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## **ONLINE CAREER CENTER**

By

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### GRADUATE CAPSTONE 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

2021

#### **ABSTRACT**

Online Career Center is a website for finding jobs and assisting companies to recruit skilled candidates. By using this website job seekers can search jobs according to their requirements and companies also can find talent at the same time. Through this website job seekers can search and apply to a company for a job and can also select location and learn about the job and company's profile in detail.

Online Career Center has a feature to give the job alerts and notifications to the job seekers which they saved earlier in their profile. Job seekers can explore jobs and salary package and get an option to verify the average salary of the job in the market. This website handles database which has large amount of the data of the companies and jobseekers' profiles.

Online Career Center connects job seekers and recruiters. Through our website job seekers can explore about present job trends for getting opportunities.

#### **Software / Hardware Requirement:**

- Operating System: Windows 7 and latest versions of Linux
- **User Interface:** HTML, CSS (bootstrap)
- **IDE:** Visual Studio 2019
- Client-side Scripting: C #, ASP.NET framework
- **Database:** MS SQL Server
- **Processor:** Standard processor with a speed of 1.8 GHZ or more
- RAM: 256MB RAM or more
- Hard Disk: 20GB or more

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#### 1 Project Description

Online Career Center is developed as a web application that will be deployed on the public network. By using the domain name users can access the application. This application is used for posting jobs and finding jobs. The three modules of this application are job seekers, employers, and the administrator.

To implement the application, all the requirements should be gathered; requirements must be framed; the application must be designed; and it must be coded and tested. All these activities should be done one after the other. To perform these activities there are different project development models. We followed the traditional model which is a waterfall model where the operations of the projects are sequentially done one after the other. This model will have the highest success rate. Due to which it was selected.

Another area which needs to be addressed is the use of technology, we have used the .Net for the development of the application and the database used is MySQL. To do the operations with this application, all the data related to the operations should be stored. For this reason, the database should be used, and it should be designed by using database principles like normalization, redundancy, functional dependency, and integrity constraints, etc.

After identifying all the requirements, proper user interfaces need to design so that the users will be interacting with the application by using these user interfaces. Jobseeker and the employer will be having their dashboards and the services are provided to them on the dashboard. They can make use of those services to complete their requirements.(V. H. Chaitra & Dr. Rajasulochana, 2018)

#### 1.1 Competitive Information

We have gone through different online job consultancy services which provide the services for both the job seekers and the employers. These consultancies will be providing the list of applicants to the employers and employers will be selecting the people for recruiting. With the consultancy services, job seekers will not be directly approaching the employers and some time with such a system, employers will also not able to find the right talent. That is the reason the current application avoids such

issues and directly provides communication between the employers and the job seekers. After going through the other applications, it has been observed that the current application is user friendly and every user will be given with the dashboard to perform the operations.

#### 1.2 Relationship to Other Applications/Projects

This application does not have any relationship with the other applications. It is an individual project where people can directly use this application and the information will be stored in the database (Koong et al., n.d.). This application does not collaborate with any other applications.

### 1.3 Assumptions and Dependencies

This section explains the assumptions and dependencies. By using this information users get to know how the application is designed and developed and the policies the application has established to make any assumptions, and what kind of dependencies are existed in the application (Koong et al., n.d.).

#### Assumptions:

- a. To use the services of the application, users must register with the application.
- Whatever the information which is provided by the job seeker is correct and valid.
- c. All the information which is posted by the employer will be visible to the job seekers.
- d. Jobseeker will able to find the information that is stored in the application.
- e. The application should perform the functionality as per the requirements.
- Information related to the jobs that are posted by the employer is assumed to be correct.

#### Dependencies:

- a. Without the registration of the job seeker and the employer, they cannot avail the services of the application.
- b. If the jobs are posted by the employer, then only it will be visible to the job seekers.
- c. If the job seekers will be applied to a company, they only that company will able to view the applicant's information.

#### 1.4 Future Enhancements

To have better performance and increase the users like job seekers and employers, application should be updated continuously. The following are some of the future enhancements which are to be implemented soon (Koong et al., n.d.).

- a. To develop a mobile application, so that people can view it through the mobile. The following are the future enhancements of the application.
- b. To get the notifications to the user immediately when a job posted in the application that is related to his skill set.
- c. Online communication should be established between the employer and the job seeker, so that if there is any immediate recruitment is there then they can directly have the interview process (Koong et al., n.d.).

#### 1.5 Definitions and Acronyms

We did not use any of the Acronyms in developing this project.

#### 2 Project Technical Description

Online Career Center has been developed by using .Netincluding, MySQL database. Front end programming was written by using bootstrap, HTML, and Java script.

## 2.1 Application Architecture

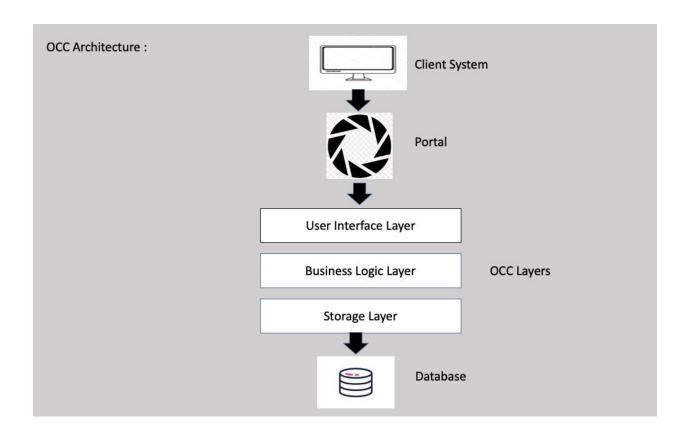


Figure 1 Online Career Center Application Structure

#### 2.2 Application Information Flows

The following chart explains the flow of application for better understanding we can explore the application so easily.

