Governors State University

OPUS Open Portal to University Scholarship

Spring 2020

Online Career Center

Sravya Reddy Patlola

ONLINE CAREER CENTER

By

Sravya Reddy Patlola
B.TECH, GITAM UNIVERSITY, 2016

GRADUATECAPSTONE SEMINAR PROJECT

Submitted in partial fulfillment of the requirements

For the Degree of Master of Science,

With a Major in Computer Science

Governors State University

University Park, IL 60484

2020

ABSTRACT

Online Career Centre is an employment-oriented portal that brings recruiters and jobseekers to a common platform. The services provided in this application work as a professional network for employers and job seekers. Employers post vacancies with a brief overview of the job description along with the required skill set. This information can be viewed by the job seekers and they can apply for the jobs.

Job seekers will be getting jobs related information, employers will be posting their job requirements information and. This website gives employers the ease of conducting most of their HR operations online and provides privacy and security to the job seekers and employers by providing individual login credentials to every user. The application is managed by the Admin who takes care of the operations that are being done within the application. On the other hand, it helps candidates to explore career opportunities, job trends and apply to the jobs directly with the help of this application.

It allows the jobseekers to create a profile by providing their technical skills, soft skills, academic background, certifications or any related material. They can also upload a resume on the website, seek career advice and set up job alerts according to their requirements. Any candidate can search for job listings depending on the type of job, organization, location or desired salary.

<u>Software Requirements:</u>
Operating System: Windows 7 or later
User Interface: HTML, CSS, Bootstrap
Scripting: SQL Server
Programming Language: Visual Studio .NET 2017 Professional or later
Database: SQL server management studio

Table of Contents

1. Project Description

Online Career Center is a web application which has different roles like job seeker, admin, employee, organization etc. This is a web application which is developed to satisfy the needs of job seekers and the employers.

To implement the above mentioned operations, we have used a database which supports all operations. All the related information is clustered together and then attributes are identified. These attributes are grouped together to generate the tables. This database has been created by using the principles of database management in eliminating the dependency and redundancy in the data.

In order to interact with the application, better user interfaces are designed which helps people to learn the operations in a simple manner. People who need a job can view this application to find the jobs from different companies. This is one stop solution for both the employer and job seekers. Application provides the interfaces to the job seeker and employer of the organization to enter the details and these details will be saved in the related data table. If the job seeker is new to our web application, application will allow them to register by entering details and this data is stored in the job seeker table. Companies can post their requirements to recruit highly talented people, these job requirements will be viewed by the people who visit the application. This site will help many of the companies to publish their job requirements, if employer of the organization wants to post their job in portal, like the job seekers, they will have to register with the required details and these details will be stored in the related database. After that, the employer will be able to post their organization's vacancies and job requirements through portal. All posted jobs will visible to the job seekers.

There will be an administrator who will be managing all the operations of this application. Admin has full rights on the application, he can view all the companies registered, their posted jobs, and the candidates who have applied for those jobs. He can also delete a company or a posted job, or the candidate's application for a particular job.

1.1 Competitive Information

There are various online job portal websites like Naukri.com, LinkedIn.com, indeed.com, etc. against which our application will be competing. The following features of our application give us an edge over the above mentioned competitors:

- Application environment is very easy to operate and is user friendly.

- It is satisfying all the needs of job seekers and the employers.

- Provides easy communication between the employer and the job seekers to compete with the other applications.

1.2 Relationship to Other Applications/Projects

This project does not directly relate to any other application. It simply gathers unique information from different users and operates as per their functionalities. It might use Autofill feature of the browser if it is enabled on the user's device.

1.3 Assumptions and Dependencies

- **Assumptions:**

a. Assuming that behavior of the jobseeker will not be changed dynamically.

b. If messaging service is provided to the mobile, then it may attract a greater number of users.

c. Jobseekers expect relevant services as per their need.

d. Assuming that information provided by both, the job seekers and the employers is correct.

- **Dependencies:**

a. Jobseekers need to register with application, without registration jobseekers can only search about the jobs.

b. To posts the jobs by the employer, he needs to register with the application.

1.4. Future Enhancements

Following are the future enhancements of the application

- Implementing the Google Maps in the application, to provide the exact location of the organization to the job seeker.
- It should be made responsive, so that it can be used in any device.
- We can enhance the application by adding on-time notifications to the job seekers.

1.5   Definitions and Acronyms

SQL: Structured Query Language

LAN: Local Area Network

PAN: Personal Area Network

2   Project Technical Description

Online Career Center is hosted on the web server and using the browser and domain name one can connect to the application. This application is used by different groups of people such as job seekers, employers and administrator. Since this is a web application, it can be accessed from any part of the world. Security and protection are provided so that unauthorized access is prevented on this application. Following are the operations that are implemented based on the type of the user.

Job Seeker Dashboard: Registered job seekers will get access to the dashboard and he/she can have the different features that are provided with the application. Unregistered job seekers will not able to access the features of the application. He can only search for the jobs on the home page of the website but cannot apply for any of these jobs until he signs up.

Employer Dashboard: Employer can login into the application after registering the account and is then provided with dashboard. By using the services provided in the dashboard, employer will be doing operations like posting the job requirements, communicating with the applicants, etc.

Admin Console: Admin will be having more privileges when compared to the other two users. Admin manages the web application and can access the application by entering the high security password. Admin can view the profiles and activities of all the users and can delete an account, a job posted or an application for a job.

Technical requirements:

- Operating system: Windows 7 or later.
- Database: SQL Server Management Studio 2014
- Programming Language: C#
- User Interface: HTML, CSS, Bootstrap

2.1   Application Architecture
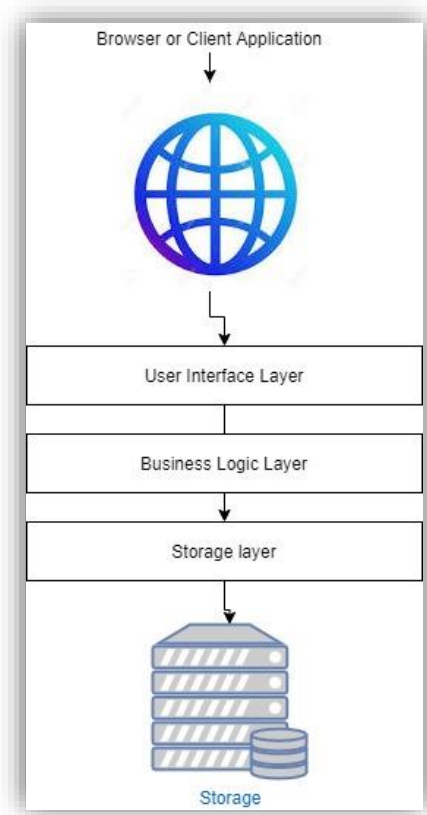
**Figure 1: Architecture of Online Career Centre Application**

2.2 Application Information flows

Following Diagram helps the user to know the application flow.

Steps:

1. User opens the application in the browser.

2. A user can go through the application without registration but he/she can't perform any operations.

3. If user is a job seeker or employer, then he/she will have to register accordingly.

4. After registration, they can log into the application. Based on the type of the user, he/she will be allowed to do the operations.

5. After doing the intended operations, he/she should logout from the application.
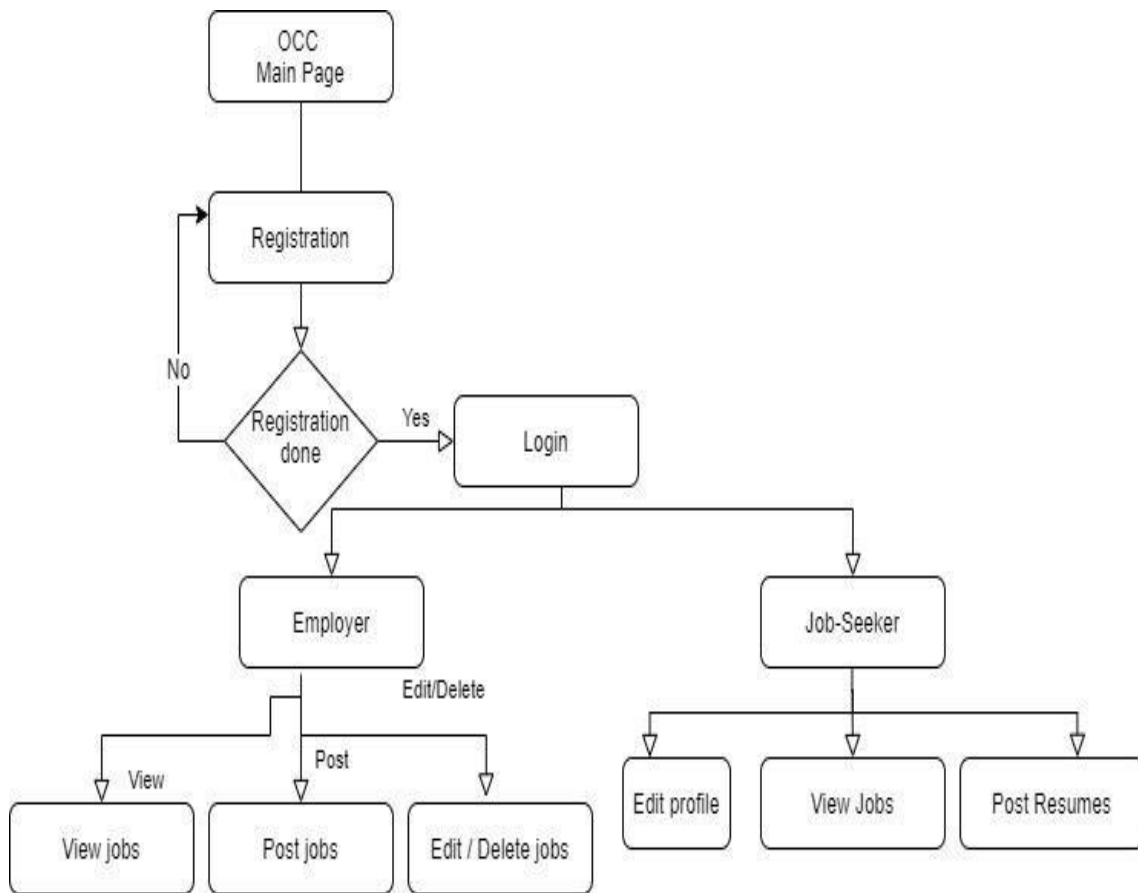
Figure 2: Application Information flow

2.3 Interactions with other Projects (if Any)

No interactions with other projects.

2.4 Interactions with other Applications

Currently there are no interactions with the other applications.

2.5 Capabilities

a)   Jobseeker registration

b)   Jobseeker login

c)   Search jobs

d)   Apply job

e)   Find organization details

f)   Employer registration

g)   Employee login

h)   Post jobs

i)   Modify posted jobs

j)   Update details

k)   Managing employees

2.6 Risk Assessment and Management

While developing the application, the developer needs to identify the risks. If these risks are not identified in early stages, it can result in failure of the application in the near future. Identifying risks in early stages saves both money and time. By early risk assessment and use of risk response strategies one would be able to mitigate the impact of the risk.

