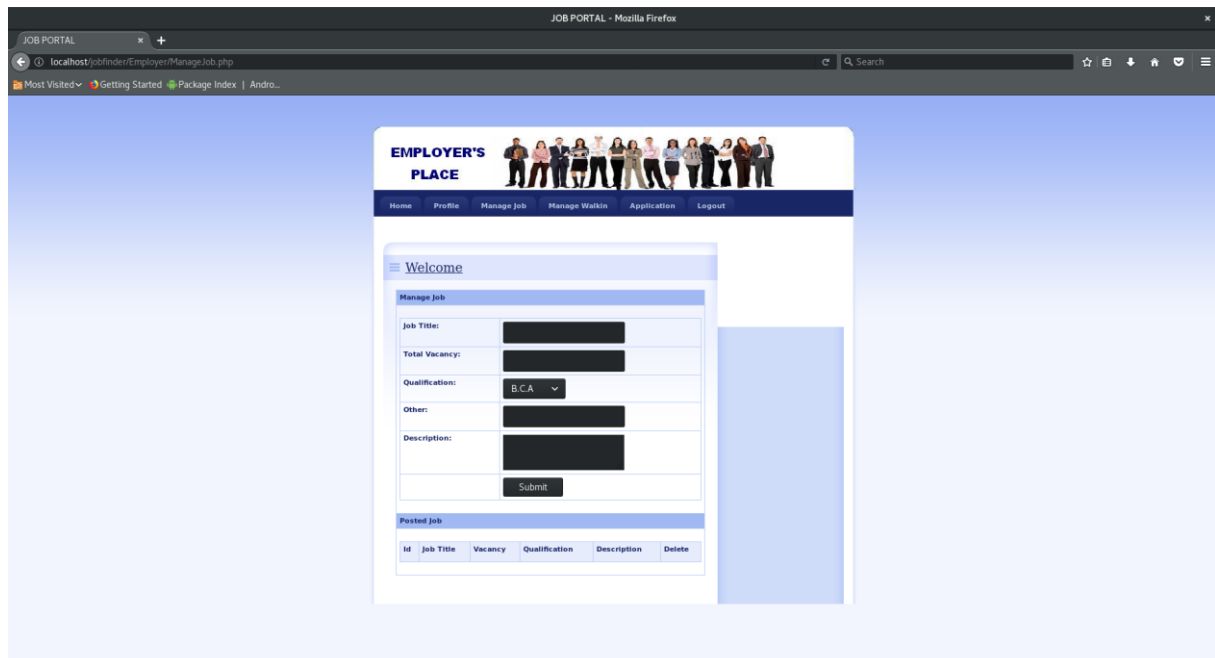
→ After filling the text area and clicking the “Submit” button, they can send feedbacks to the administrators.

## 6.1.2. Employer Pages



**Figure 6.10.** Home Page for Employers

→ Like in the Job Seeker home page, the Employer can use the panel to redirect to the pages.



**Figure 6.11.** Manage Job Page for Employers

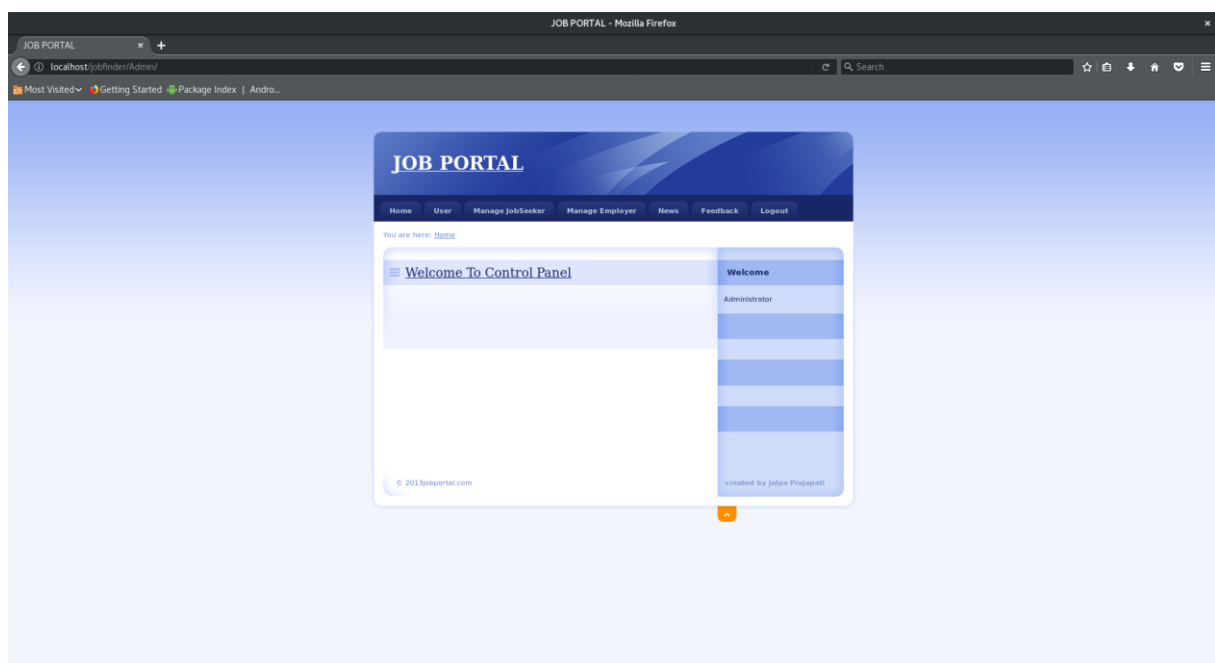
→ The Employer can create a new job post or edit the existing ones.