#### **Steps:**

- 1. We can open the application by using domain name.
- 2. In the home page of the application we can see options like register, sign in, etc. according to the requirement we can use the options.

- 3. Once the user is registered in the Online Career Center the user can log in whenever he/she is. After registering with the application, they will be logging into the application.
- 4. The user can only add by the admin.
- 5. Admin and user are having their own console.

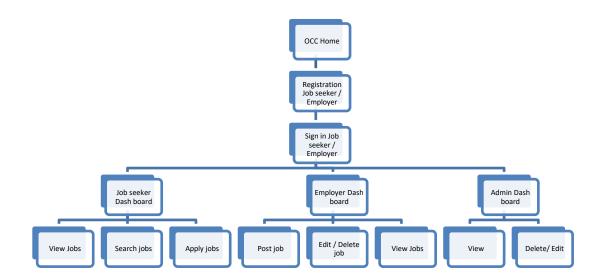


Figure 2Flow of the application

## 2.3 Interactions with other Projects (if Any)

Online Career Center is a unique website which does not interact with any kind of application.

#### 2.4 Interactions with other Applications

No interactions

#### 2.5 List of Capabilities

- a) Jobseeker Sign-up
- b) Jobseeker Sign-in
- c) Finding the jobs
- d) Jobseeker can apply for the jobs
- e) They can view the details of the organization.
- f) They can communicate with the application.
- g) Employer sign-up
- h) Posting the jobs by the employer
- I) Edit / delete jobs
- j) Admin Login
- k) View jobs.
- 1) Delete employers

#### 2.6 Risk Assessment and Management

To manage the risks, different risk management activities need to be performed. They are

a. **Risk identification:** Risk identification is done when the application is available to everyone, before that we have to identify the risk from start to end of the project and should be identified in the initial stages and have to fix the error. Risk in the application is, once the application is available the risks will become high due to the availability of the application than the main task is to provide proper customer service with a strategy to control all the risks.

#### b. Classifying and prioritizing risks:

The types of risks which are found in the application should be classified in different categories like, design risks, coding risks, etc. and knowing the risk dependency we have to prioritize the risk so that, we can know the impact of the risk.

#### c. Risk Mitigation:

Risk Mitigation methods are used to reduce the impact of the risk or to eliminate the risk. This method will help to overcome the issues that are present in the application to run smoothly.

#### d. Monitoring the risk:

All the identified risks should be monitored carefully to know their impact or track the risk process. This may provide the information to handle the risks carefully.

#### 3 Project Requirements

#### 3.1 Identification of Requirements

In the development phase, all the requirements are gathered by doing research on a similar application and based on the requirements of the stakeholders.

Based on the SMART criteria, requirements are gathered and presented in the following section. (Mansourvar & Yasin, 2014)

#### 1. GSU-GS\_SP2020-1 Job seeker\_01

- 1.1 Register
- 1.2 Login
- 1.3 View jobs
- 1.4 Search jobs
- 1.5 Apply jobs.
- 1.6 View communication.
- 1.7 Logout

#### 2. GSU-GS\_SP2020-1 Employer\_02

- 2.1 Register
- 2.2 Login
- 2.3 Post jobs
- 2.4 View jobs

- 2.5 Edit/Delete jobs
- 2.6 View applicants
- 2.7 Communicate applicants.
- 2.8 Logout.

#### 3. GSU-GS\_SP2020-1 Admin\_03

- 3.1 login
- 3.2 view job seekers
- 3.3 view employers
- 3.4 add employers
- 3.5 delete employers
- 3.6 view posted jobs
- 3.7 Log out.

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

Online Career Center has three main operations Employer, Job Seeker, Admin, all the three users have their own login, logout, and forgot password. The employer can post the jobs and the job seeker can apply for the jobs and the admin must accept the request. The maintenance of the project, administration activities, proper maintenance of the project, and different operations are to be performed in the project to include recovery of data when the problems like system crash, data backup whether the data is unfortunately deleted, the analysis on the stored data is done. The developed application will be deployed in the webserver and will be taken care of all the operations. There is no need of maintaining the application by the user.

#### 3.3 Security and Fraud Prevention

The security of the Online Career Center is implemented with user authentication. Whenever any of the users want to login the application he should register and then he should login into the application. If the user has entered the wrong credentials, the system will not allow the user to enter the application. This is one kind of security provided by the application. (Mansourvar & Yasin, 2014)

Another level of security is provided by the administrator. If any of the users is doing any kind of malicious activities within the application, then they are identified, and admin can block or delete the user.

#### 4 Project Design Description

The given project is designed with the project requirements specification. All the requirements are specified in detail in this section.

## **UML** diagram

The UML diagrams are used to represents graphically through different notations. Out of different UML diagrams, we will use the use case diagrams and sequence diagrams to represents the functionalities and workflow of the operations.

#### **Use-Case diagrams:**

Following is the use case diagram for the job seeker.