These are few points that should be considered.

- We need to check whether data is being stored in the corresponding tables in the database. To know this, we need to apply database testing. If the expected result is achieved, then there is no risk. Developer needs to check the table for the database operations which are performed to make sure everything is in order.

- Application should be implemented in sequential process.

- All the error detection and corrections should be applied while implementing application.

- Check whether all the requirements are met during development phase by looking at the requirements specification document.

3 Project Requirements

3.1 Identification of Requirements

The application that we are developing is not a revolution in its field but we are trying to get new features into the application so that we can target a specific group of individuals and help them with our application. The first phase of the development model is generating the requirements document. Requirements are divided into functional and non-functional requirements. These requirements are gathered based on the operations that are being done by the users of the application.

By using SMART criteria, the following requirements are identified

a) Admin: Manages the whole application. Following are the operations.

- Login
- View/Delete posted jobs
- Modify the post
- View/Delete applicants
- View/Delete a job seekers application for a posted job
- Managing everything

b) Job Seeker: He is the most vital user of the application, around which the entire application is designed. Here are some operations he can perform.

- Register
- Login
- Search job
- Apply for a job
- Ask questions
- View answers

c) Employer: An organization can easily find fruitful employees by using this application. Employer has access to following operations:

- Register
- Login
- Post jobs
- Answer the questions
- Modify jobs
- View applicants

3.2 Operations, Administration, Maintenance and Provisioning (OAM&P)

In this section, different information like data backup, fault recovery, routine maintenance is explained.

User Data Backup: As the application is having the centralized database which has good storage capacity, there is no need for the user to maintain a backup. Users can view the information of the operations which has been done by him/her. This information can be stored personally by user.

Fault Recovery: If the user unknowingly does any operation and if he wants to undo the operation, then system should provide such facility to the user. If the user pressed the delete option unknowingly then it should ask for confirmation to perform the delete operation or not.

Routine Maintenance: Every user is provided with their dashboards. Different services are provided to the users in the dashboard. Users can perform operations accordingly. If they are not able to access any operation, they can contact the admin and let him/her know the issue. Admin will take care of such issues by consulting the technical department.

3.3 Security and Fraud Prevention

Online Career Center is implemented with protection and security features. While users are logging into web application, system validates whether he/she is the right person or not. If he/she is an authorized person, then they will be permitted to access their main page. User name and password protection is applied within the application.

Another security strategy implemented in this application is levels of data abstraction, where a user logged into the application can perform only his operation but can't view all the data.

3.4   Release and Transition Plan

From the start of the project to the end of the project, how the project is implemented is presented in this section. A detailed transition schedule is provided which makes us understand how the project was implemented.

Developed project will be deployed onto one of the web servers, domain name registration should be done to identify the application which is deployed on the web. Every time when there are new updates in the application then the same will be updated in the web servers, through which all the users will be getting the updated services.

Sl. No	Process done	No. of. Days	Start date	End date	status
1	Requirements Phase	10 days	1/26/2020	2/06/2020	completed
2	UML design	15 days	2/06/2020	2/21/2020	completed
4	UI design	15 days	2/21/2020	3/06/2020	completed
3	implementation	30 days	3/06/2020	4/06/2020	completed
4	Testing	5 days	4/06/2020	4/11/2020	Completed.
5	Report writing	10 days	4/11/2020	4/21/2020	completed
6	Project closure	2 days	4/21/2020	4/23/2020	Not completed

4 *Project Design Description*

Given project is carefully designed considering the project requirements specification. All the requirements are specified in detail in this section.

UML diagram

UML diagrams are used to represent the requirements in an understandable way. By using the use-case diagram, one can understand the operations of each user, flow of the operations, sequence of the events that will be occurring in the operations etc. These diagrams help the developer to implement the requirements in an easier way.

Use-Case diagram:

This is a graphic depiction of the interactions between the elements of a system.
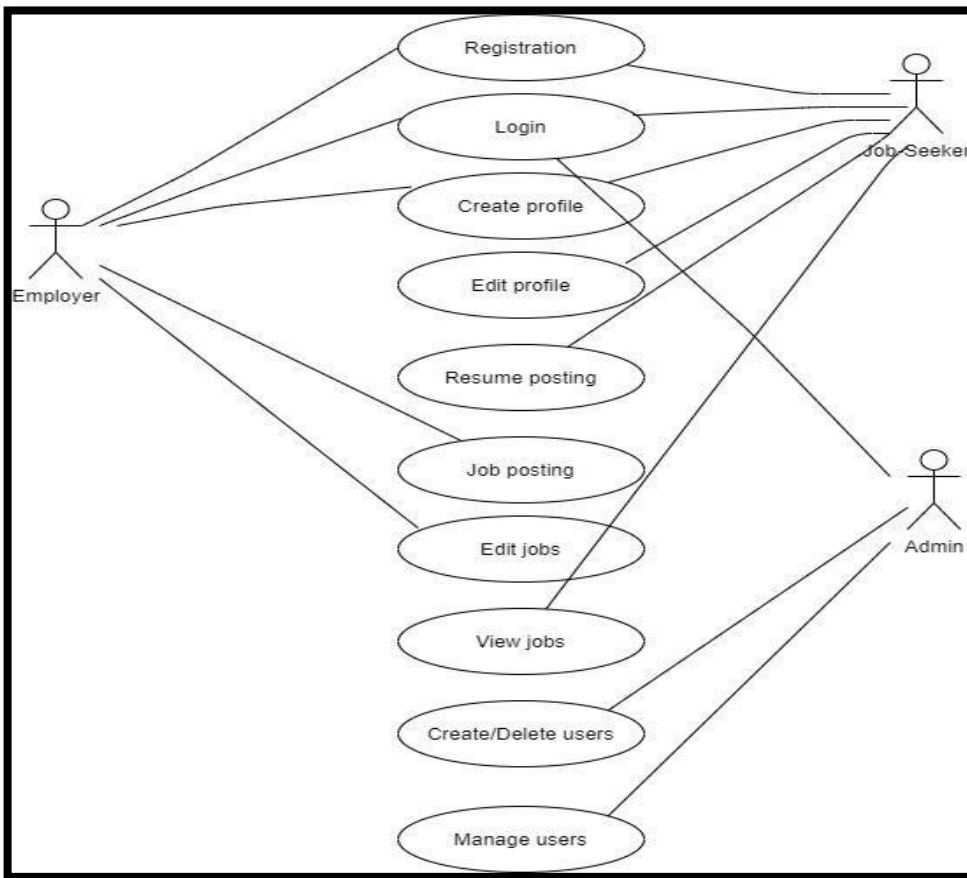
Figure 3: Use-Case diagram

Sequence diagrams:

These are interaction diagrams which show how the operations are carried out.

Job Seeker:
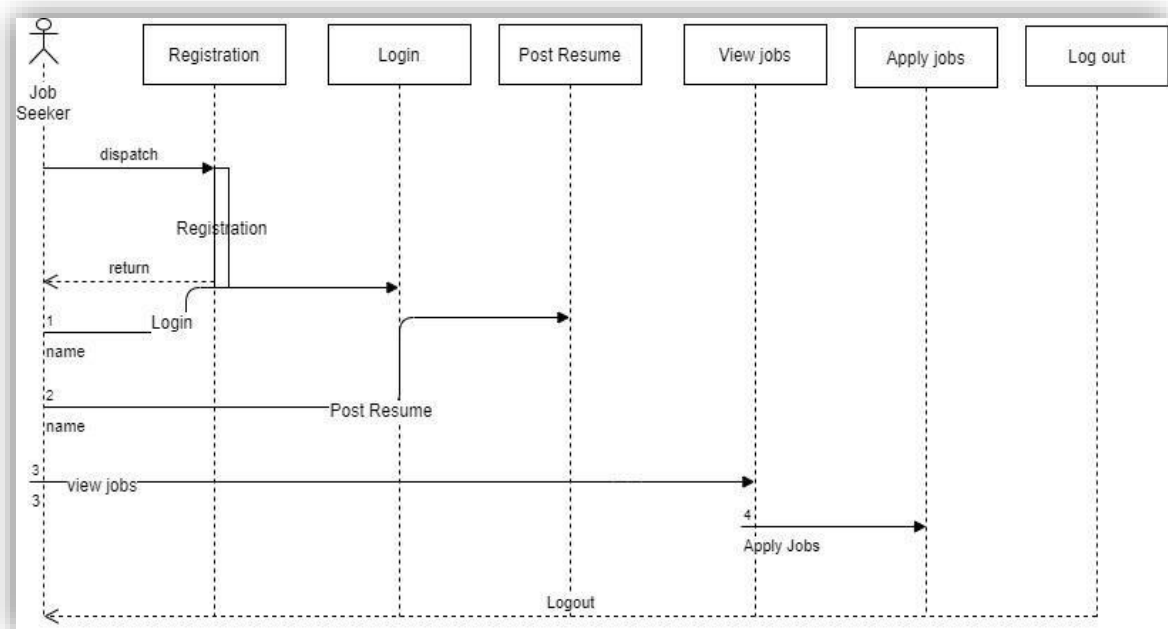
Figure 4: Job Seeker Sequence diagram

Employer:
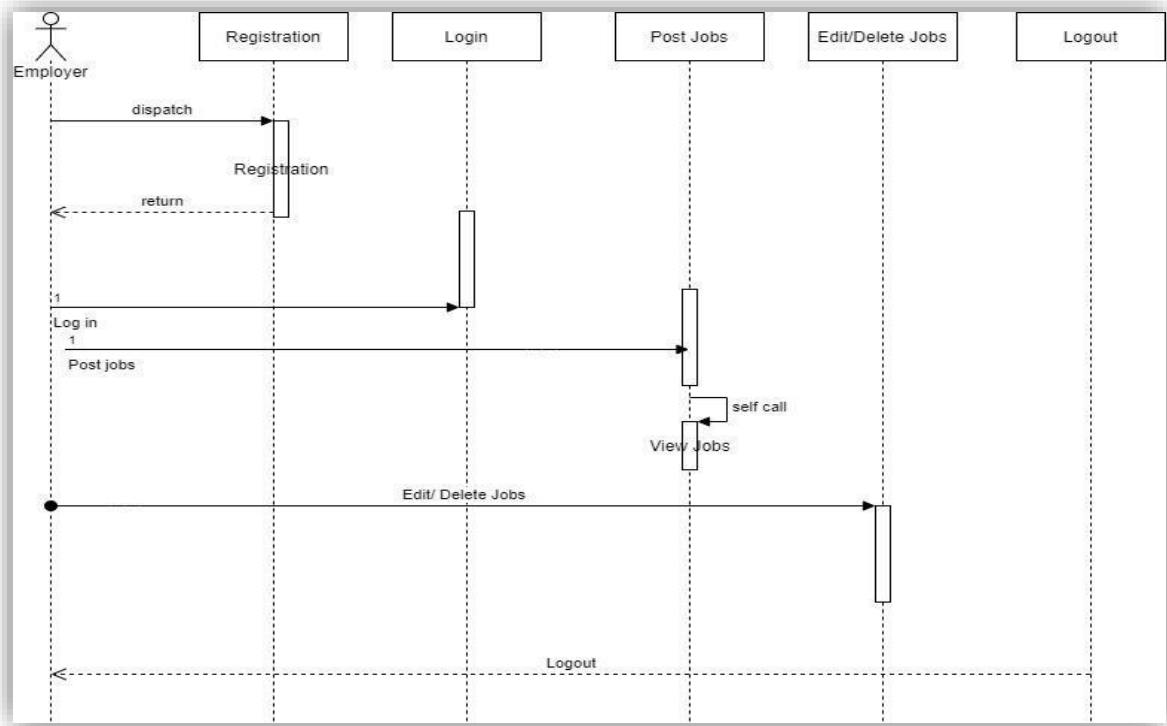
Figure 5: Employer Sequence diagram