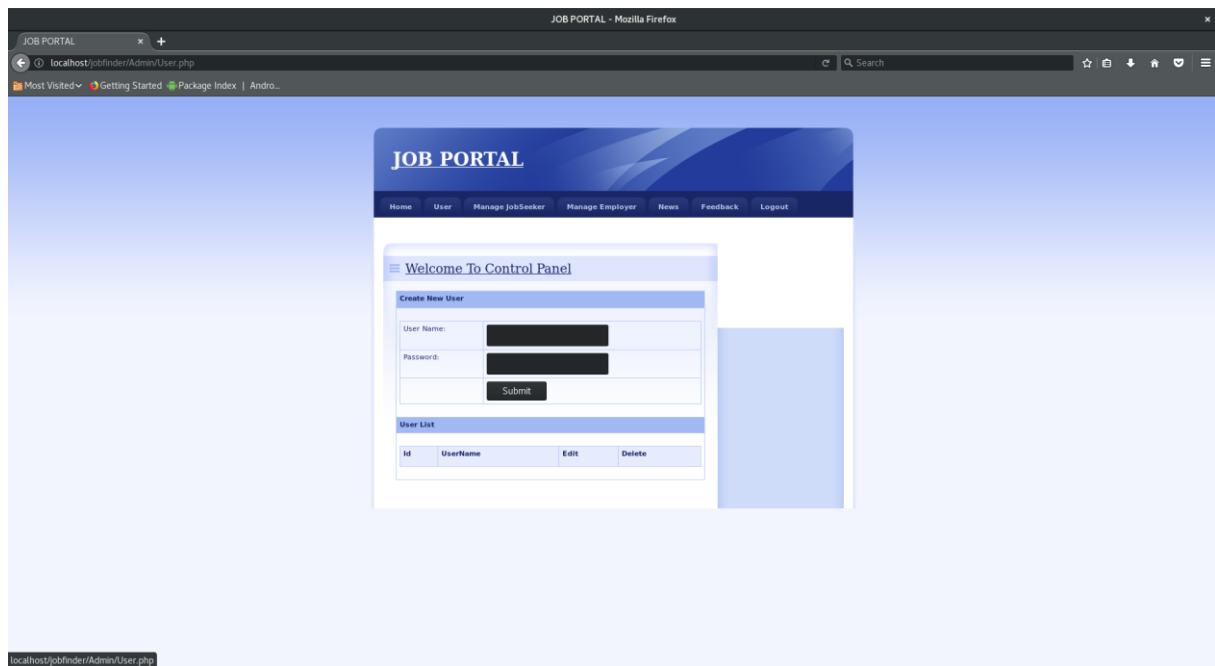
**Figure 6.12.** Manage Walking Page for Employers

→ This page is similar to the one above. The Employer can create a new interview or list the existing ones.