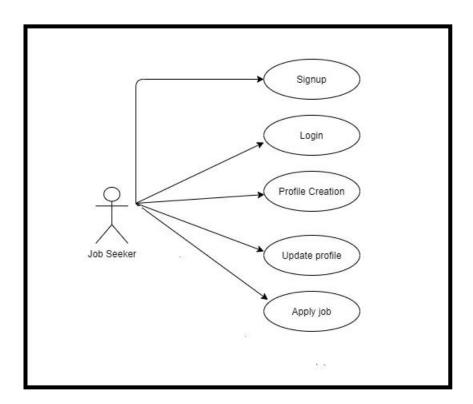


Figure 3 Use Case Diagram for job seekers

## Use case diagram for Employer and Admin:

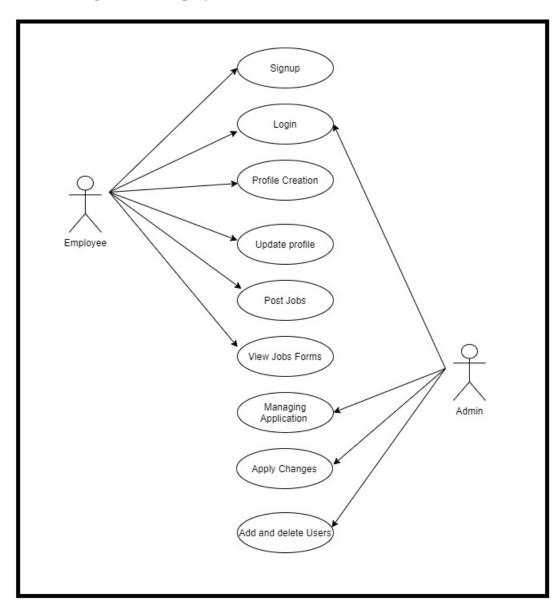


Figure 4 Use case diagram for employer and Admin

## **Sequence diagrams:**

#### Job Seeker:

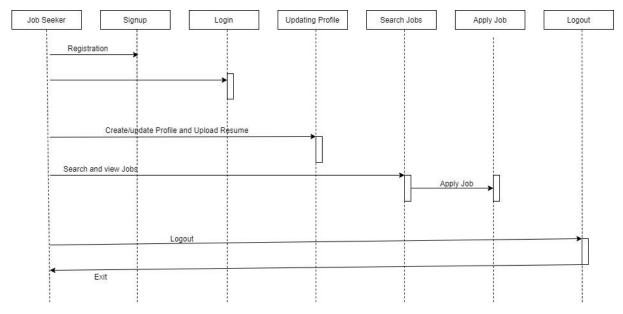
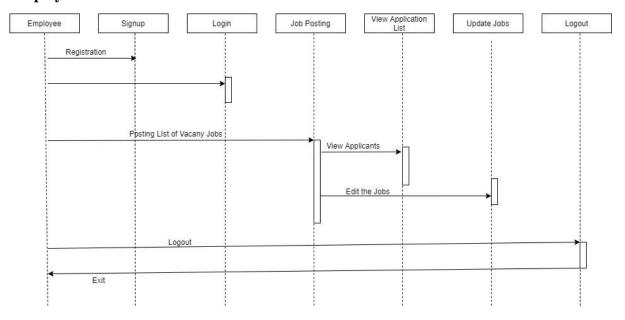


Figure 5 Sequence diagram for job seeker operations

## **Employer:**



 $Figure\ 6\ Sequence\ diagram\ for\ employer\ operations$ 

## **Administrator:**

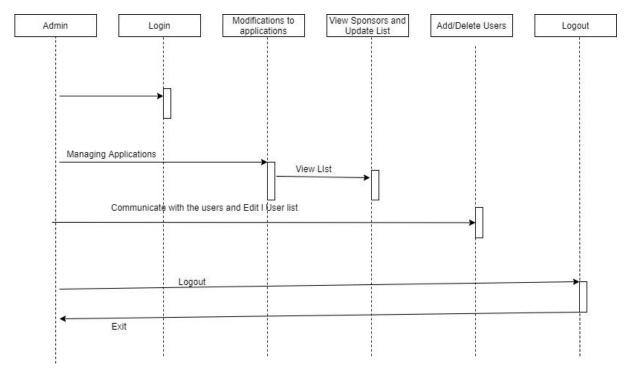


Figure 7 Sequence diagram for Admin operations

## Database design:

Seeker Applying For job

## Apptbl:

	Column Name	Data Type	Allow Nulls
<b>▶</b> 8	Appld	int	
	jobid	varchar(50)	$\checkmark$
	uname	varchar(50)	$\checkmark$
	member	varchar(50)	$\checkmark$
	Name	varchar(50)	$\checkmark$
	Туре	varchar(50)	$\checkmark$
	Data	varbinary(MAX)	$\square$

Employee Registration Table:

Emptbl:

	Column Name	Data Type	Allow Nulls
Þ	id	int	
	fullname	varchar(50)	$\checkmark$
	contactno	varchar(50)	$\checkmark$
	email	varchar(50)	$\checkmark$
P	uname	varchar(50)	
	pwd	varchar(50)	$\checkmark$

## Seeker Signup Table:

## Seekertbl:

	Column Name	Data Type	Allow Nulls
•	id	int	
	fullname	varchar(50)	$\checkmark$
	contactno	varchar(50)	
	email	varchar(50)	$\checkmark$
P	uname	varchar(50)	
	pwd	varchar(50)	$\checkmark$

## Employee Posting Jobs:

## Jobtbl:

	Column Name	Data Type	Allow Nulls
<b>▶</b> 8	jobid	varchar(50)	
	comname	varchar(50)	$\checkmark$
	role	varchar(50)	$\checkmark$
	package	varchar(50)	$\checkmark$
	exp	varchar(50)	$\checkmark$
	qual	varchar(50)	$\checkmark$
	skill	varchar(50)	$\checkmark$
	loc	varchar(50)	$\checkmark$
	contactno	varchar(50)	$\checkmark$
	date	varchar(50)	$\checkmark$
	process	varchar(50)	$\checkmark$
	description	varchar(MAX)	$\checkmark$
	uname	varchar(50)	$\checkmark$

User Subscription Table

	Column Name	Data Type	Allow Nulls
<b>₽</b>	ld	int	
	fname	varchar(50)	$\checkmark$
	Iname	varchar(50)	$\checkmark$
	email	varchar(50)	$\checkmark$