Administrator:
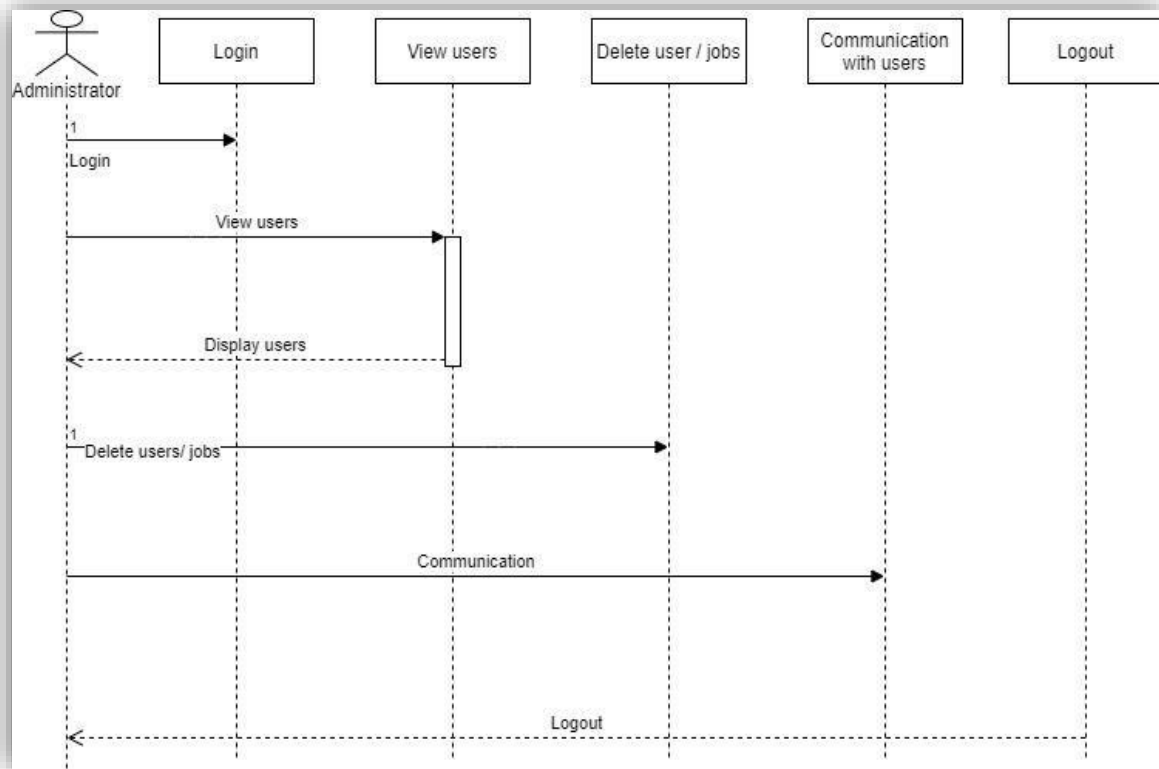
Figure 6: Administrator Sequence diagram

Database design:
  ➢ Jobseeker Registration:

➢ Applying jobs

Column Name	Data Type	Allow Nulls
Aid	int	☐
FullName	varchar(50)	☑
Address	varchar(MAX)	☑
Contactno	varchar(50)	☑
Emailid	varchar(50)	☑
Email	varchar(50)	☑
Skills	varchar(MAX)	☑
Qualification	varchar(50)	☑
Name	varchar(50)	☑
Type	varchar(50)	☑
Data	varbinary(MAX)	☑
CompanyId	varchar(50)	☑

➢ Applied history of jobseeker

Column Name	Data Type	Allow Nulls
Id	int	☐
CompanyId	varchar(50)	☑
Email	varchar(50)	☑

➢ Employer registration

Column Name	Data Type	Allow Nulls
EmpId	int	☐
Firstname	varchar(50)	☑
Lastname	varchar(50)	☑
Email	varchar(50)	☐
Password	varchar(50)	☑
BusinessName	varchar(50)	☑
BusinessContactno	varchar(50)	☑

➢ Employer posting jobs

Column Name	Data Type	Allow Nulls
⚿ ComId	int	☐
Title	varchar(50)	☑
Name	varchar(50)	☑
Role	varchar(50)	☑
Keyword	varchar(50)	☑
Classification	varchar(50)	☑
Description	varchar(MAX)	☑
Location	varchar(50)	☑
Email	varchar(50)	☑
CompanyId	varchar(50)	☑

➢ Communication between employer and jobseeker

Column Name	Data Type	Allow Nulls
⚿ Id	int	☐
Email	varchar(50)	☑
Emailid	varchar(50)	☑
Message	varchar(50)	☑
Reply	varchar(50)	☑

➢ Admin login

Column Name	Data Type	Allow Nulls
⚿ Emailid	varchar(50)	☐
Password	varchar(50)	☑

➢ Admin posting jobs

Column Name	Data Type	Allow Nulls
Id	int	☐
Emailid	varchar(50)	☑
Title	varchar(50)	☑
Name	varchar(50)	☑
Role	varchar(50)	☑
Keyword	varchar(50)	☑
Classification	varchar(50)	☑
Description	varchar(MAX)	☑
Location	varchar(50)	☑

➢ Adding employers

Column Name	Data Type	Allow Nulls
EmpId	int	☐
Emailid	varchar(50)	☑
Firstname	varchar(50)	☑
Lastname	varchar(50)	☑
BusinessName	varchar(50)	☑
BusinessContactno	varchar(50)	☑

ERSchema:
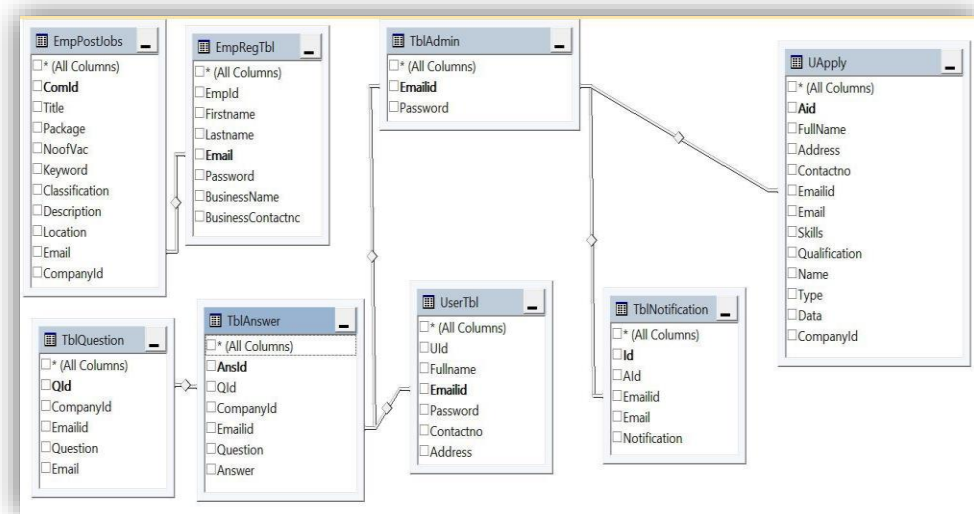
Figure 7: ER Schema

5. Internal/external Interface Impacts and Specification

The application is internally communicating with the SQL server management Studio and Visual Studio. There's an internal interface between the web server and the cache too. Therefore, a simple action like clearing the cache could help troubleshoot certain problems in the basic operations. The application requires internet access for running so if one is using a LAN network instead, they will have to connect to the LAN or PAN network.

6. Design Units Impacts

This application handled the services like hunting jobs, posting jobs and building communication between the job seeker and the employer. This job portal is the place where top companies can give the best job to the candidates with the most potential. Candidates always look for the best recruiters and provide better results when job seeker search for a job, this website provide better results such a Job seekers and they can upload their resume as per the requirement. Another best feature is Job Alerts. This job portal provides regular job alerts to the job seekers.

In old-fashioned way, people showed up at job fairs to network with potential employers with face-to-face interaction. Job fairs have certain employers in one place. Many of the worthiest jobs are never exhibited. They are filled by candidates who learn of them by word of mouth from friends, old colleagues, and ex-bosses. Another option is job postings in the Careers section of the site, which is often listed under "About Us" or "About the Company" on the front page of the company website.

6.1 Functional Area A/Design UnitA

6.1.1. Functional Overview

As stated earlier, there are 3 different types of users who are guaranteed satisfaction pertaining to their employment needs. At the initial stage, all the information has been gathered from these 3 users also.

Job portal involves distinct manners of users. The core users are Job seekers, Employer and Administrator. This job portal encourages user friendly features to make their work easier. So when job seeker or employer visits and accesses anything for the first time, they can do it without even registering but if they want to use any further features, they will need sign up for this portal. As part of the sign up process, user provides their basic information and contact details to create an account on a job portal.

6.1.2. Impacts

Job seeker: Instead of searching the information related to jobs in different sources, people can visit this application and find necessary information. This application also provides a facility to apply from the portal itself and at the same time, they can communicate with the companies as well.

Employer: Most of the companies are facing issues in finding the right talents. These types of applications will be providing the best platform for the employers in finding more people that are compatible with the specified job description. By using this web portal, organizations will be reaching to the unemployed people and finding fresher and experienced people as per their requirements.

Admin: If any of the user, be it a jobseeker or an employer, is not following the rules of the application or even seems suspicious for various reasons, then his account and activities can be deleted by the administrator. Administrator will be having the right to view the list of posted jobs, list of companies; he will be having the right to delete from the application under applicable circumstances.

After implementing this application, searching for jobs on the websites of individual organizations would be a passé. Searching for a better job has been made very easy with this application. Finding suitable employs is made very easy for the employer, as the employer would have background information of the candidate, considering they would have already seen the resume and the skill set posted by him on the portal.

6.1.3. Requirements

Functional requirements:

All the requirements are divided into modules so that they will be handled easily without any complexity. This application will be used by the Job-seekers, employers who provide the job information and the administrator who will be maintaining the application.