### 6.1.3. Administrator Pages

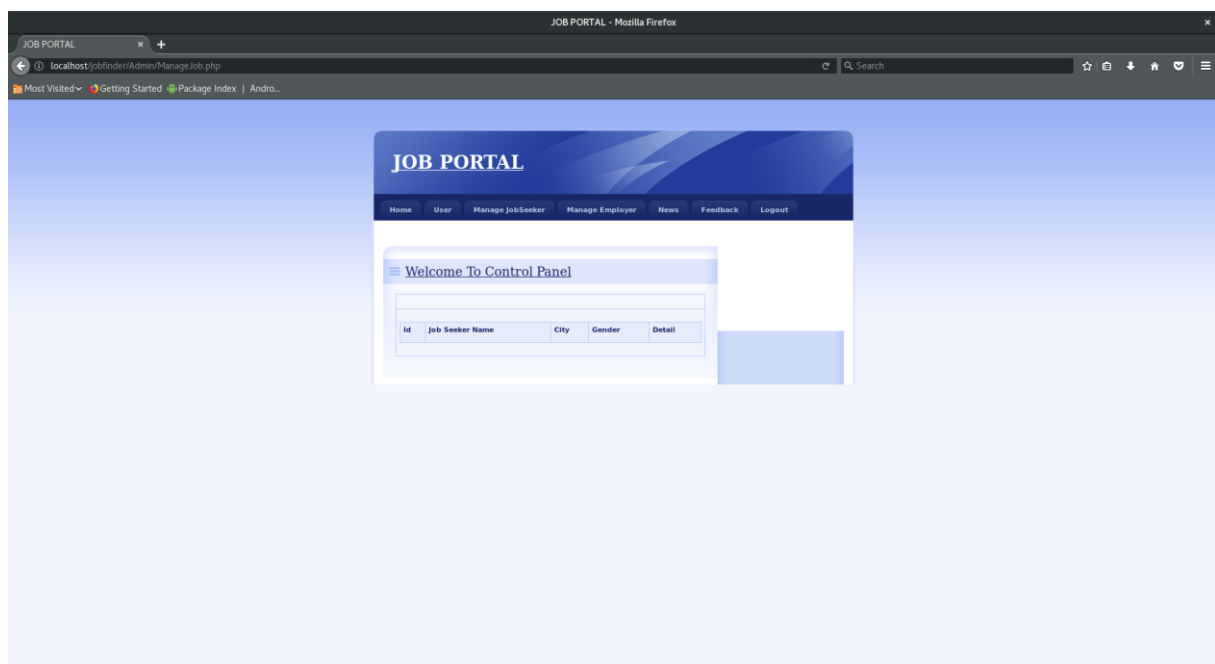


**Figure 6.13.** Home Page for Administrators



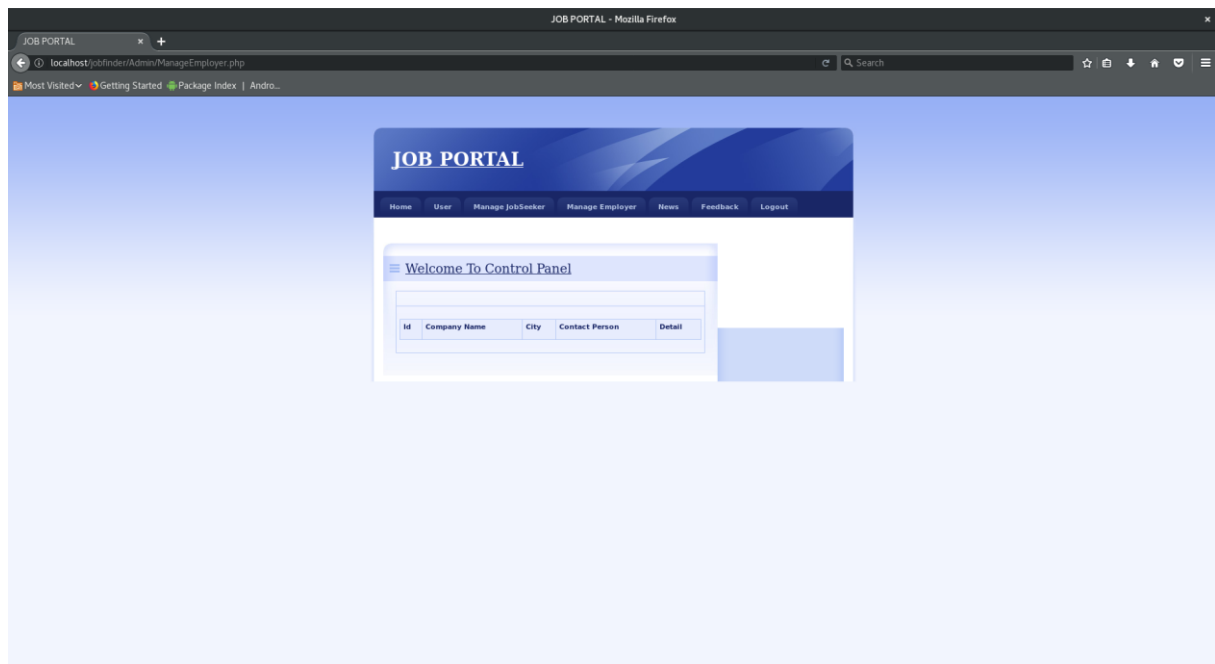
**Figure 6.14.** User Page for Administrators

→ Administrators can create new users or edit existing ones. User type doesn't matter.