#### Admin Table:

Column Name	Data Type	Allow Nulls
username	varchar(50)	$\checkmark$
password	varchar(50)	$\checkmark$

Figure 8 Database tables for application

#### E-R Diagram:

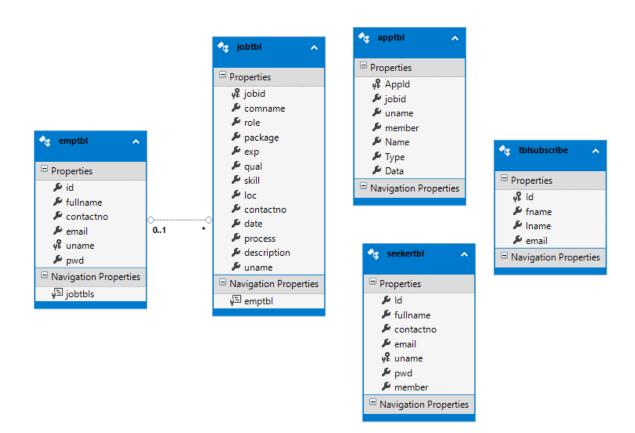


Figure 9 E-R diagram

#### 5. Internal/external Interface Impacts and Specification

Online Career Center has good user interface design. With the help of these interfaces, users will interact with the application. The data which is given by any of the users will be stored in the database. The User interface which is designed is self-learnable, by seeing it people can easily understand the functionality of that user interface. These interfaces provide different services to different types of users. Users will have their own dashboard with different services. All these services can be used by that user. Each user will store and retrieve the information.(Hauff&Gousios, 2015)

#### 6. Design Units Impacts

All the gathered requirements should present in the represented form. If the requirements are presented in the graphical form then there will not have any kind of ambiguity within the requirements, and it is easier for the developers to code the application. If the requirements are in the written form, then there may be a chance of confusion at some point. That is the reason design provides a greater impact on the implementation of the application.

#### 6.1 Functional Area A/Design Unit A

#### i. Functional Overview

Online Career Center provides a platform for job seekers and employers. It provides the services which are required by both job seekers, and companies which need to recruit talented people. So, posting jobs and applying to jobs by the jobseekers will be done by using this application.

#### ii. Impacts

If the proper design is there with the application, then every user of the application will be satisfied by using it. Let us see how this application had impact on the 3 different types of users.

#### Jobseeker:

A jobseeker is an un-employed person where he is in search of jobs in different organizations. He will search for organization website and the required job posted by them. Similarly, he will search for different sites for finding jobs. Sometimes, he may not be able to find jobs even if organization has the requirement. By this, we can understand that job seekers are facing so many issues in finding jobs. To overcome all these issues, an application is developed and inviting all the employers in posting their recruitment information so that it can reach maximum number of people.

#### **Employer:**

In organizations, the companies are not able to find the right people even though they are investing more in publishing the job information in the papers and other media. This is becoming a more costly affair for them, even though it is not reaching the maximum people. Because of this, they are not able to recruit the right people. So, the issues which the organizations are facing can overcome with the help of this application. By using this application, employers can post their requirements, and all this information can be viewed by a group of people. People who are eligible for those jobs can directly apply from here. (V. H. Chaitra & Dr. Rajasulochana, 2018)

#### Admin:

The admin plays the lead role in managing the application. He will be setting up some policies and guidelines that need to be followed by every user like the job seeker and the employer. If any of the users is not following and if they are not maintaining the decency, then admin can delete them from the application, Admin will have the right to view the information of both the job seeker and the employer. He will control all the users of the application.(Hauff&Gousios, 2015)

#### iii. Requirements:

The following section explains the functional requirements of the application. These requirements have been gathered based on the type of users.

#### **Functional requirements:**

#### Jobseeker:

To use the application by the job seeker and to perform the operations, following are the requirements identified. They are

- ➤ The jobseeker must register with the application.
- To use the application, he needs to login to the application.
- ➤ He should able to view the jobs posted by the companies.
- > Job searching facility should be provided.
- ➤ A facility should be provided to apply for the jobs directly from the application
- A proper communication facility should be provided within the application.
- ➤ He should able to logout from the application.

#### **Employer:**

Following are the operations of the employer. They are

- Like the jobseeker, the employer will also be having the registration, login and logout features with the application.
- Employer should able to post the jobs.

- ➤ If needed, he should have the right to edit, modify the jobs.
- ➤ He can able to delete the jobs.
- ➤ He can view the list of applicants and their information by using this application.
- ➤ He can able to have communication with the job seeker by using this application.

#### **Administrator:**

- ➤ He is having more privileges when compared to the job seeker and the employer.
- ➤ He will be viewing the information of both the job seeker and the employer.
- ➤ He can directly create the employer.
- ➤ He can delete the employer and the job seeker.
- ➤ He is having the right to view the jobs list posted by the employers.

#### 7. Open Issues

We have faced different issues in completing this project. They are

- a. At the initial stages, we were unaware of confining to the requirements and had difficulty to set the boundaries of the goals.
- b. While designing the application we had done research on lot of tools for the development.
- c. Installation of the software was the biggest issue because of the errors we faced to develop application.
- d. We had faced lot of errors while developing the application because of the new platform that we do not have any idea and consumed lot of time for that.

#### 8. Acknowledgements

We would like to thank our teammates, and our professors who guided us in completing this project.