Jobseeker:

> ➢ Register with in the application.
> ➢ Login to the application
> ➢ Create and edit their profile
> ➢ Post their resume
> ➢ Get the updates of the job
> ➢ Contact the employer
> ➢ View the list of jobs available
> ➢ Logout from the application

Employer:

> ➢ Register in the application
> ➢ Login into the application.
> ➢ should have a dashboard which provides the following facilities like
>> • To post the information related to the job.
>> • Option to edit information about the job.
>> • Delete the jobs posted.
> ➢ logout from the application

Administrator:

> ➢ Login into the application.
> ➢ View the company's information.
> ➢ Block the companies.
> ➢ Delete user-information.
> ➢ Communicate with the employer.
> ➢ Logout from the application.

7. *Open Issues*

While implementing this application we have faced many technical and policy issues. Policy issues were cleared with the help of our supervisor, but we struggled in solving the technical issues. All the issues that were encountered are solved now and application is ready in its due time. Mainly, installation and database issues were raised in the starting of the project. But in the later stages we have overcome all the issues and completed the project as per the plan. As of now, there are no open issues to be addressed.

8. *Acknowledgements*

We are very thankful to the people who have directly or indirectly supported us in completing this project. We'd like to thank our supervisor in providing the information as and when required. We are deeply grateful to the university for providing us with this opportunity in completing the course.

9. *References*

[1]. https://docs.microsoft.com/en-us/dotnet/framework/install/

[2] https://stackify.com/net-core-vs-net-framework/

[3]. Sehgal, V. K., Jagtiani, A., Shah, M., Sharma, A., Jaiswal, A., & Mehta, D. (2013, December). Job portal-A web application for geographically distributed multiple clients. In *2013 1st International Conference on Artificial Intelligence, Modelling and Simulation* (pp. 199-204). IEEE.

[4]. Savaliya, C., &Vanani, V. (2016). Online Job Portal

[5]. Pinjari, M., De, N., Kokne, R., Siddiqui, A., &Chitre, D. (2019). ONLINE JOB PORTAL

[6]. Jayswal, M., Shukla, K., &Heda, N. (2015). Issues and Uses of Online Job Portals: A Comparative Study from the Perspective of Recruitment Consultants in Gujarat. *Prabandhan: Indian Journal of Management*, *8*(5), 25-35.

[7]. Venaik, A., & Sinha, S. (2018). Factors affecting students perception towards e-recruitment: A study of naukri. com. *Journal of Global Information and Business Strategy*, *10*(1), 44-48.

[8] Wadhawan, S., & Sinha, S. Factors Influencing Young Job Seekers Perception towards Job Portals.

10. *Appendices*

User Interfaces:

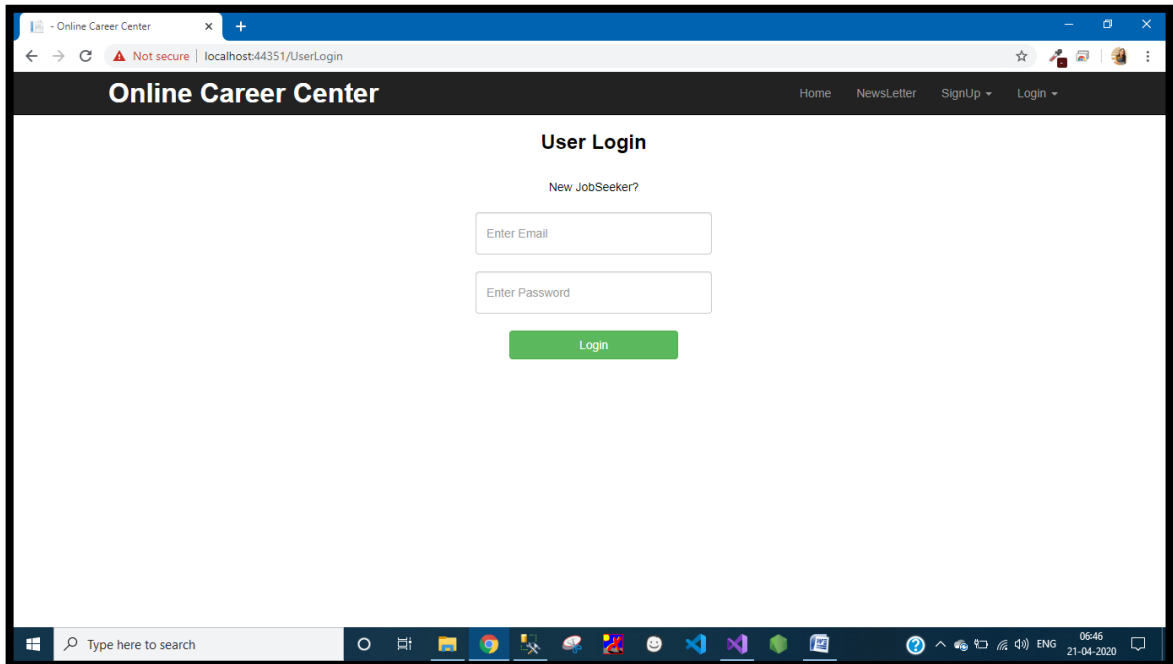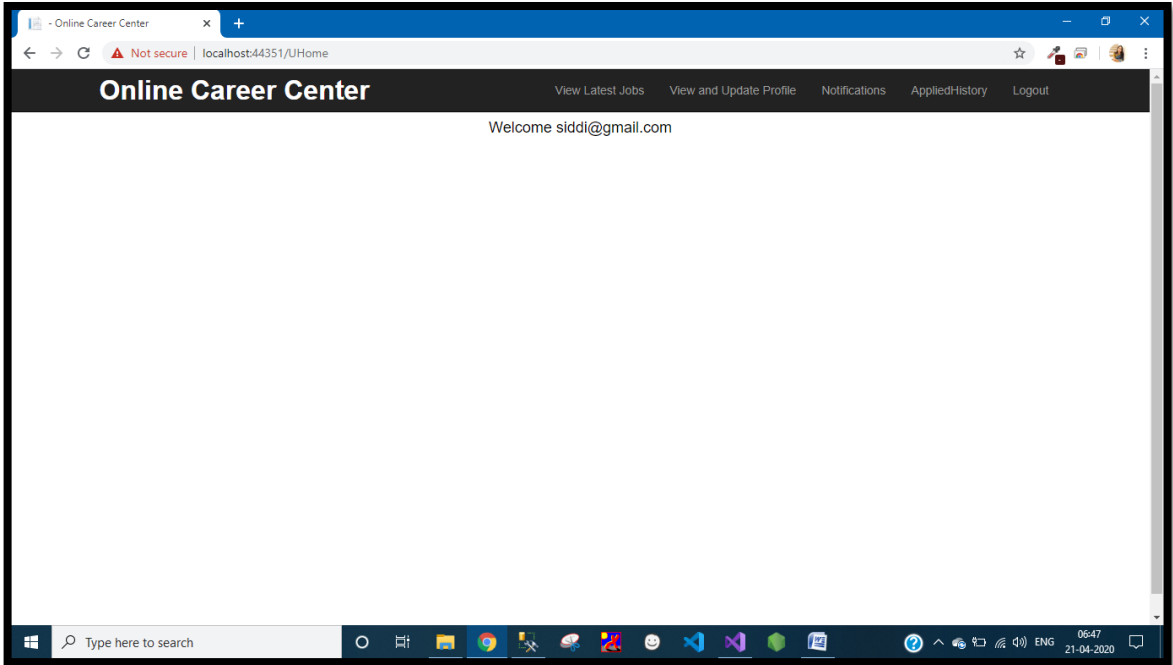All gathered requirements are implemented. Here we will be seeing the user interfaces.
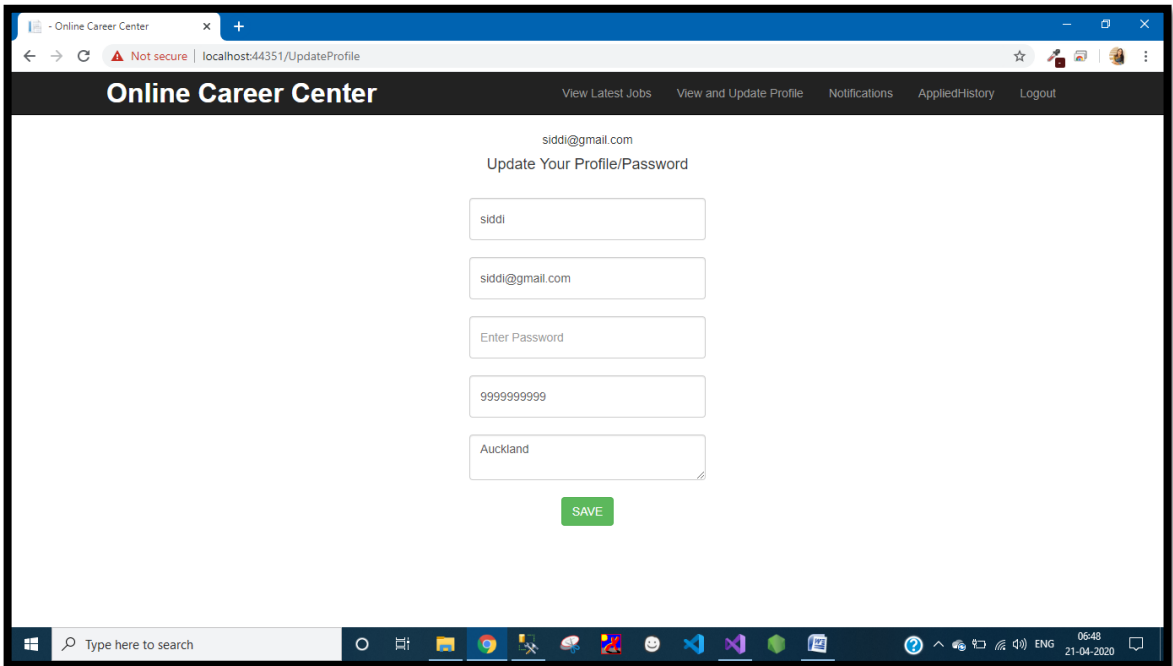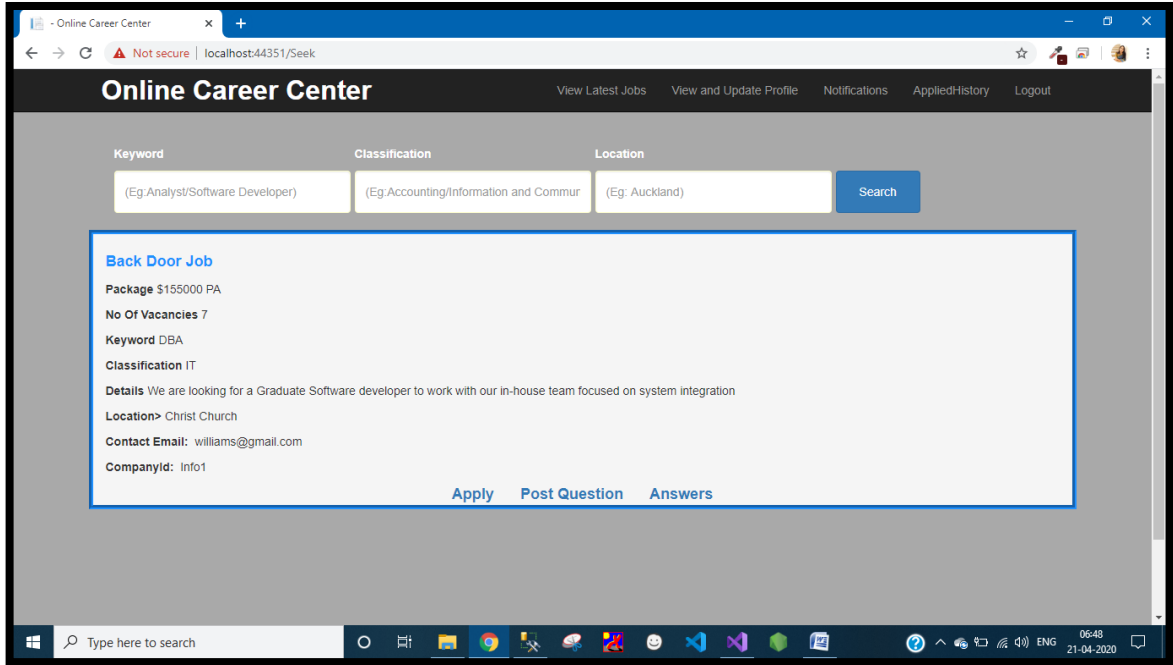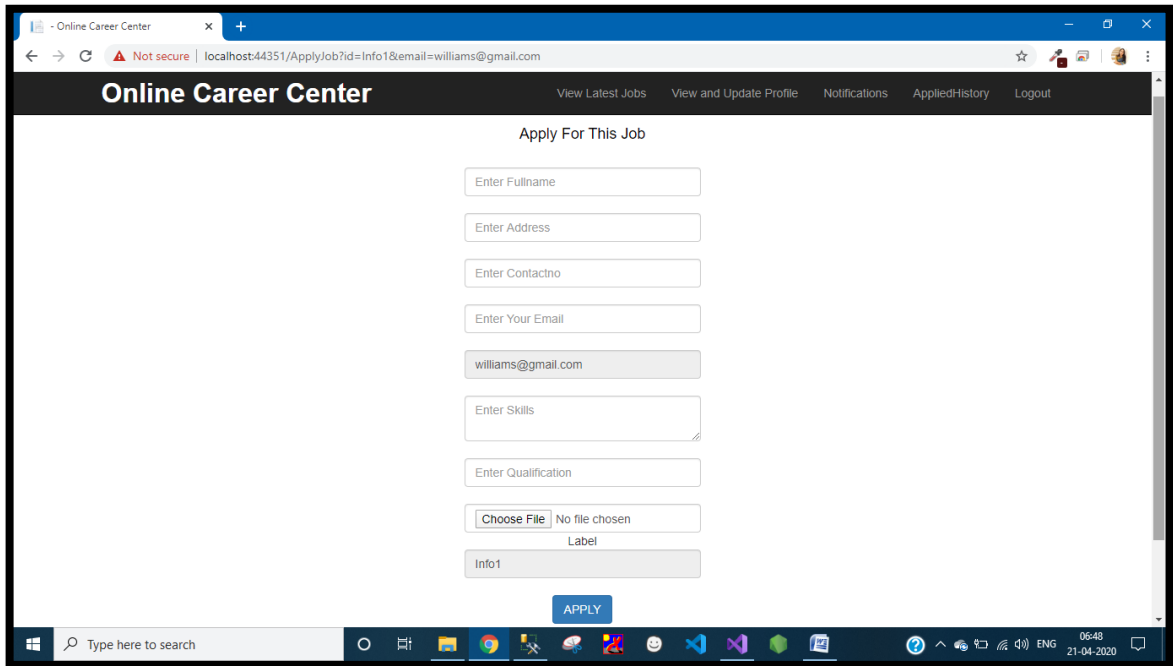
Main page:
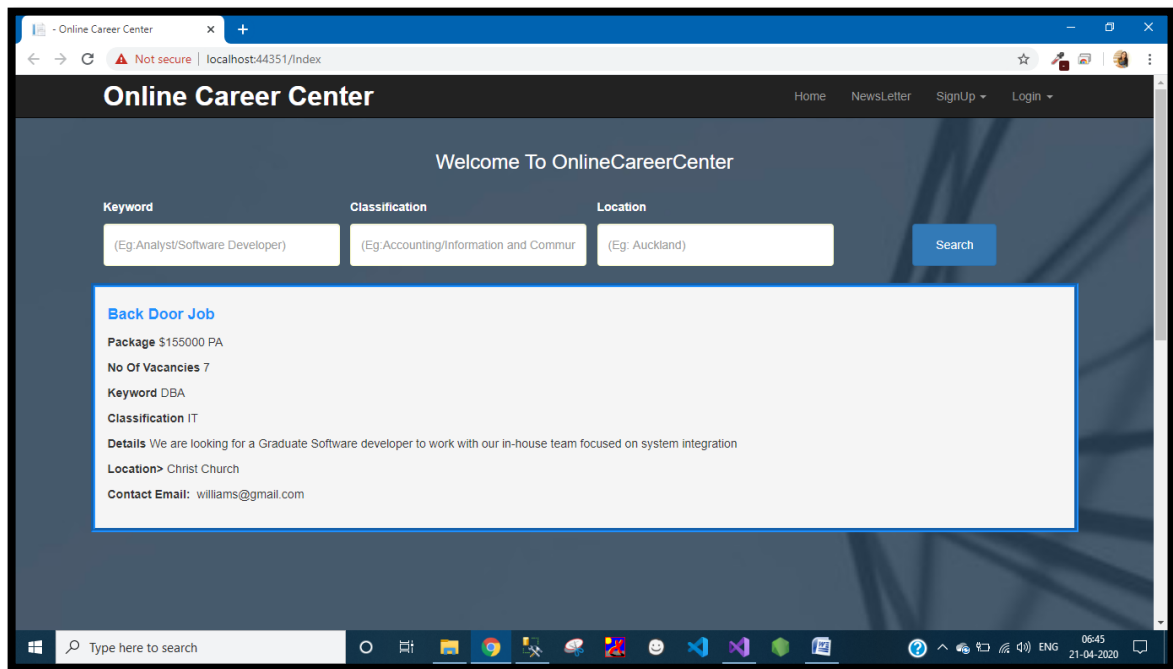
Job Seeker signup:
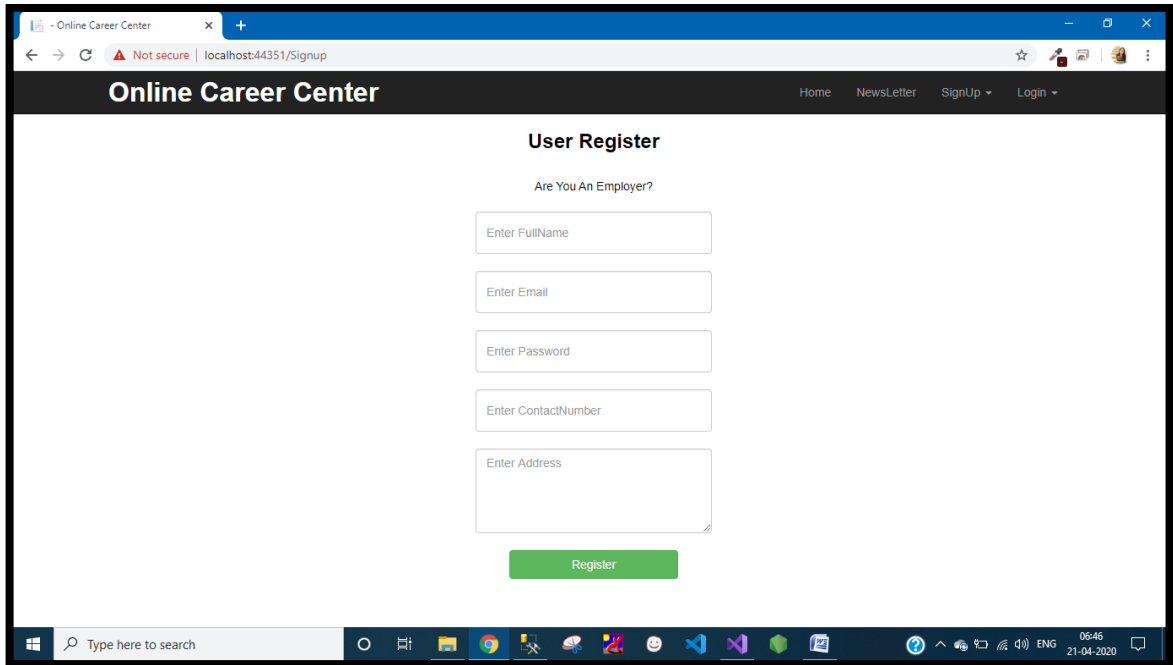
Job Seeker login:

Job Seeker homepage:

Job Seeker update profile page:

Latest jobs page:

Job Seeker applying for job:

Job Seeker applied history:
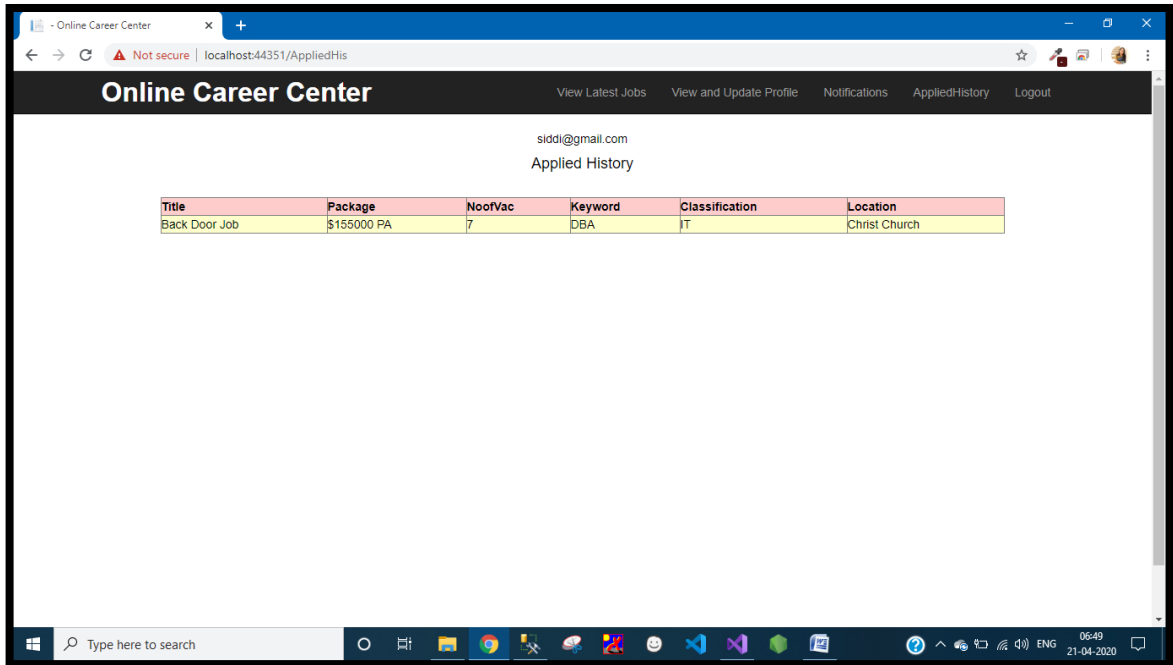
Job seeker received notifications from various employers:
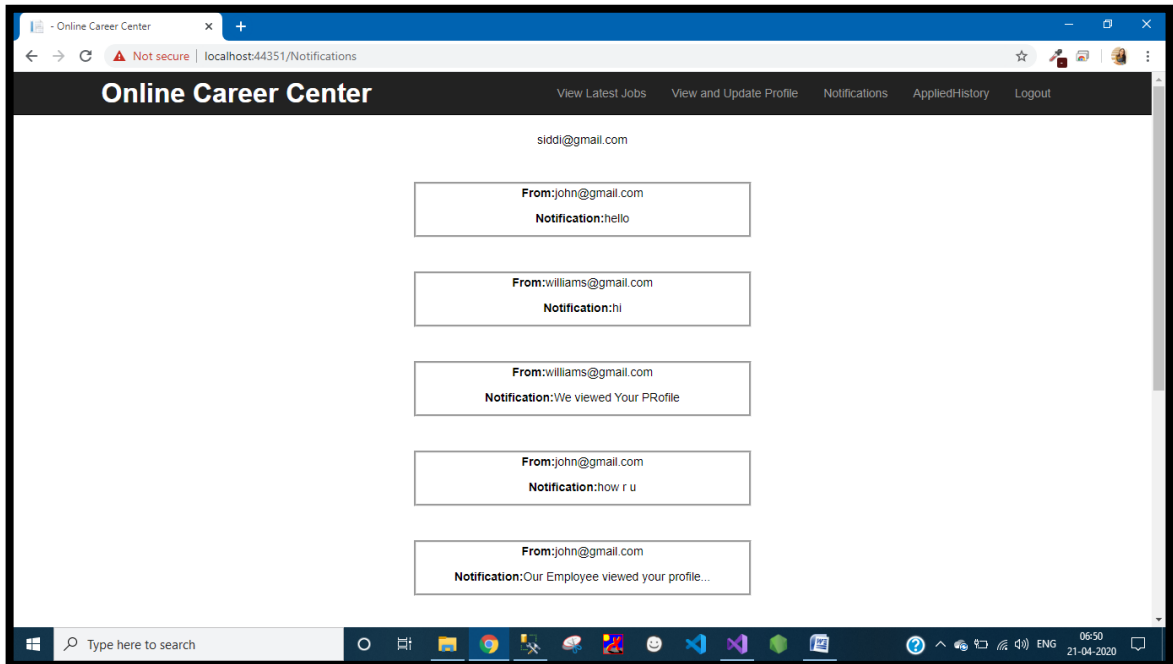
Posting a question to certain employer:
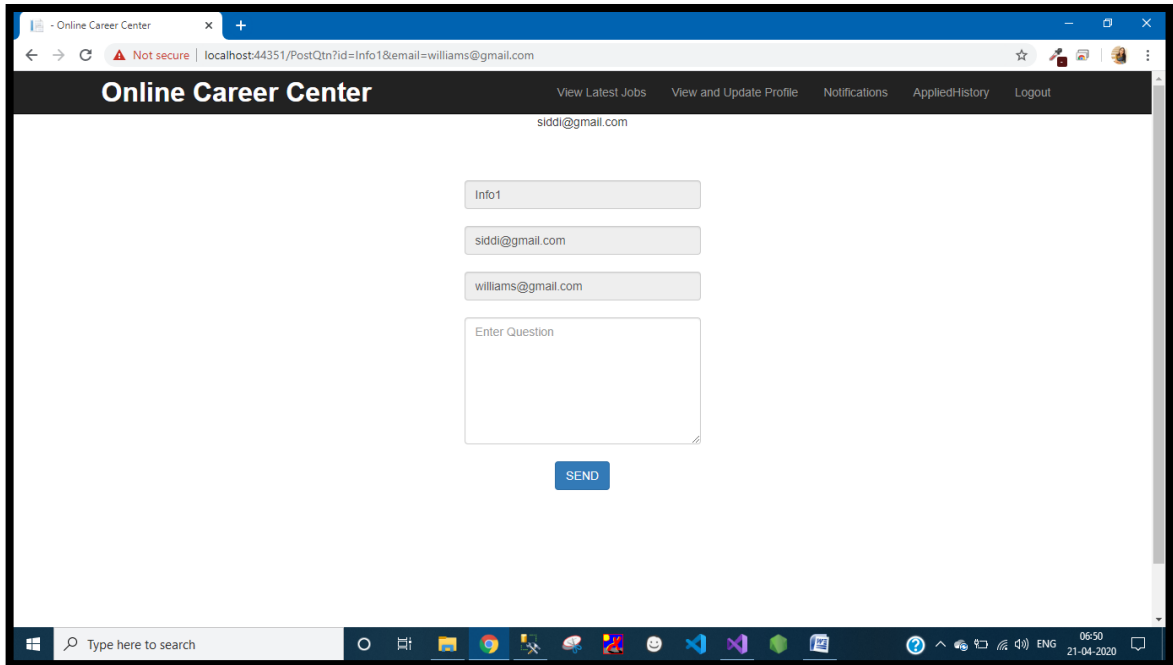
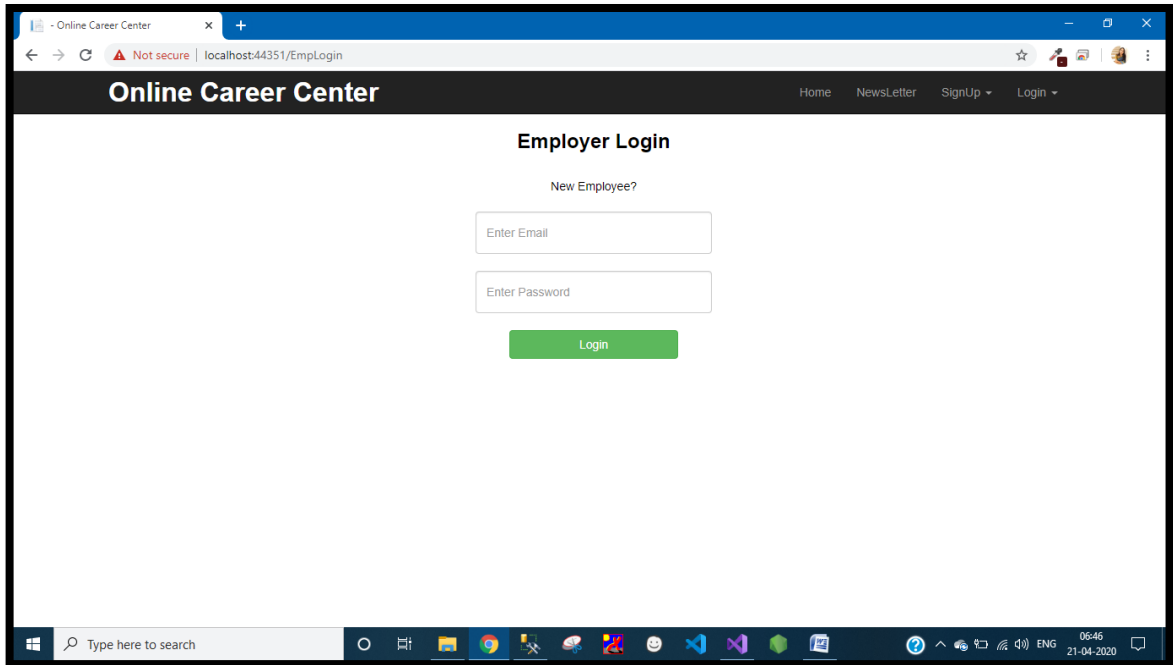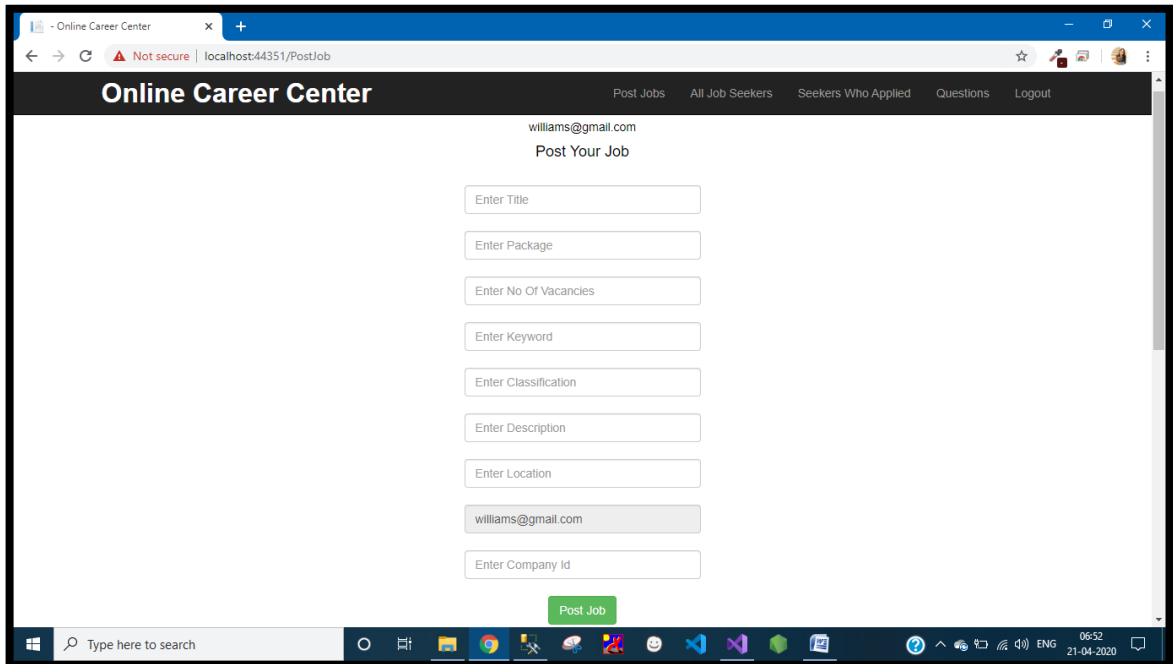Job seeker receiving answers from employer:
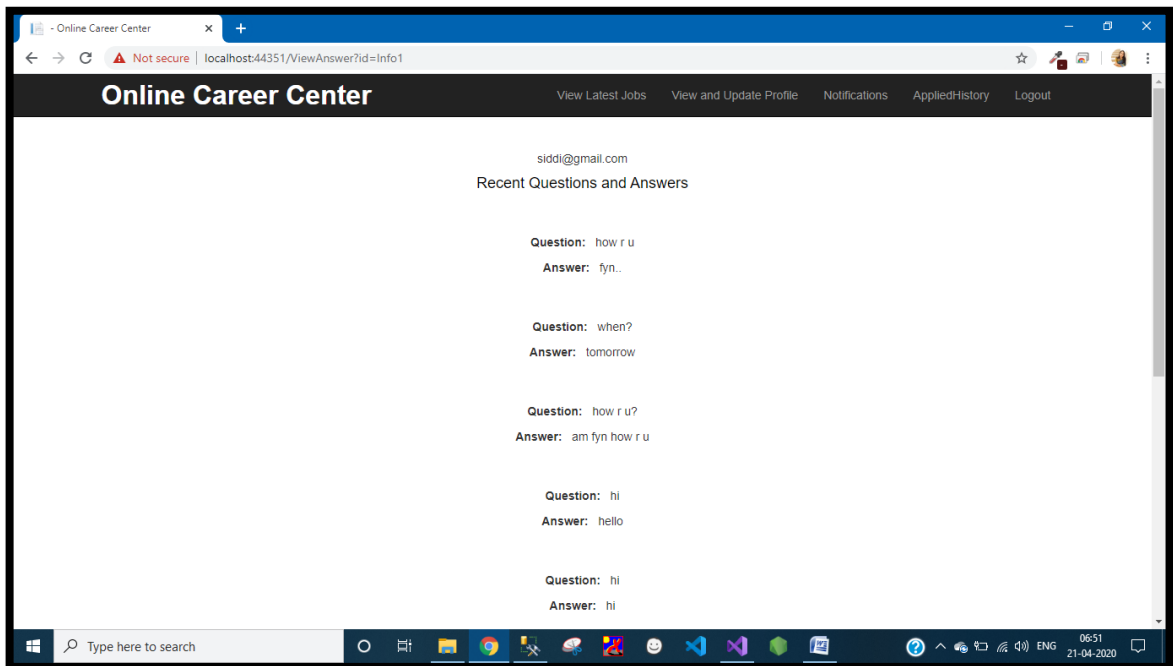
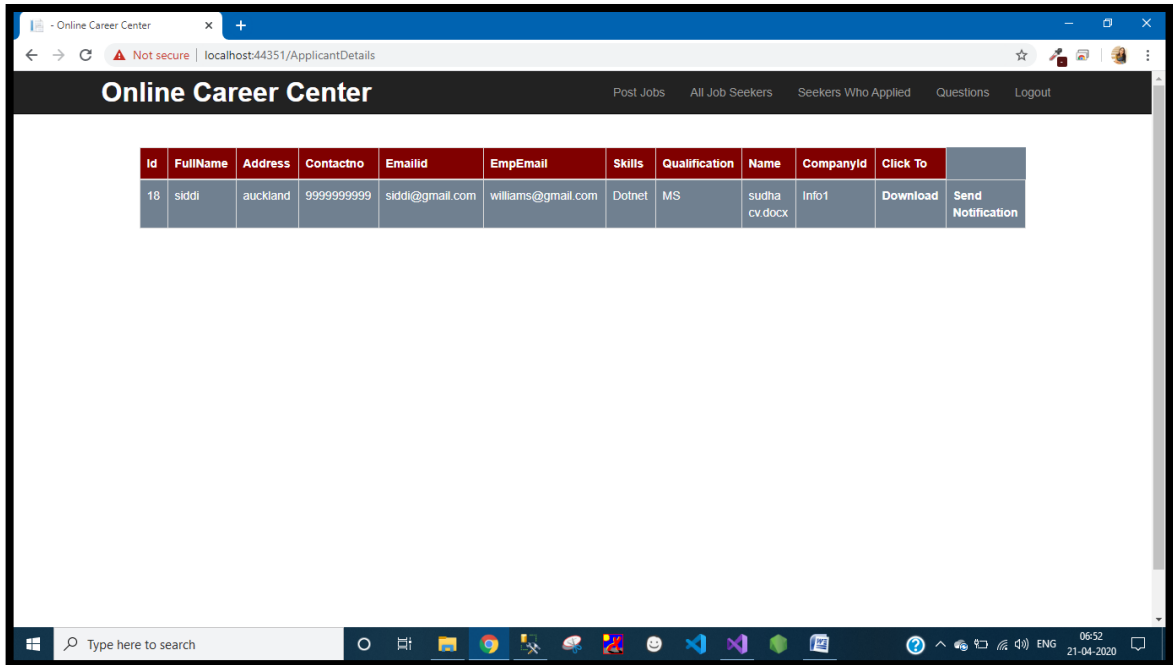Employer home page:
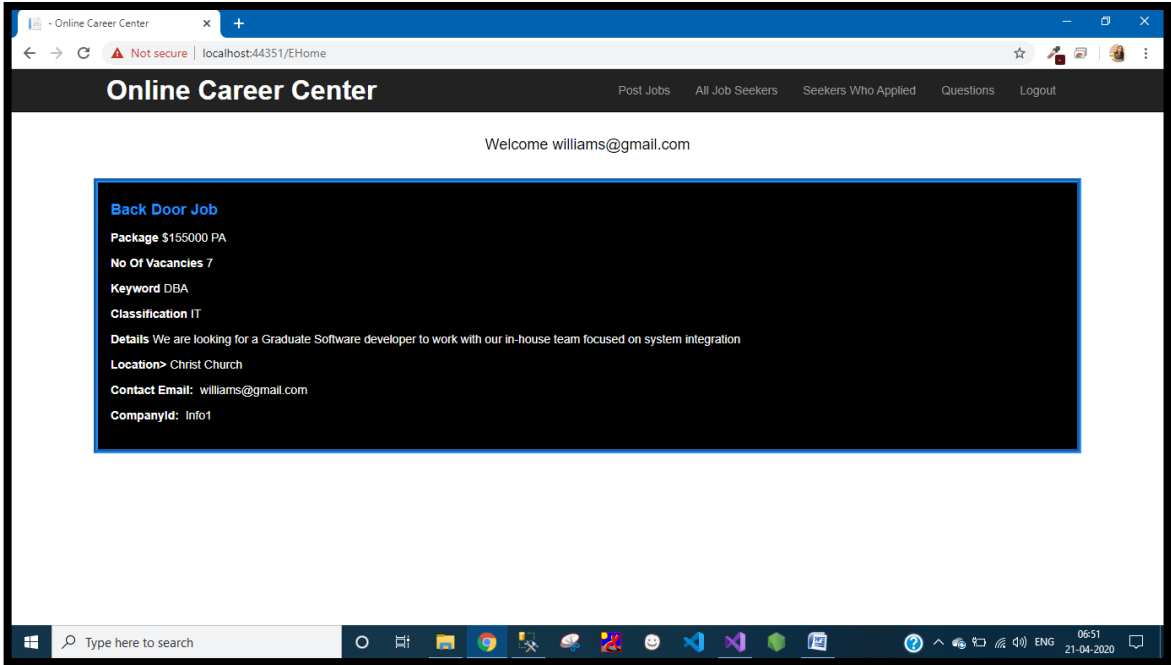
Employer signup page:
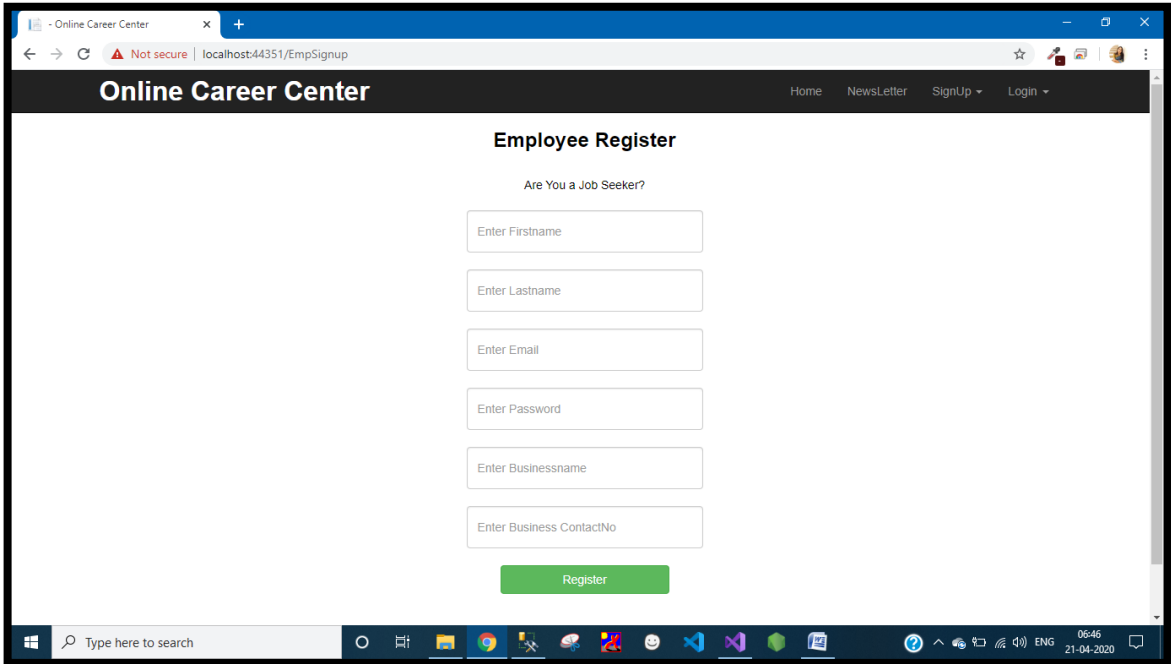
Employer login:
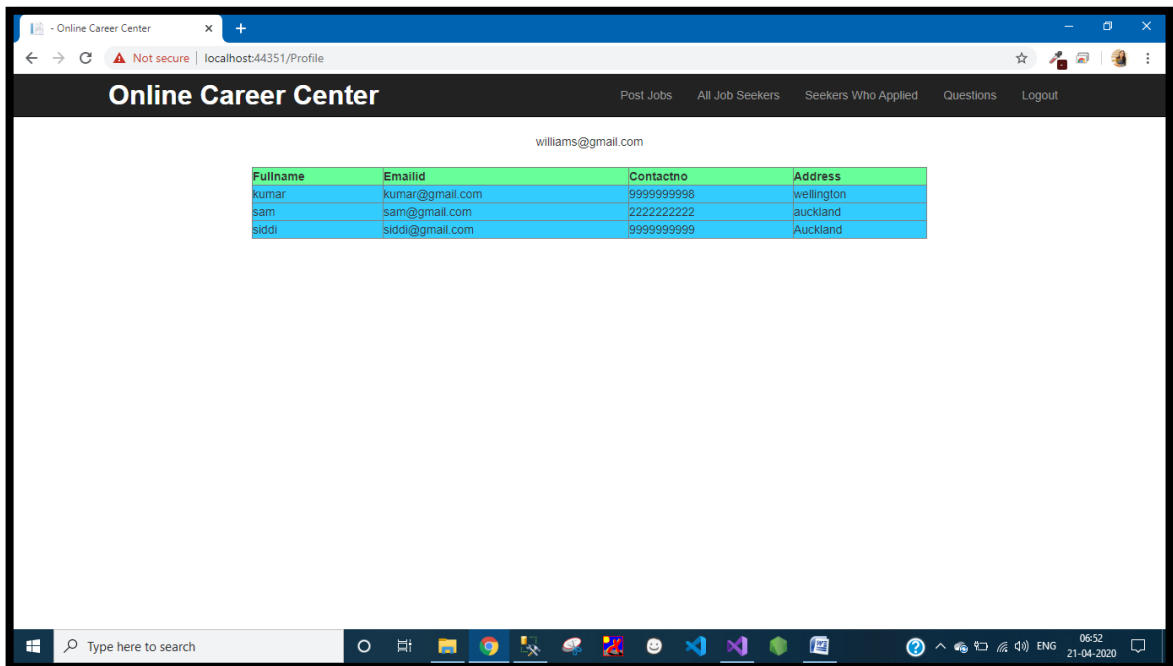
Employer posting jobs:

Seekers list along with resumes who applied for his posted jobs:
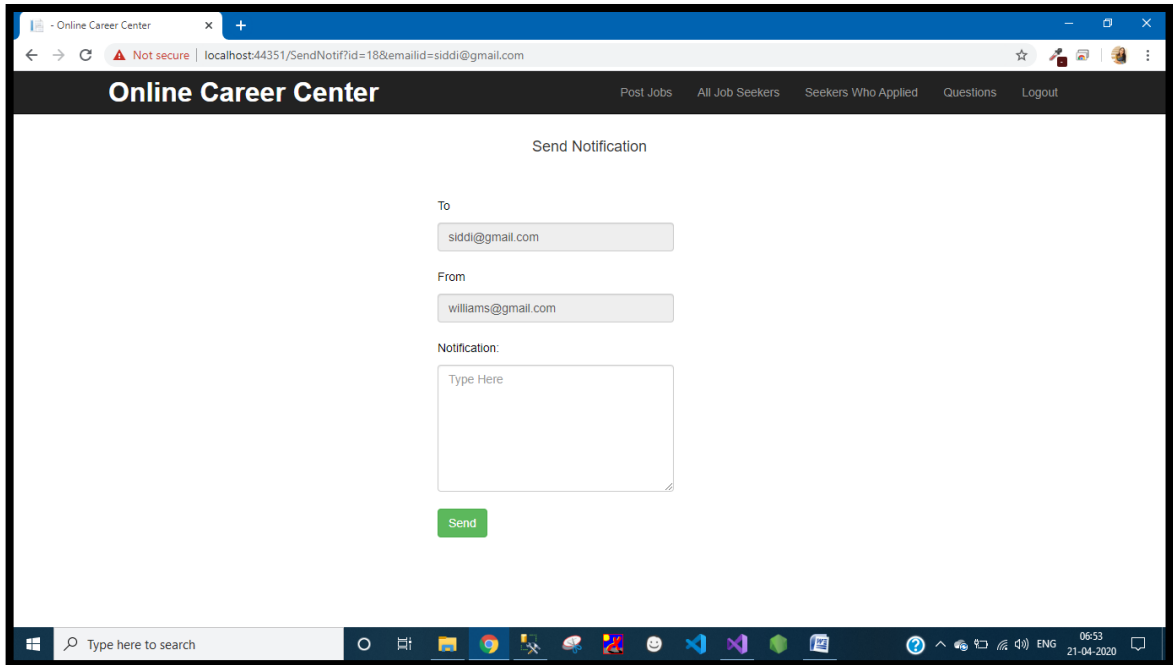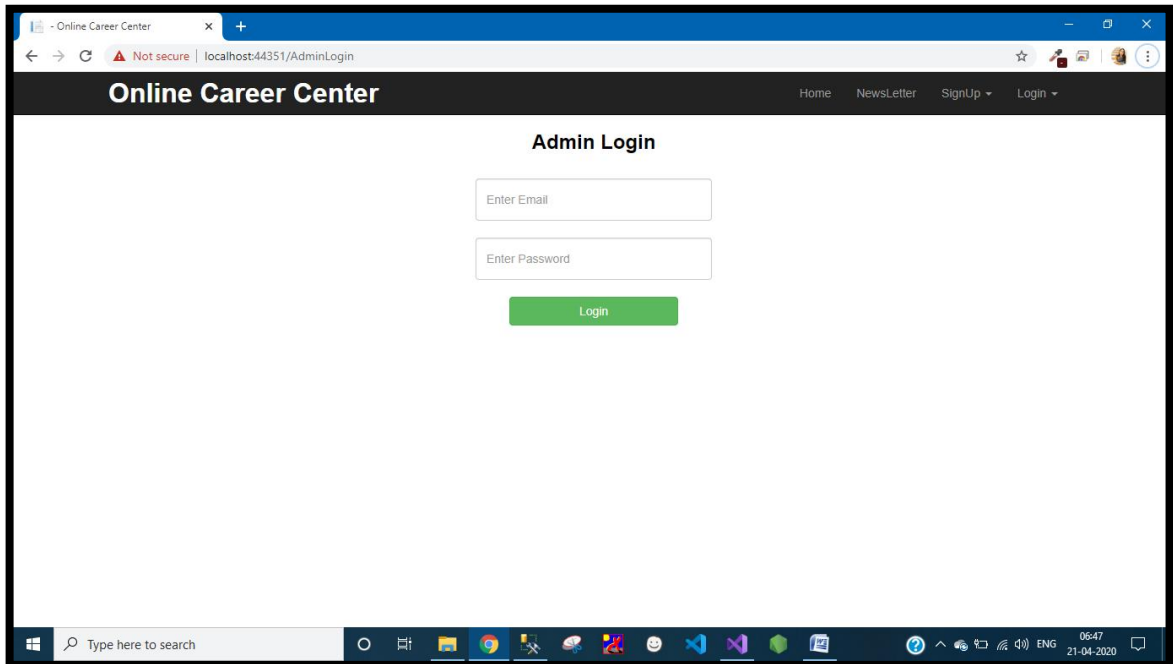
All jobseekers list:

Employer sending notification to certain user:
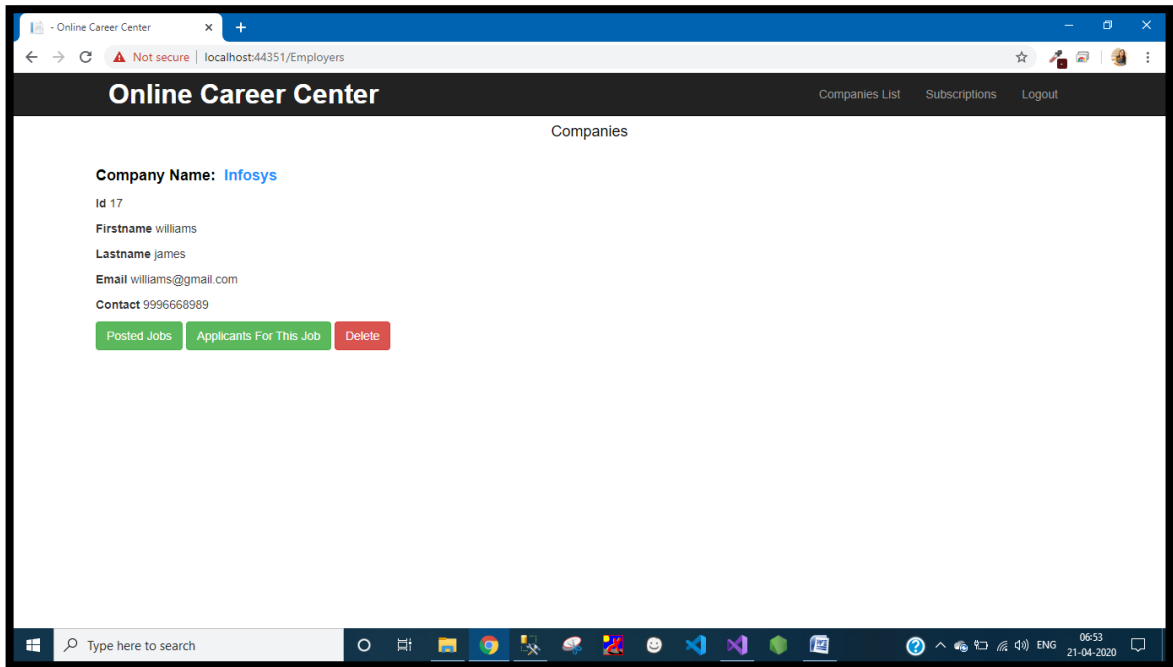
Admin Login:
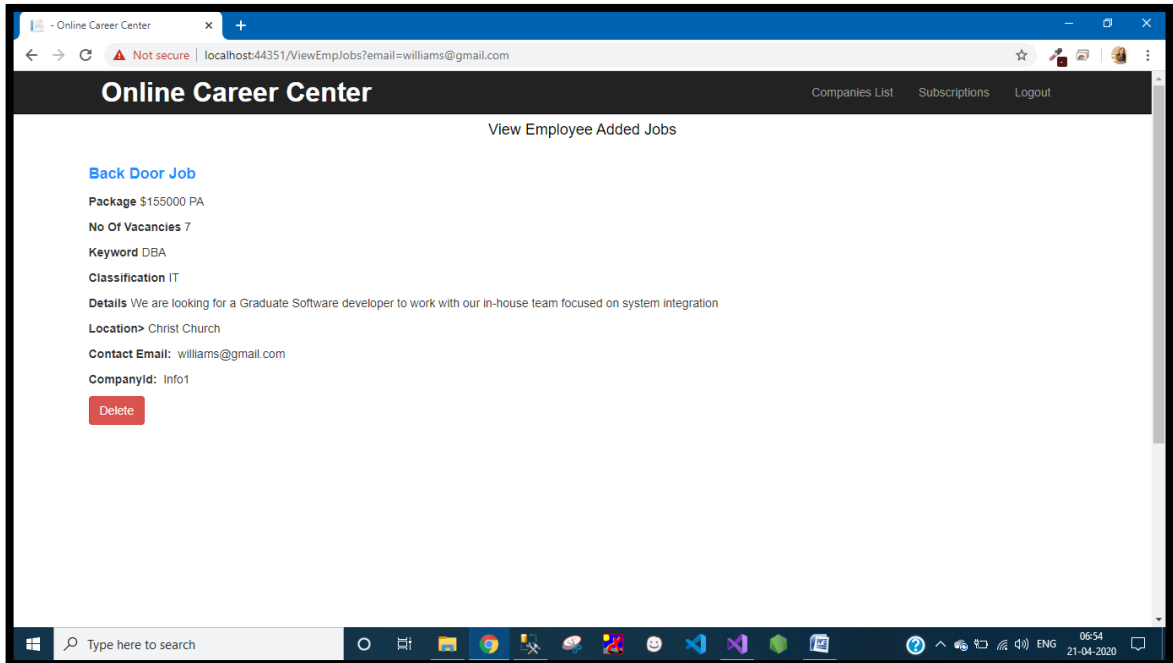

Admin home page:

He can view/delete employers/companies list

Admin can view/delete employer posted jobs:

Admin can view/delete applicants for that job:

Online Career Center

Companies List   Subscriptions   Logout

View Applicants

siddi

Id 18

Address auckland

ContactNo 9999999999

Candidate Email siddi@gmail.com

Company Email williams@gmail.com

Skills> Dotnet

Qualification: MS

CompanyId: Info1

Delete