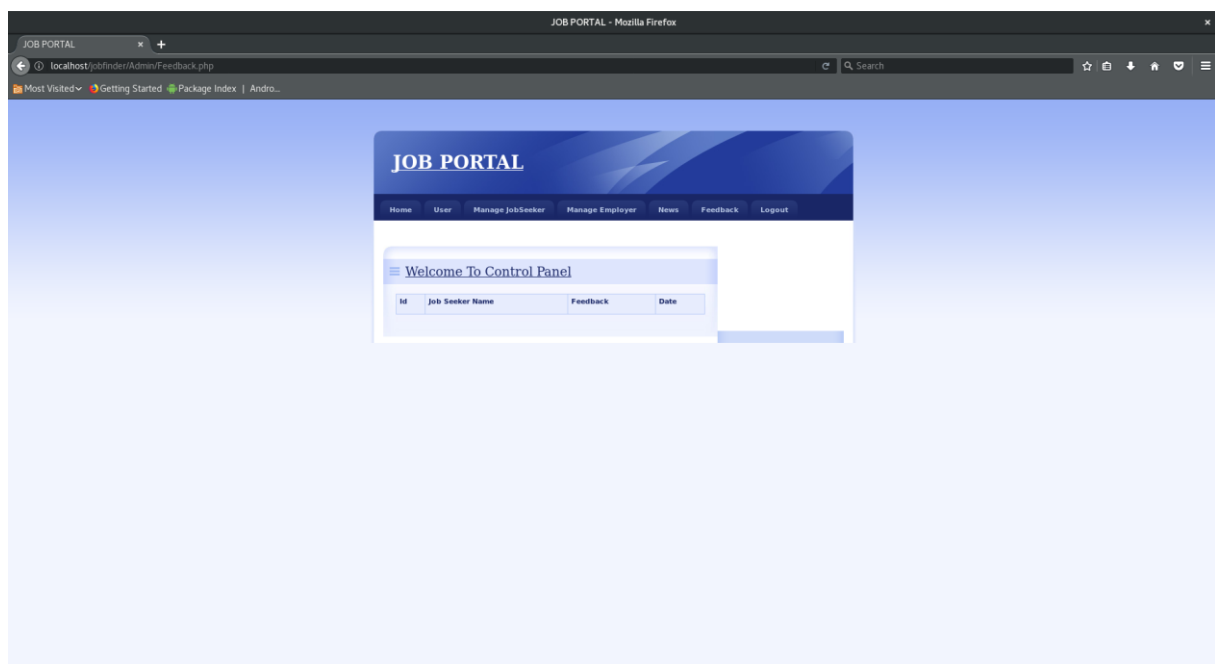
**Figure 6.15.** Manage Job Seeker Page for Administrators

→ Administrators can edit existing Job Seekers in the list.



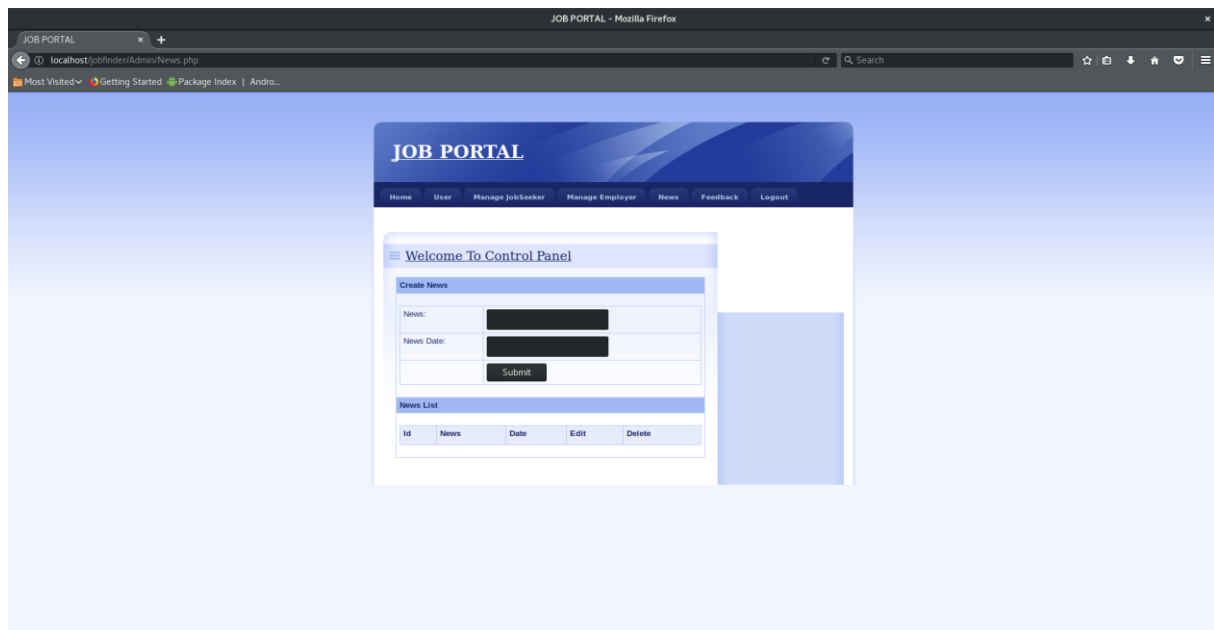
**Figure 6.16.** Manage Employer Page for Administrators

→ Administrators can edit existing Employers in this page.



**Figure 6.17.** Feedback Page for Administrators

→ Administrators can see the feedback came from users.



**Figure 6.18.** News Page for Administrators

→ Administrators can submit new posts available to every user.

#### 6.1.4. Registration Pages

The screenshot shows a web browser window titled 'Welcome To Job Portal - Mozilla Firefox'. The address bar shows 'localhost/jobfinder/JobSeekerReg.php'. The page has a blue header with the 'JOB PORTAL' logo and a navigation menu with links: Home, About Us, Employer, Job Seeker, Latest News, and Contact Us. The main content area is titled 'Job Seeker Registration Form' and contains a registration form with the following fields: JobSeeker Name, Address, City, Email, Mobile, Qualification (with a dropdown menu showing 'B.C.A'), Other, Gender (with a dropdown menu showing 'Male'), BirthDate, Upload Marshsheet (with a 'Browse...' button and 'No file selected' text), User Name, Password, Security Question (with a dropdown menu showing 'What is Your Pet Name?'), and Answer. There is a 'Submit' button at the bottom of the form. On the right side, there is a 'Contact Us' sidebar with the following information: Job Portal (1212121212, info@xyz.com), a 'Login' section with fields for User Name and Password, a 'User Type' dropdown menu showing 'Employer', and a 'Forgot Password?' link. The footer shows '© 2013 xyzjob.com' and 'created by Our Team'.

**Figure 6.19.** Registration Page for Job Seekers

→ Job Seekers are added to the database after they filled their information in correct format and clicking the “Submit” button.

The screenshot shows a web browser window titled 'Job Portal - Mozilla Firefox'. The address bar shows 'localhost/jobfinder/EmployerReg.php'. The page features a header with 'JOB PORTAL' and a navigation menu. The main content area displays the 'Employer Registration Form' with various input fields and a 'Submit' button. A sidebar on the right contains 'Contact Us' information and a 'Login' section.

**Figure 6.20.** Registration Page for Employers

→Employers are added to the database after they filled their information in correct format and clicking the “Submit” button.

### 6.1.5. Contact Us

The screenshot shows a web browser window titled 'JOB PORTAL - Mozilla Firefox'. The address bar shows 'localhost/jobfinder/ContactUs.php'. The page features a header with 'JOB PORTAL' and a navigation menu. The main content area displays the 'Contact Us' form with various input fields. A sidebar on the right contains 'Contact Us' information and a 'Login' section. The footer shows copyright information and the creator's name.

**Figure 6.21.** Contact Us Page

→By the help of the information on this page users can contact with the creators of this website.

## 6.1.6. About Us



**Figure 6.22.** About Us Page

→ This page tells what is our site made.



## **7. Conclusion**

It has been a great pleasure for us to work on this exciting and challenging Project. This Project proved good for us as it provided practical knowledge of programming in PHP, HTML and JavaScript. It also provides knowledge about the latest technology used in developing web enabled application and client server technology that will be great demand in future. This will provide better opportunities and guidance in future in developing projects independently.

## **8. References**

- ArgoUML Documentation
- PHP Manuel in English
- A Tutorial to Create Websites with PHP
- HTML Tutorial
- JavaScript Tutorial
- XML Tutorial