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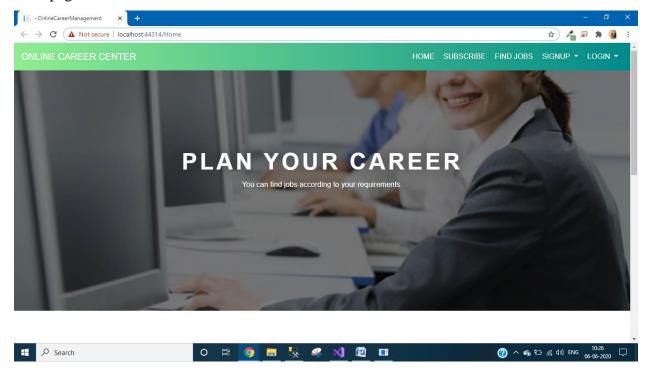
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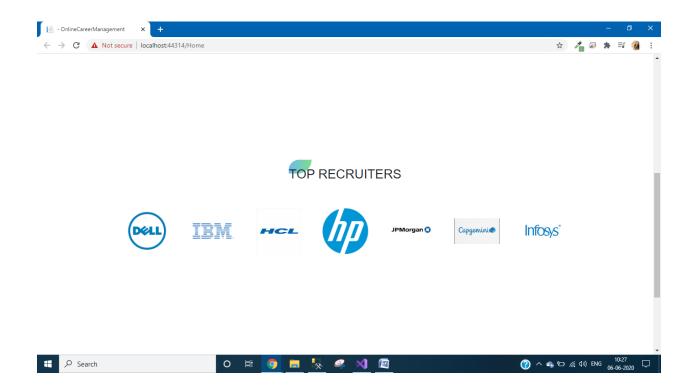
  June 17, 2020, from <a href="http://publications.anveshanaindia.com/wp-content/uploads/2016/04/Students-Awareness-towards-Career-Creation-with-Job-Portals-2.pdf">http://publications.anveshanaindia.com/wp-content/uploads/2016/04/Students-Awareness-towards-Career-Creation-with-Job-Portals-2.pdf</a>
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   https://doi.org/10.5281/zenodo.1168563
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- 7. <a href="https://www.indeed.co.uk/">https://www.indeed.co.uk/</a>

## 10. Appendices

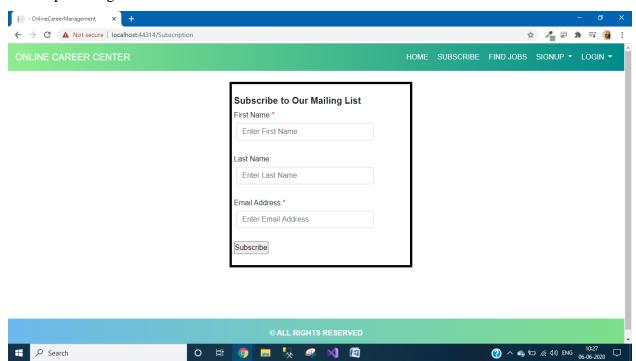
Output screens:

## Main pages:

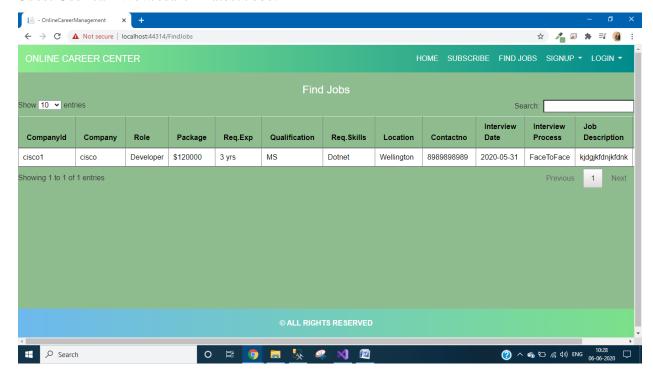




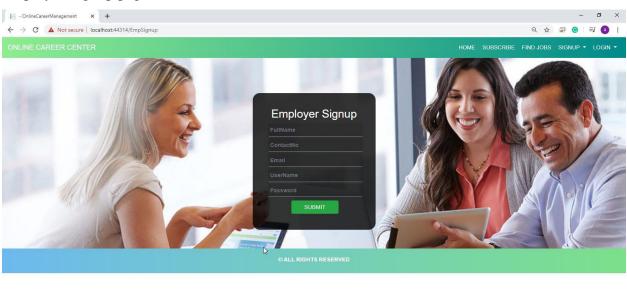
#### Subscription Page:



#### Guest User can View/search Latest Jobs:

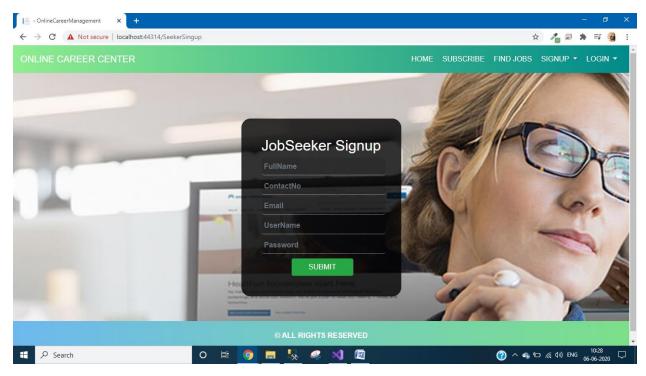


## Employer Signup page:

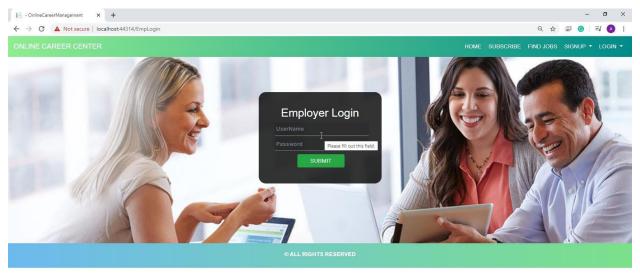




## Job Seeker Signup Page:

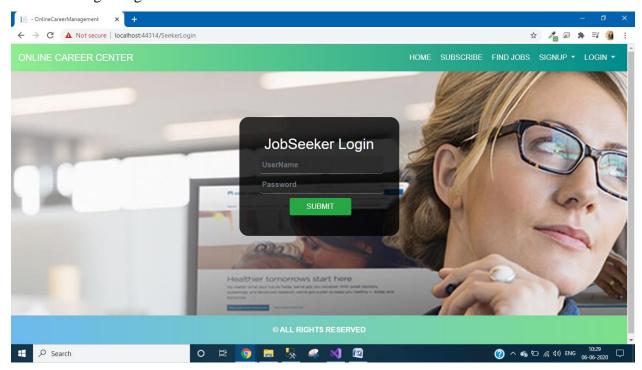


## Employer Login Page:

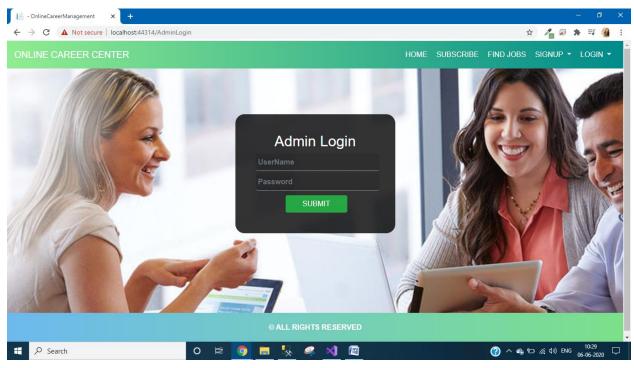




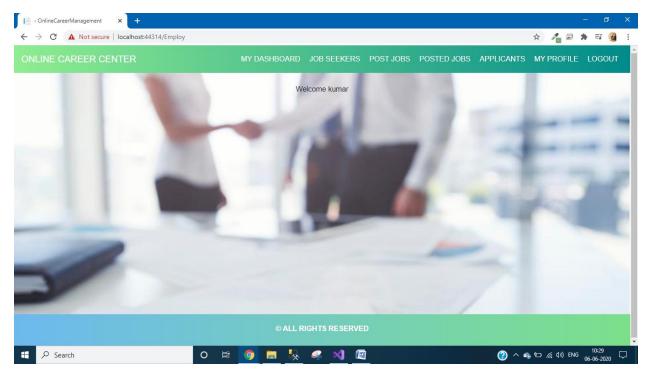
## Jobseeker Login Page:



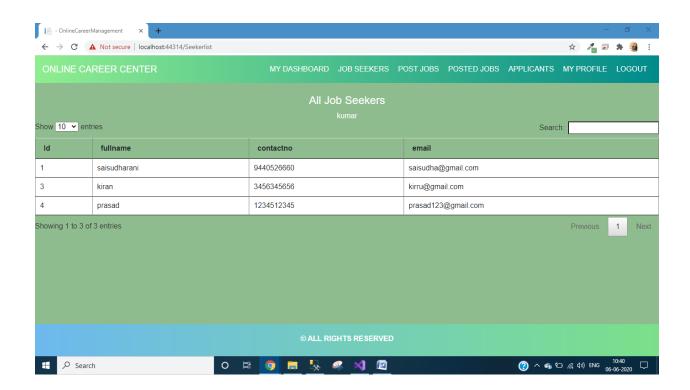
## Admin Login page:



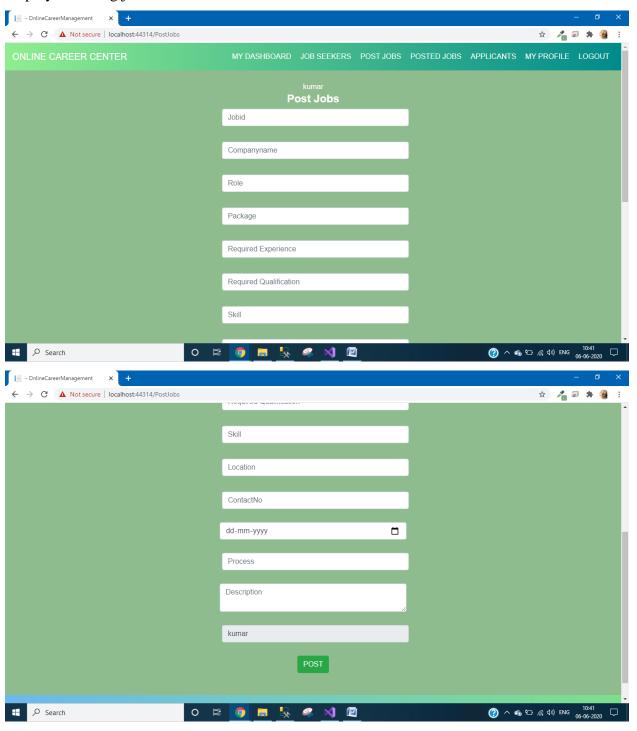
## Employer Home Page:



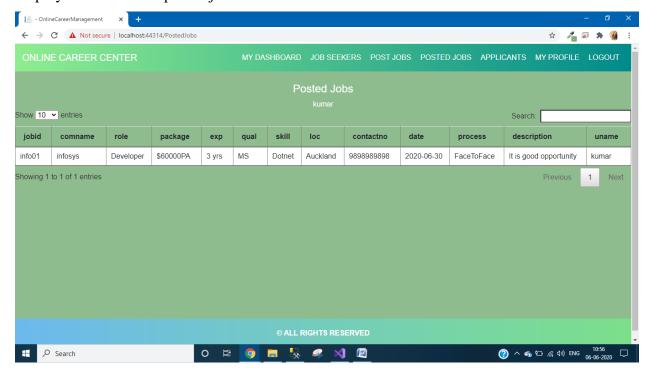
## List of Jobseekers who signed up:



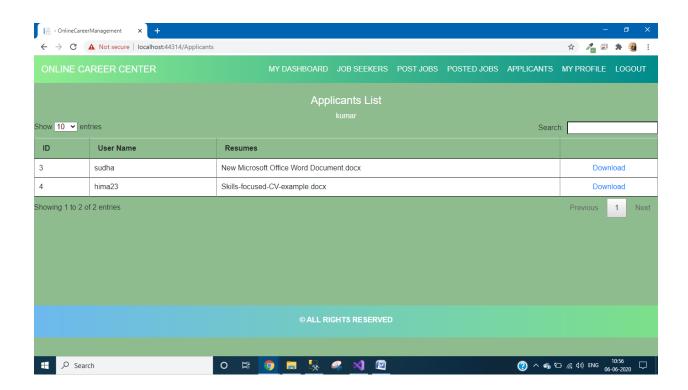
## Employer Posting jobs:



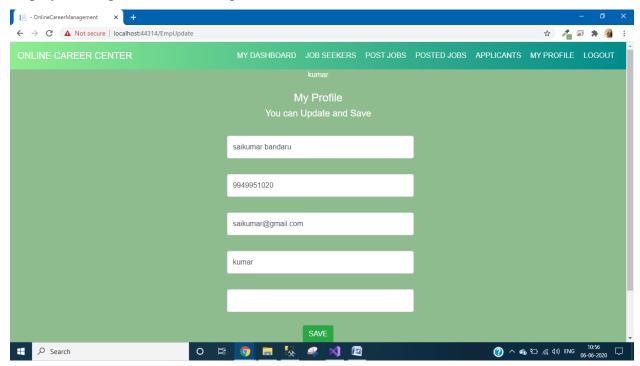
#### Employer can view his posted jobs:



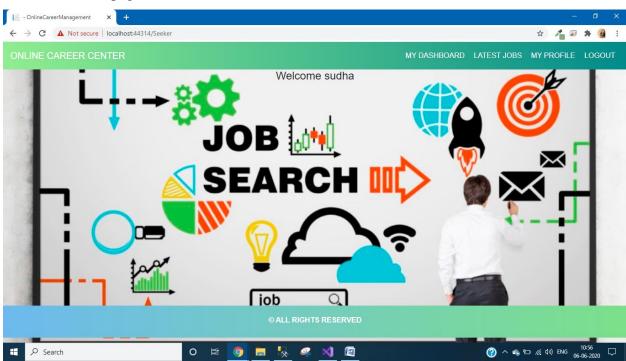
Employer can view applicants for his posted jobs:



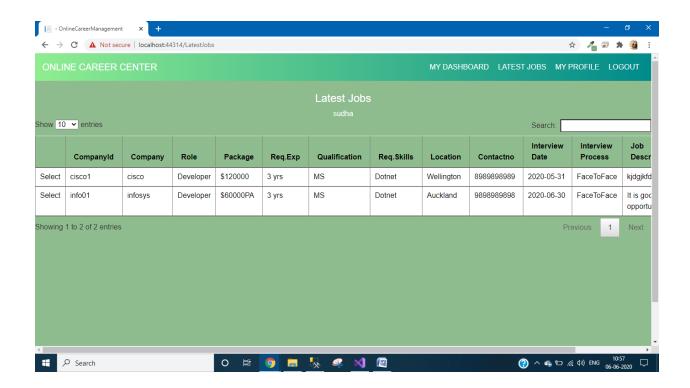
#### Employer can update and save his profile:



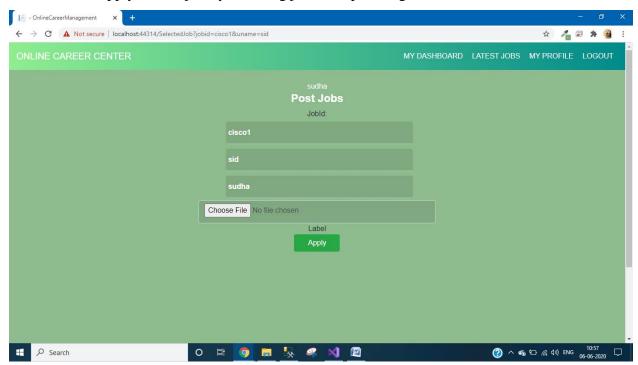
#### Job seeker home page:



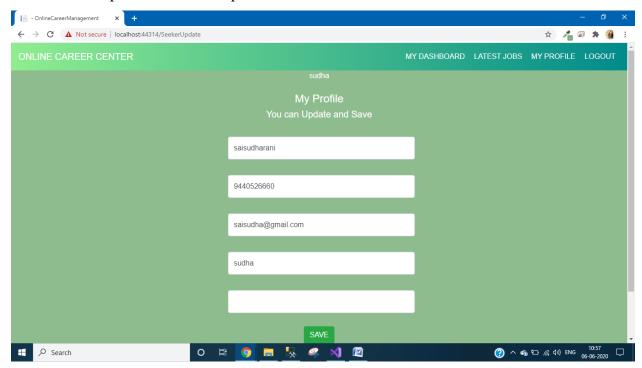
Jobseeker can view the Jobs posted by Employer:



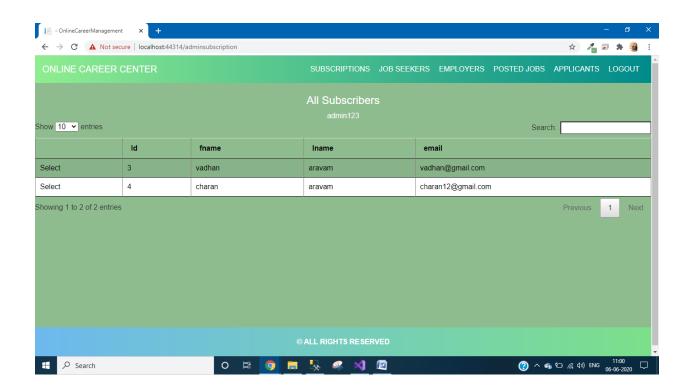
Jobseeker can apply for the job by selecting job and uploading resumes:



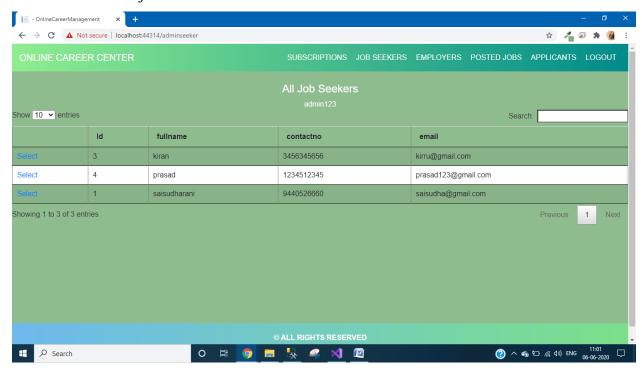
Jobseeker can update and save his profile:



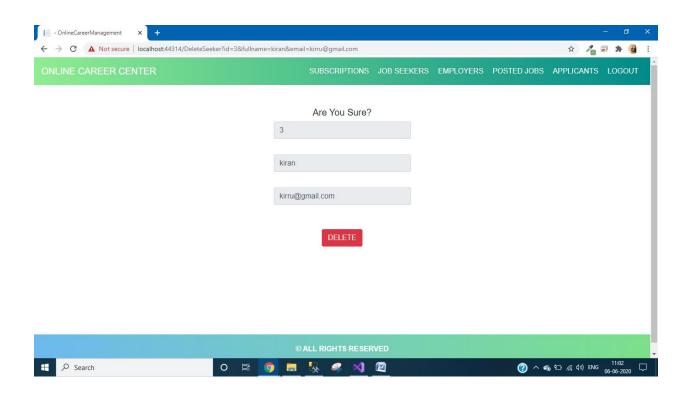
#### Admin can View all subscribers



#### Admin can view all job seekers:



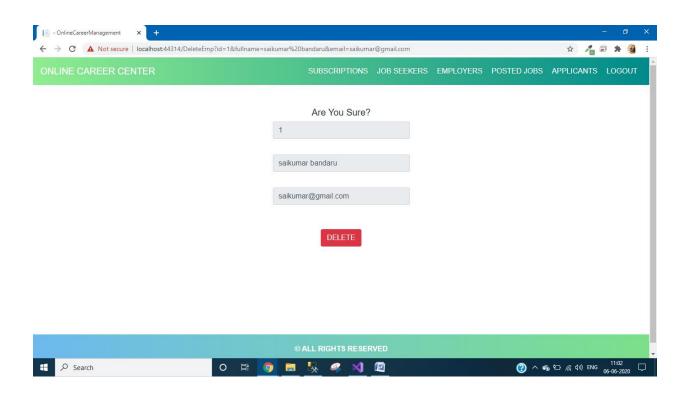
#### Admin can delete Job seeker:



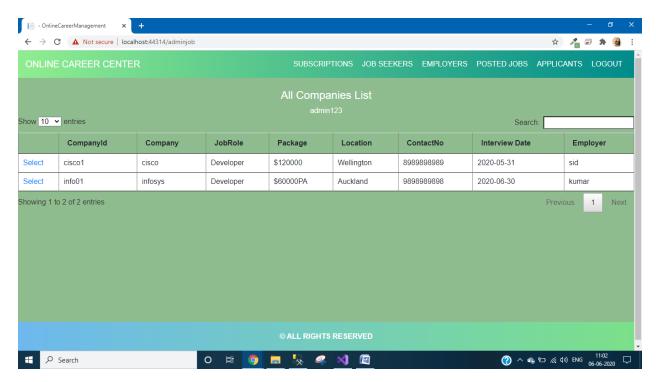
#### Admin can view all employers list:



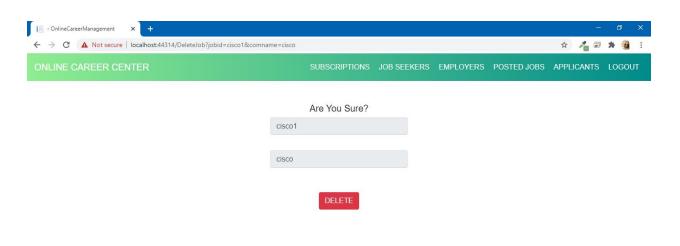
### Admin can delete Employer:



## Admin can view all companies list:

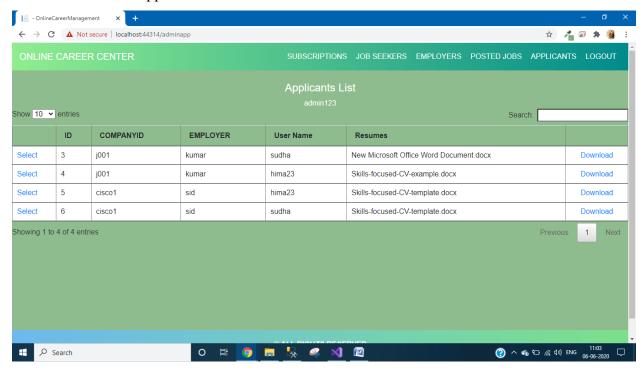


Admin can delete Employer posted jobs:





#### Admin can view all applicants list:



### Admin can delete Applicants:

