

# **Chapter 1**

## **Introduction**

The project is a web-based recruitment application where job seekers can find jobs and recruiters can post job availability for the company.

### **1.1 Background**

This application will consist of two portals. One will be the candidate portal and the other will be the company portal. In the candidate portal, a job seeker can find a job of his will. S/He will create a Resume on the system itself. In the company portal, companies will post the job availability. The systems that are presently available in the market do not provide the feature of analyzing the best CVs and sending notifications to the applicants automatically. Our system will analyze the best CVs and then mail the respective candidates about their selection for the next interview round.

The system comprises of attractive user interface which will be comfortable for all the users working on the system. The system also generates a Resume for the candidate. The company doesn't need to manually type the entire notification message or send the notification. The system will take basic information details such as the venue of the next interview round and time and then simply send the email on the company's behalf to the respective candidate.

## **1.2 Objectives**

There are 3 main objectives of this system. Those are

1. To ease out the hectic process of recruiting people.
2. To let people easily find jobs of their will.
3. To save the time required to notify every desirable candidate manually.

## **1.3 Purpose, scope, and Applicability**

**Purpose:**

The project is a recruitment application. The system's main aim is to ease the recruitment process and save the time-consuming process of manually sending notifications to every candidate regarding their selection or deselection. The system will inform the applicants whether they are selected for further interviews or not via email.

**Scope:**

The system provides a platform for recruiters and candidates to look for employees or look for jobs respectively. The recruiters will post jobs available on the system. The candidates will be able to search for different job availabilities and apply for the job of their choice. With this system, the company wouldn't need to call or message each shortlisted candidate manually. Instead, the company will only specify the venue of the next interview to be taken and the time to be present. The system will send an email to the respective candidate specifying whether s/he is selected or not including additional details if present. Using this system candidates can also generate a Resume and even download it in a pdf format.

**Applicability:**

Nowadays people are moving more into the digital world. A lot of offices are opting for remote working as well. Also, in this pandemic situation, everything is carried out online. This system helps to carry out some of the hectic parts of recruitment processes. Candidates can find the job of their will anytime anywhere without going through newspapers and pamphlets. Candidates can easily develop a formal Resume on the system for free and can even download it. Recruiters do not need to inform every individual manually. The system will send mail to the applicants about their selection or deselection. The recruiters are only required to specify some basic details for the next interview to be conducted. The system will use the information and send an email notification about the selection or deselection of the candidate with the other information specified by the company if any.

# **Chapter 2**

## **Survey Of Technologies**

### **2.1 Existing Systems**

Technology has seen a lot of development in past few years. Nowadays we are provided with a lot of options to develop any system. Several processes are involved in developing a full-fledged system right from the designing phase to its security. There exist several IDEs that make the development phase easier than before. They provide a single platform to perform different tasks and execute different programming languages in one place. Modern programming languages seem to have easier syntax than older ones.

HTML and CSS are two of the most commonly used technologies for designing the user interface. Since we cannot make dynamic web pages with HTML and CSS, javascript is often used with them. Python is commonly used to develop websites and softwares, particularly in the fields of AI, ML, Data Science, Data analysis, and visualization. Java and Kotlin are widely used for android application development.

Generally, Linux is a widely used operating system by software developers while Unix is mostly used for game development. Android Studio is a widely used IDE for android development. Microsoft Visual Studio and Visual Studio Code are other IDEs that provide a single platform to develop different systems in different programming languages. PyCharm is majorly used to develop Python-based systems. MongoDB, PLSQL, and MySQL are some of the database processing technologies that we can use to maintain the data in our backend.

### **2.2 List of Technologies**

Following is the list of technologies that can be used to develop this system.

- **Python:** Python is a widely-used programming language, particularly in AI and Data Science. It is a high-level object-oriented programming language with an easy syntax that makes it easier to learn.
- **Java:** Java is based on object-oriented programming concepts widely used to develop android applications, desktop applications, or even client-server web applications. Java also has a good processing speed.
- **MySQL:** MySQL is a structured query language used to manage relational databases. The most common use of MySQL is to handle web databases.
- **HTML5 & CSS3:** HTML stands for HyperText Markup Language and it is a standard markup language for developing web pages. It contains different elements and describes the structure of a web page. CSS or cascading styles sheets is a language used for defining the look and appearance of a web page. It makes a markup language-based web page more attractive.
- **Bootstrap:** Bootstrap is a free and open-source CSS framework used to quickly design highly responsive and attractive web pages. It has templates for different components of a web page that can also be customized.
- **JavaScript:** Javascript is a scripting language that is used to create dynamic web pages with its simple syntax. It is widely used to create dynamic web pages and web applications.
- **PHP:** PHP or Hypertext processor is another scripting language that is embedded with HTML. It is widely used in developing e-commerce sites and managing databases easily.
- **MongoDB:** MongoDB is a NoSQL cross-platform database management system. It provides faster processing of data.
- **C#:** C# is a general purpose programming language and it is useful in developing a wide variety of software and applications. We can use C# to develop mobile apps, desktop apps, websites, web apps, and different games. C# is a choice for many game developers.
- **Django:** Django is a web framework for python that is used to create efficient web applications easily. It comes with a lot of built-in features including a Django admin interface, default databases, etc.

- **Android Studio:** Android Studio is an IDE specially used to develop Android applications using Java and Kotlin. It comes with ‘drag and drop’ technology that makes designing the UI easy.
- **PyCharm:** PyCharm is an IDE specially used to develop python-based websites and applications. PyCharm enables you to access the command line, connect to a database, create a virtual environment, and manage your version control system all in one place.
- **Visual Studio:** Visual Studio is another IDE used for developing high-end web applications in or softwares in different programming languages. It is very easy to change the virtual environment and interpreter even in the middle of the implementation phase.

## 2.3 Comparative study of Technologies

Technologies	Features	Advantages	Disadvantages
Python	<ul style="list-style-type: none"> <li>● Object-Oriented</li> <li>● Large Standard Library</li> <li>● Best for developing AI, ML, DL, DS, and IoT projects.</li> <li>● Interpreted</li> </ul>	<ul style="list-style-type: none"> <li>● Easy to learn</li> <li>● Portable</li> <li>● Easy debugging</li> </ul>	<ul style="list-style-type: none"> <li>● Slow</li> <li>● Takes large memory</li> <li>● Poor GUI</li> </ul>
Javascript	<ul style="list-style-type: none"> <li>● Object-Oriented Programming</li> <li>● Portable</li> <li>● Robust</li> </ul>	<ul style="list-style-type: none"> <li>● Easily develop responsive websites</li> <li>● Provides rich interfaces for developing interactive web pages</li> <li>● Used to develop both frontend and backend</li> </ul>	<ul style="list-style-type: none"> <li>● Complex codes</li> <li>● Less secure</li> <li>● Single Inheritance</li> </ul>
HTML/CSS	<ul style="list-style-type: none"> <li>● Easy to learn and use</li> <li>● Platform independent</li> <li>● Allows adding static files to web pages</li> </ul>	<ul style="list-style-type: none"> <li>● Easy to build websites</li> <li>● Supported by all browsers</li> <li>● Easily integrate with languages</li> </ul>	<ul style="list-style-type: none"> <li>● Static webpages</li> <li>● Large code</li> <li>● Less secured</li> </ul>
MySQL	<ul style="list-style-type: none"> <li>● Quick and reliable</li> <li>● Scalable</li> <li>● Client and utility</li> </ul>	<ul style="list-style-type: none"> <li>● Fast</li> <li>● Access a large amount of data</li> </ul>	<ul style="list-style-type: none"> <li>● Large memory needed</li> </ul>

	programs	<ul style="list-style-type: none"> <li>• Easy</li> <li>• Secure</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult to debug</li> </ul>
MongoDB	<ul style="list-style-type: none"> <li>• Schemaless</li> <li>• Document oriented</li> </ul>	<ul style="list-style-type: none"> <li>• Flexible database</li> <li>• High speed</li> </ul>	<ul style="list-style-type: none"> <li>• No joins</li> <li>• Large space</li> </ul>
Django	<ul style="list-style-type: none"> <li>• Excellent Documentation</li> <li>• Highly Scalable</li> <li>• Rapid Development</li> </ul>	<ul style="list-style-type: none"> <li>• Faster development</li> <li>• Secured</li> <li>• Fully loaded</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of the full system is required</li> </ul>
Visual Studio Code	<ul style="list-style-type: none"> <li>• Intelligent code editor</li> <li>• Project and code navigation</li> <li>• Version control systems</li> <li>• Integrated debugging and testing</li> </ul>	<ul style="list-style-type: none"> <li>• Easy to use</li> <li>• Excellent community supports</li> <li>• Fast code development</li> <li>• Easy installation</li> </ul>	<ul style="list-style-type: none"> <li>• Requires large memory and space</li> </ul>
Bootstrap	<ul style="list-style-type: none"> <li>• Attractive templates</li> <li>• Responsive utility classes</li> <li>• Easily customizable</li> </ul>	<ul style="list-style-type: none"> <li>• Ready templates</li> <li>• Responsive</li> </ul>	<ul style="list-style-type: none"> <li>• Heavy size</li> <li>• Time-consuming modification</li> </ul>

Table 2.1 Comparative study of technologies

## 2.4 Selected Technologies for the project

Here is the list of selected technologies for the project along with the reasons.

- 1) **Python 3.10:** Python is extensively used to develop systems based on AI/ML/DL or Data Science concepts. The main programming of the system will be done in python. Some of the features of python are important for our project:
  - a) Better code optimization
  - b) Easy syntax
  - c) Large standard library
- 2) **HTML5 /CSS3:** HTML and CSS are the best programming technologies to create beautiful web pages and web applications. HTML defines the structure of a webpage while CSS makes it look attractive. Some features of HTML and CSS:
  - a) Cross-platform
  - b) Flexible way to design web pages
  - c) Attractive user interface
- 3) **MySQL:** It is a structured query language based technology used to handle databases. It can be embedded with different programming languages. It can be easily linked with python code. Some features of MySQL are:
  - a) Manage a large number of databases
  - b) Support different data types
  - c) Fast speed

- 4) Bootstrap v5.1:** Bootstrap is a free and open-source CSS framework used to quickly design highly responsive and attractive web pages. It has templates for different components of a web page that can also be customized.
- a) Attractive templates
  - b) Responsive utility classes
  - c) Easily customizable
- 5) Django 3.2.7:** Django is a python framework used for creating websites and web applications more efficiently and fastly. It comes with a lot of inbuilt technologies and ready documentation to run Django. Some features are
- a) Excellent Documentation
  - b) Highly Scalable
  - c) Rapid Development
- 6) Visual Studio 1.65:** Visual Studio Code is an IDE specially used to develop websites and software using different programming languages. You can access the command line, connect to a database, create a virtual environment, and manage your version control system all in one place with the help of Visual Studio Code.
- a) Intelligent code editor
  - b) Project and code navigation
  - c) Version control systems
  - d) Integrated debugging and testing
- 7) Javascript:** Javascript is used for developing interactive and responsive web pages in a much easier way. Javascript will help to make the website responsive.

- a) Easily develop responsive websites
- b) Provides rich interfaces for developing interactive web pages
- c) It is used in both frontend and backend

## **Chapter 3**

### **Requirements and Analysis**

### **3.1 Problem Definition**

Currently, there are several recruitment platforms available in the market. But the main issue with them is most of the processes involved in hiring are carried out manually. Hundreds of people apply for jobs at a specific company. Some of the platforms have quite complicated user interfaces or poor GUI. Also, not all portals enable the candidates to develop a resume on the system, especially without watermarks. HRs are required to notify their desired candidates manually.

- **Manual Work:**

The existing systems are mainly dependent on manual work. The HRs are required to go through each Resume and shortlist a few best ones. After that, they are required to notify each candidate on their own. It is a quite lengthy process.

- **Resume Generator:**

Not all systems provide the feature of generating the resume on the website for free. Even if few do, a lot of them have very poor templates.

- **Storage:**

It is difficult to maintain records of a large number of crowds applying for the job. Manually organizing and analyzing data and carrying out interviews simultaneously for so many people is hectic. It is difficult for candidates as well to maintain hard copies of their necessary documents.

### **3.2 Requirements Specification**

The application developed is responsible to reduce or nullify the problems in the traditional recruitment process or existing systems. It should be freely available to everyone embedded and should have features that will reduce the manual work to a considerable

amount. The system developed will solve all the problems mentioned below:

- **Manual work:**

The system will ask for specific data for the further process of the interview from HR.

On the basis of the data, the system will generate a notification message and then forward it to the respective candidate via email. As a result of this, the HRs of the company wouldn't need to type the entire notification manually to every individual and update them about their application.

- **Resume Generation:**

The system will generate a resume for each candidate on the basis of the data they provided after filling out the form. The user interface of the resume will be formal yet attractive.

- **Storage:**

There won't be a necessity for recruiters to maintain a resume of candidates at their end. Everything will be stored in the system's database and data can be retrieved easily whenever required.

### **3.3 Planning and Scheduling**



*Fig 3.3.1 Gantt Chart*

<b>Tasks</b>	<b>Start Date</b>	<b>End Date</b>
Planning	15th June, 2021	2nd July, 2021
Research	21st June, 2021	24th July, 2021
Survey of Technologies	20th July, 2021	16th July, 2021
Documentation	8th August, 2021	16th January, 2022
Requirements and Analysis	10th August, 2021	3rd September, 2021
System Design	28th August, 2021	20th September, 2021
Implementation	26th October, 2021	3rd March, 2022
Testing	15th November, 2022	16th March, 2022

*Fig. 3.3.2 Gantt Chart Dates*

### 3.4 Hardware and Software Requirements

## **I. Hardware requirements**

1. **Server:** An HTTP server is required to host the web applications on browsers along with a domain name.
2. **Computer/ Laptop/ Mobile/ Tablet:** A device is needed to access the web application.
3. **Network connection:** Internet access is necessary and hence the system should have the required technologies needed for internet access.

## **II. Software requirements**

1. **Visual Studio Code 1.65:** PyCharm is the Python IDE used to develop python-based applications.
2. **PIP:** PIP is used as a package manager for python.
3. **Django 3.2.7:** It is a web framework to create and manage interactive websites or web applications.
4. **Browser:** A web browser is needed to access the web application.
5. **Network provider:** A network provider is important to use this web application.

## **3.5 Preliminary Product Description**

The system is mainly focusing on reducing and easing out the hectic and time-consuming task of the recruitment process. There are a lot of systems available in the market that offers job search and candidate hiring facilities. But the main feature that this system provides is that the system will notify the candidate about their selection and deselection on its own. Also, the candidate should be able to create a resume easily and download it for later use as well. But how can we achieve this?

The system will ask the candidate to fill out a form that will ask for some basic details of the candidate necessary for the resume. Later, the system will generate the resume template which will be easily downloadable for the candidate without any watermark. After the candidates apply for a specific job posted by some company, HR will need to add some basic information such as the time and date of the interview along with the location of the interview. On that basis, the system will then send email notifications on its own to the candidates informing them about their selection or deselection with additional data present if any.

This system will be very helpful for the recruiters to notify the candidate easily without needing to contact each candidate manually. It will also allow the candidates to develop a resume for free and download it for later use as well.

### **3.6 Conceptual Models**

## I. FlowChart:

### Definition:

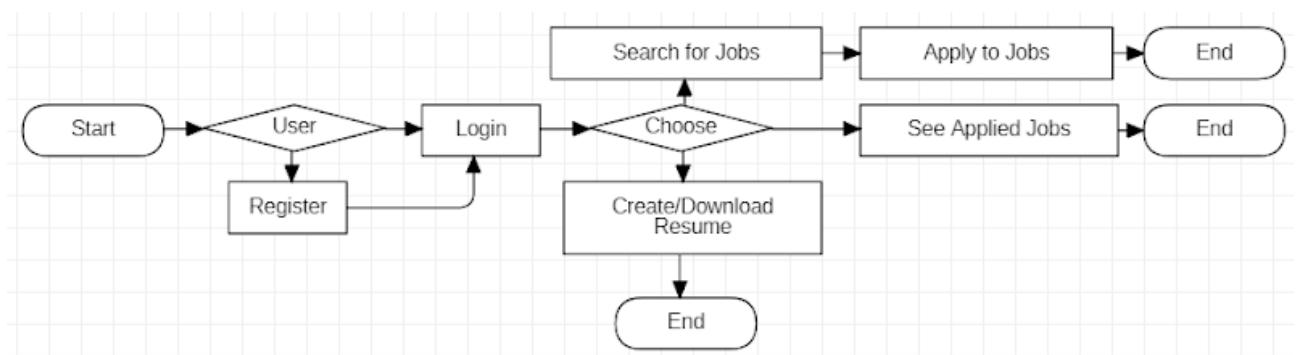
It represents the steps sequentially performed by a system.

### Symbols:

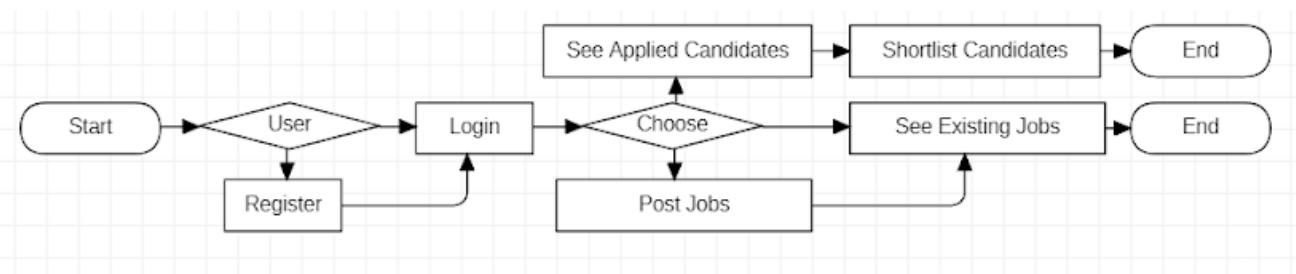
Symbol	Shapes	Description
Start/End		It represents the start point or endpoint of the system
Arrows		It represents the flow of steps
Process		It represents the processes performed by the system
Decision		It represents the conditions involved in the system for decision-making

Table no. 3.6.1 Symbols for flow chart

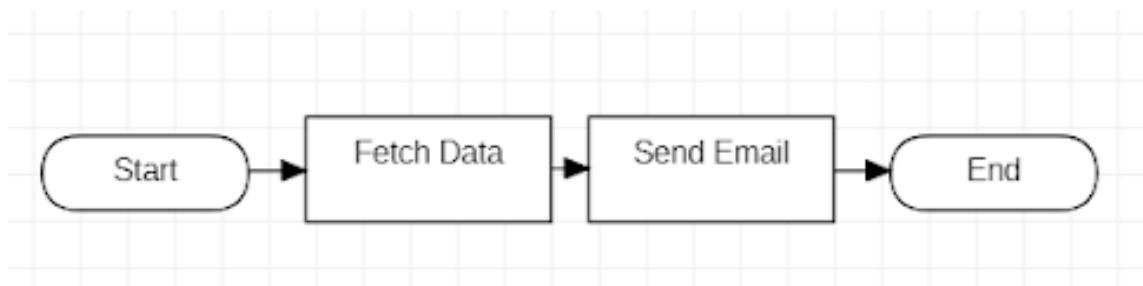
### Flow Charts:



*Fig. 3.6.1 Candidate Flow Chart*



*Fig. 3.6.2 Company Flow Chart*



*Fig. 3.6.3 System Flow Chart*

## Chapter 4

# System Design

## 4.1 Basic modules

The system comprises 3 modules. One is the Company module, the second is the candidate module, and the third is the system module.

### 4.1.1 Company module:

In this module, the company will first register itself on the system. After that, it will log in itself into the system. After that, the company either can add new job availabilities or else it can check the list of applications from previously added job availabilities.

In the add new job posts section, the company will first create a new job availability. It will provide basic details regarding the jobs viz. Job title, expected skills, and job responsibilities.

In the applicants' section, the candidate will see the list of candidates in tabular format. If the company wishes to notify the candidate regarding their selection then the company will go to the candidate's section and give the decision. If the decision is "Reject the application" then the system will send an email to the respective candidate informing them about their deselection. If the company chooses "Select the application" then HR is asked to fill in the date and the time scheduled for the next interview rounds along with the venue of the interview. Then, the email will be sent automatically to the applicant's mail id informing them about their selection.

### 4.1.2 Candidate module

In this section, candidates will first create a resume after registering and logging into the system. The system will then generate a resume template on the basis of the data provided by the candidate. The candidate will also be able to download the resume in pdf format.

### 4.1.3 System module

If the company wants to update the candidate about their application then the

company will fill out a form which will include basic details about the further interviews and all. Once the company fills it out, the system will send an email notification to the respective candidate about their selection and deselection along with any additional information if present.

## **4.2 Data Design**

### **I. ER Diagram:**

### **Definition:**

ER diagram, also known as the entity-relationship diagram is used to display the relationship between the entity sets which are stored in the database. It helps to understand the logical structure of the database. There are 3 main concepts in ER diagram viz. entity, attributes, and relationships.

### **Symbols:**

Symbol	Shapes	Description
Entity set		An entity is an object in the er diagram. A group of related entities is known as an entity set.
One to Many		This relationship in an ER diagram indicates that one entity in one table represents many relationships in another
Many to Many		This relationship in an ER diagram indicates that many entities in one table represent many relationships in another
One to One		This relationship in an ER diagram indicates that one entity in one table represents one relationship in another

*Table 4.2.1 Symbols for ER Diagram*

### **E-R Diagram**

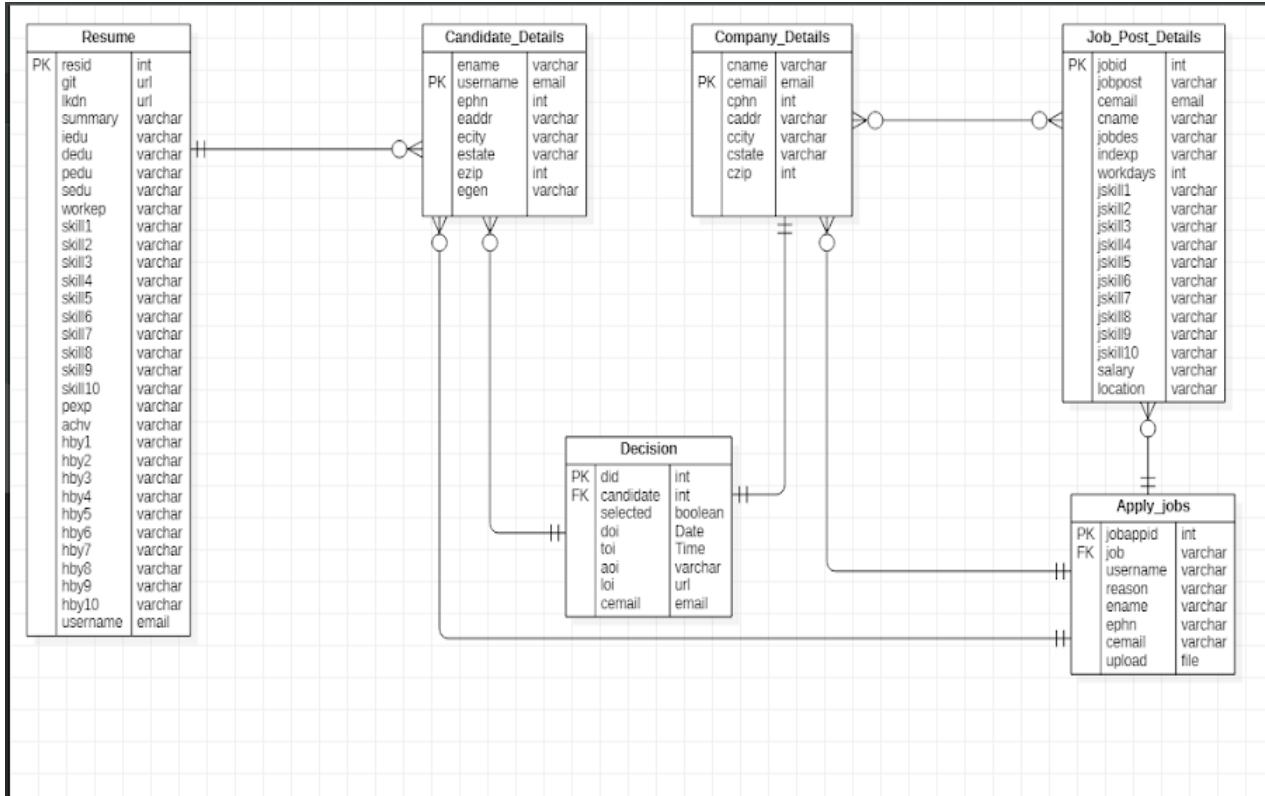


Fig. 4.2.1 ER Diagram

#### 4.2.1 Schema Design

	cname	cemail	cphn	caddr	ccity	cstate	czip
▶	Infosys	infosys@info.in	8779660658	Shreenivas C.H.S.	Thakurli	Maharashtra	421201
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Table 4.2.1.1 Company Details

	ename	username	ephn	eaddr	ecity	estate	ezip	egen
▶	Anagha Vinayak Kamat	anaghakamat@gmail.com	8779660658	Shreenivas C.H.S.	Thakurli	Maharashtra	421201	female
*	Anagha Vinayak Kamat	anaghavinayakkamat.model@gmail.com	8779660658	Shreenivas C.H.S.	Thakurli	Maharashtra	421201	female
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Table 4.2.1.2 Candidate Details

	resi	git	lkdn	summary	iedu	dedu	pedu	sedu	workexp	skill1	skill2	skill3	skill4	skill5	skill6	skill7	skill8	skill9	skill10
▶	1	http...	htt...	lorem ip...	Mu...	BSc...	2022	9/1...	0-3 ye...	An...	Ba...	Dat...	Co...	Dat...	Re...	So...	S...	Sp...	Andr...
*	2	http...	htt...	lorem ip...	Mu...	BSc ...	2022	9/1...	0-3 ye...	AS...	Cl...	Dat...	Dat...	Flut...	Ful...	IOT	S...	Sh...	Sprin...
*	NULL	NULL	NULL	NULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

Table 4.2.1.3.1 Resume-1

	skill9	skill10	pexp	achv	hby1	hby2	hby3	hby4	hby5	hby6	hby7	hby8	hby9	hby10	username
▶	Sp...	Andr...	ht...	htt...	Dance	Singing	Reading	Trav...	BasketBall	Badminton	Chess	Carrom	Cycling	Exploring	anagha...
*	Sh...	Sprin...	ht...	htt...	Dance	Singing	Reading	Trav...	BasketBall	Badminton	Chess	Carrom	Cricket	Exploring	anagha...
*	NULL	NULL	NULL	NULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	NULL

Table 4.2.1.3.2 Resume-2

	jobid	jobpost	cemail	cname	jobdes	indexp	workda	jskill1	jskill2	jskill3	jskill4	jskill5	jskill6	jskill7	jskill8	jskill9	jskill10	salary	location
▶	1	Artific...	infos...	Info...	lore...	0-3 ...	5	Co...	Dat...	Da...	Cy...	Clo...	Dja...	Arti...	Re...	UI...	We...	5 LPA	Maha...
*	NULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

Table 4.2.1.5 Job Details

	jobappid	username	reason	ename	ephn	cemail	upload	job_id
▶	1	anagha@gmail.com	lorem ipsum lore...	Anagha Kamat	8779660658	infosys@info.in	resume_jg3t94C.pdf	1
2	anaghakamat@gmail.com	lorem ipsum	Anagha Kamat	8779660658	infosys@info.in	resume_Ewxb3dd.pdf	1	
3	anaghavinayakkamat.mo...	lorem ipsum lore...	Anagha Kamat	8779660658	infosys@info.in	resume_vSwM7wh.pdf	1	
*	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

Table 4.2.1.4 Apply to Jobs

	did	selected	doi	toi	aoi	loi	cemail	candidate_id
	1	0					infosys@info.in	3
	2	1	2022-03-04	15:26:09	HULL	https://www.youtube.com/wat...	infosys@info.in	3
	3	1	2022-03-04	15:26:09	Shreenivas C.H.S.	HULL	infosys@info.in	3
▶*	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

Table 4.2.1.5 Decision

## 4.2.2 Data Integrity and Constraints

Column	Type	Default Value	Nullable	Character Set	Collation	Privileges
ename	varchar(50)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references
username	varchar(254)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references
ephn	bigint		NO			select,insert,update,references
eaddr	varchar(200)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references
ecity	varchar(50)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references
estate	varchar(50)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references
ezip	int		NO			select,insert,update,references
egen	varchar(20)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references

Table 4.2.2.1 CandidateDetails

Column	Type	Default Value	Nullable	Character Set	Collation	Privileges
cname	varchar(50)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references
cemail	varchar(254)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references
cphn	bigint		NO			select,insert,update,references
caddr	varchar(200)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references
ccity	varchar(50)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references
cstate	varchar(50)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references
czip	int		NO			select,insert,update,references

Table 4.2.2.2 Candidate Details

Column	Type	Default Value	Nullable	Character Set	Collation	Privileges	Extra
resid	int		NO			select,insert,update,references	auto_increment
git	varchar(200)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
lkdn	varchar(200)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
summary	varchar(500)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
iedu	varchar(100)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
dedu	varchar(100)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
pedu	varchar(20)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
sedu	varchar(20)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
workexp	varchar(20)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
skill1	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
skill2	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
skill3	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
skill4	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
skill5	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	

Table 4.2.2.3.1 Resume-1

Column	Type	Default Value	Nullable	Character Set	Collation	Privileges	Extra
skill9	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
skill10	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
pexp	varchar(200)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
achv	varchar(200)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
hby1	varchar(50)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
hby2	varchar(50)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
hby3	varchar(50)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
hby4	varchar(50)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
hby5	varchar(50)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
hby6	varchar(50)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
hby7	varchar(50)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
hby8	varchar(50)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
hby9	varchar(50)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
hby10	varchar(50)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	

Table 4.2.2.3.2 Resume-2

Column	Type	Default...	Nullable	Character Set	Collation	Privileges	Extra
jobid	int		NO			select,insert,update,references	auto_increment
jobpost	varchar(100)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
cemail	varchar(50)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
cname	varchar(50)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
jobdes	varchar(900)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
indexp	varchar(50)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
workdays	varchar(50)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	

Table 4.2.2.4.1 Job Details - 1

Column	Type	Default...	Nullable	Character Set	Collation	Privileges	Extra
workdays	varchar(50)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
jskill1	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
jskill2	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
jskill3	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
jskill4	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
jskill5	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
jskill6	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
jskill7	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
jskill8	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
jskill9	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
jskill10	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
salary	varchar(50)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
location	varchar(50)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	

Table 4.2.2.4.2 Job Details - 2

Column	Type	Default Value	Nullable	Character Set	Collation	Privileges	Extra
jobappid	int		NO			select,insert,update,references	auto_increment
username	varchar(50)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references	
reason	varchar(900)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references	
ename	varchar(50)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references	
ephn	bigint		NO			select,insert,update,references	
cemail	varchar(254)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references	
upload	varchar(100)		YES	utf8mb4	utf8mb4_0900_...	select,insert,update,references	
job_id	int		NO			select,insert,update,references	

Table 4.2.2.5 Apply to Jobs

Column	Type	Default Value	Nullable	Character Set	Collation	Privileges	Extra
did	int		NO			select,insert,update,references	auto_increment
selected	tinyint(1)		NO			select,insert,update,references	
doi	varchar(20)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
toi	varchar(20)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
aoi	varchar(200)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
loi	varchar(200)		YES	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
cemail	varchar(254)		NO	utf8mb4	utf8mb4_0900_ai_ci	select,insert,update,references	
candidate_id	int		NO			select,insert,update,references	

Table 4.2.2.6 Decision

## **4.3 Procedural design**

### **4.3.1 Algorithm design**

#### **I. Candidate**

Step 1: Start

Step 2: If the user is new, first register and then redirect to the login page. If the user is existing, then redirect to the login page. If invalid details, then ask to fill in the details again. If a user is existing but still registers, then redirect to the login page.

Step 3: Create a resume

Step 4: View resume and download resume

Step 4: Either check existing applications or search for jobs

Step 5: Apply for jobs

Step 7: Finish

#### **II. Company**

Step 1: Start

Step 2: If the user is new, first register and then redirect to the login page. If the user is existing, then redirect to the login page. If invalid details, then ask to fill in the details again. If a user is existing but still registers, then redirect to the login page.

Step 3: Either check applications or post new jobs

Step 4: If checking applications and wish to notify them then fill the data asked

Step 5: Finish

### **III. System**

Step 1: Start

Step 2: Fetch the data from the company

Step 6: Send email notifications

Step 7: Finish

#### **4.3.2 Logical Design**

## I. Activity Diagram:

### Definition:

The activity diagram is also known as the behavioral diagram. It represents the behavior of the system. It represents the control flow of any system right from the starting point to the end.

### Symbols:

Symbols	Shapes	Description
Start Node		It indicates the start of the system
Decision Node		It indicates the decision to be made between two activities
Action State		It indicates the activities performed by the system
End Node		It indicates the end of the system
Control Flow		It represents the flow of the system

Table 4.3.2.1 Symbols for Activity Diagram

### Activity Diagrams:

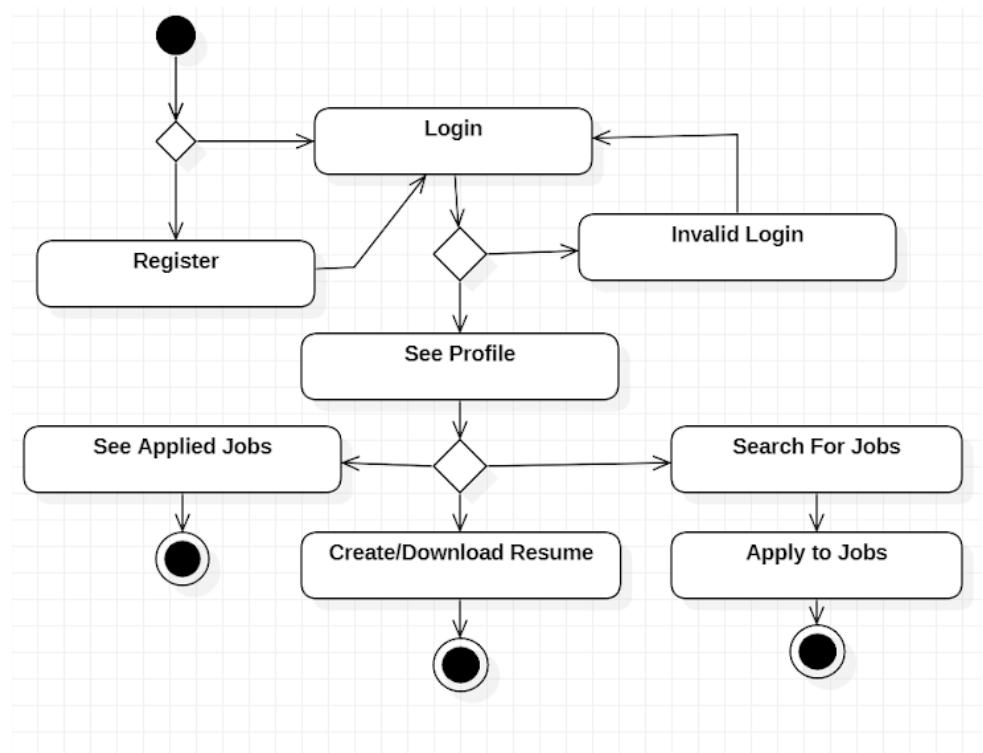


Fig 4.3.2.1 Activity Diagram Candidate

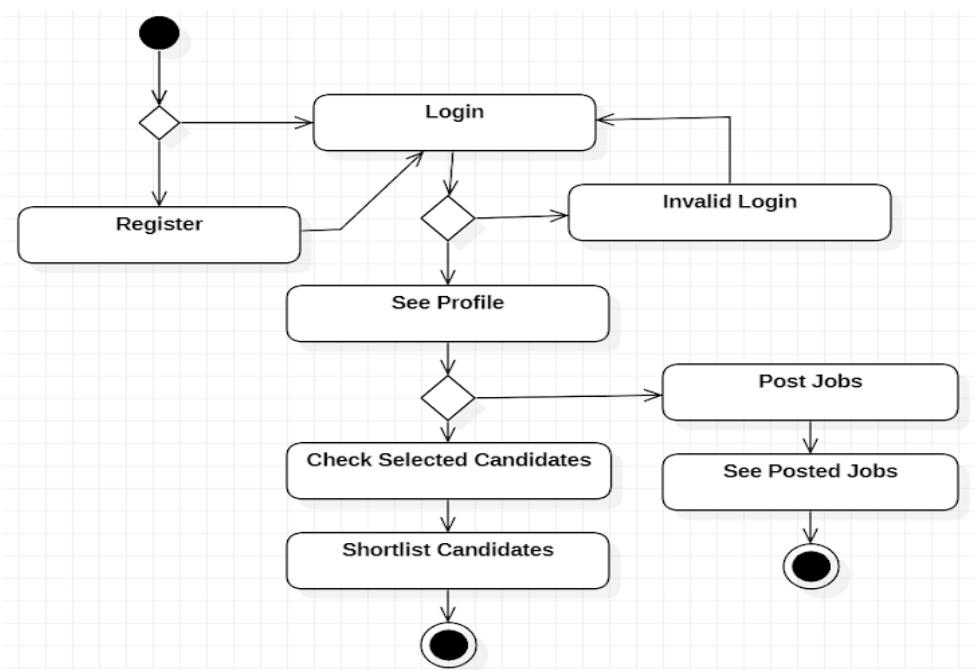
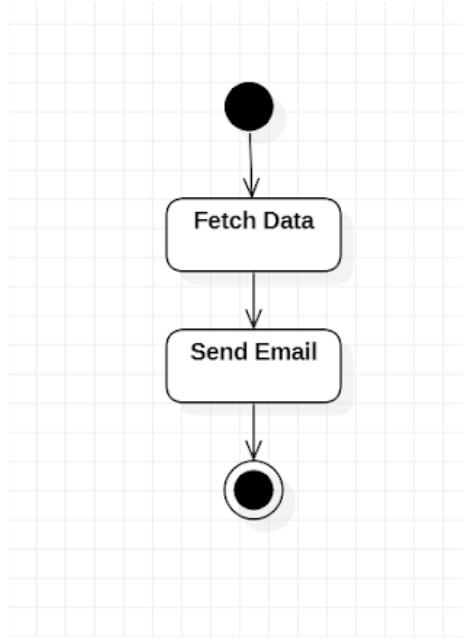


Fig. 4.3.2.2 Activity Diagram Company



*Fig. 4.3.2.3 Activity Diagram System*

## **4.4 User Interface Design**

### **I. Definition:**

Use case diagram is also known as a Behavior model or diagram. It simply describes the interaction between the users and the system. It describes different actions that the system performs to achieve the goals of one or multiple users of a system. It is also said that Use Case diagrams are blueprints of the system. It is used to define the simple and graphical representation of the system's operations.

Use-case diagrams are a good communication tool between stakeholders. The diagrammatical approach and symbols they use are easily understandable by non-tech people as well. This grabs the attention of people towards Use Cases to provide a better understanding of the interaction between users and the system.

## II. Symbols:

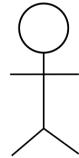
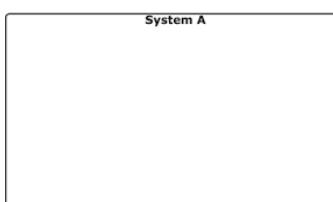
Symbols	Shapes	Description
Use Cases		This symbol is used to denote different operations performed by the system.
Actors		This symbol is used to denote all the users or customers that will be using the system.
Direct Associations		This symbol indicates that the control flows directly from an actor to a use case.
System boundary boxes		This box defines a system scope for all use cases. All cases outside the box are considered outside of the system scope.

Table 4.4.1 Symbols used in use case diagram

## III. Actors:

Actors involved in the system are:

1. Company
2. Candidate
3. System

#### IV. Use Cases:

1. Register
2. Login
3. Create/Download CV
4. Post jobs
5. Apply for jobs
6. Shortlist Candidate
7. Send Email

#### V. Use Case Diagram

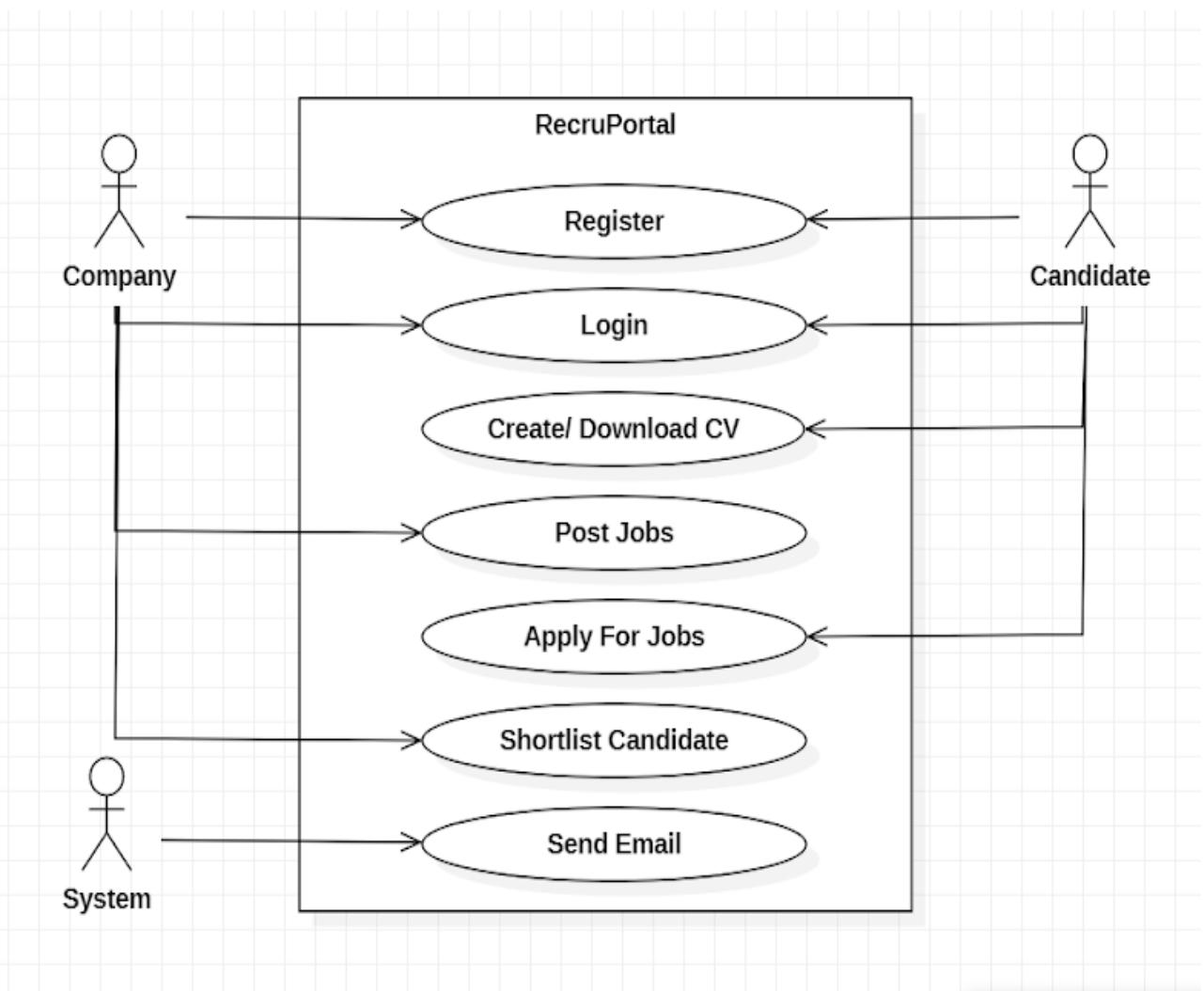


Fig. 4.4.1 Use Case Diagram

## 4.5 Security Issues

1. **Privacy:** Data is shared over the internet. So chances of the system getting hacked are present. Once the hacker successfully gets access to the data then he will be able to access the personal information of the users.
2. **Cheats:** People can create fake company IDs and upload job availabilities there. The candidates searching for the job might get trapped and their details can then go into the wrong hands.
3. **Betrayal:** There are chances that the company will post a particular job and hire someone for that post. But later on, the company might ask that employee to do some other work that the person is not supposed to do.
4. **Loot:** The fake company can ask for the employees' bank details and loot all the money from their accounts.

## **4.6 Test Cases Design**

To ensure that the software is working properly we need to check different parts of the software. For the same purpose, we need to identify different areas of the system to be tested. So in this topic, we will be identifying different test cases required for testing.

First, we will need to check for validation and verification of the data entered by the user. Heading forward, we need to identify whether the correct data is displayed to the authorized user or not. This step will ensure secured data privacy.

In the next step, we will have to ensure whether the system can efficiently send email messages to the candidate or not regarding their selection or deselection. Also, whether it shares the necessary data with the respective user will also be taken into account.

# **Chapter 5**

# Implementation and Testing

## 5.1 Coding Details and Efficiency

### 5.2.1 Coding Details

#### views.py

```
# Candidate Registration Details

def candireg(request):

    if request.method == 'GET':

        return render(request, 'candireg.html')

    else:

        ename=request.POST['ename']

        username=request.POST['username']

        epasswd=request.POST['epasswd']

        ephn=request.POST['ephn']

        eaddr=request.POST['eaddr']

        estate=request.POST['estate']

        ecity=request.POST['ecity']

        ezip=request.POST['ezip']

        egen=request.POST['egen']

        error_message = None

    # form after error

    value={'ename': ename, 'username': username, 'eph':ephn, 'eaddr':eaddr, 'estate':estate,
    'ecity':ecity, 'ezip':ezip, 'egen':egen}
```

```

# validation

if len(ephn)<10 or len(ephn)> 10:

    error_message ='Check all your details'

    data={'error': error_message, 'values':value}

    return render(request, 'candireg.html', data)

elif User.objects.filter(username=username).exists():

    error_message ='Email already exists please login to your account'

    data={'error': error_message, 'values':value}

    return render(request, 'candidlogin.html', data)

elif len(epasswd)<8 or len(epasswd)>16:

    error_message ='maintain the range of password'

    data={'error': error_message, 'values':value}

    return render(request, 'candireg.html', data)

else:

    candet_db=Can_det(ename=ename,      username=username,      ephn=ephn,
eaddr=eaddr, estate=estate, ecity=ecity, ezip=ezip, egen=egen)      # store data into database

    candet=User.objects.create_user(username=username, password=epasswd) # create user

    candet.first_name=ename

    candet.email=username

    candet_db.save()

    candet.save()

    return render(request, 'candidlogin.html')

# Candidate Login

def candidlogin(request):

```

```

if request.method=="POST":

    username = request.POST.get('username')

    epasswd=request.POST.get('epasswd')




    error_message = None

        loguser=authenticate(username=username, password=eppasswd)          # user
authentication

    if loguser is not None:

        login(request, loguser)

        log_can_det=Can_det.objects.filter(username=username)

        request.session['username'] = username

        return render(request, 'canprof.html', {'edet':log_can_det})

    else:

        error_message = "Incorrect credentials"

        return render(request,'candidlogin.html', {'error': error_message})

else:

    return render(request, 'candidlogin.html')

```

## # Update Company Details

@login\_required

```

def compprof_update(request):
    context = {}

    if request.method == "GET":
        comp_upd = Com_det.objects.filter(cemail=request.session['cemail'])

        return render(request, 'compprof_update.html', {'cdet': comp_upd})

    else:
        cname = request.POST['cname']

        cphn = request.POST['cphn']

        caddr = request.POST['caddr']

        ccity=request.POST['ccity']

        cstate=request.POST['cstate']

        czip = request.POST['czip']

        # fetch user data

        cuser = User.objects.get(username=request.session['cemail'])

        cuser.first_name = cname

        cuser.save()

```

## **models.py**

# here we define the database design

```
from xml.parsers.expat import model
```

```

from django.db import models

# Candidate Registration

class Can_det(models.Model):

    ename=models.CharField(max_length=50, default=None)

    username=models.EmailField(unique=True, primary_key=True)

    ephn=models.BigIntegerField()

    eaddr=models.CharField(max_length=200)

    ecity=models.CharField(max_length=50)

    estate=models.CharField(max_length=50)

    ezip=models.IntegerField()

    egen=models.CharField(max_length=20)

    @staticmethod

    def get_candet_by_email(username):

        try:

            return Can_det.objects.get(username=username)

        except:

            return False

    class Meta:

        verbose_name_plural = "candidate_details"

```

### **5.2.1 Coding Efficiency**

The project is built using Python and Django. We are using the COCOMO I model to calculate the efficiency of the code. A project is classified into 3 types: organic,

semi-detached, and embedded. As the project is developed at the basic level, the project is classified as organic. Hence. The formula for the organic model becomes

$$\text{Effort} = a(\text{KLOC})^b$$

$$\text{Time} = c(\text{Effort})^d$$

$$\text{Persons required} = \text{Effort}/\text{Time} \quad \text{where, } a = 2.4, b = 1.05, c = 2.5, d = 0.38$$

In this project, LOC are 878.

Therefore, the formula for effort becomes

$$\text{Effort} = 2.4(853)^{1.05} \text{ PM}$$

$$\text{Effort} = 2957.184 \text{ PM}$$

Estimation of development time is

$$T_{\text{dev}} = 2.5(2957.184)^{0.38} \text{ Months}$$

$$T_{\text{dev}} = 52.1 \text{ Months}$$

### 5.3 Testing

In the testing part, the software will be tested on a different basis. Three testing approaches will be used to check whether the software is working efficiently or not. The three testing methodologies used are

1. **Unit Testing:** In this type of testing, each unit i.e. each function of the system will be tested. This testing will be done at the time of development. If any error occurs then it will be immediately resolved. In our case, some of the units of our system are the registration form, login form, profile display, etc.
2. **Integration Testing:** Combining multiple units of a system makes a module. A module is a collection of code for related units. Here we will check whether the software works efficiently after combining the unit. The modules in this system will be the candidate module, company module, and system module.
3. **System Testing:** Here, we will check whether the entire system runs properly after combining all the modules without any bugs. This testing will be done after the development of the code.
4. **Compatibility Testing:** In this testing, we test whether the web application works efficiently on different browsers and different operating systems. Testing is done by running the website on different browsers including Firefox, Microsoft Edge, and Chrome.
5. **Performance Testing:** In this testing, we check that how well a web application can run at different network speeds and what is the behavior of the website under normal load and peak load.
6. **Database Testing:** Here we test whether the necessary queries are performed accurately in less time or not. Whether the test data retrieved from the database is accurately displayed on the system or not.
7. **Usability Testing:** In this testing, we check whether the UI/UX design of the web application functions accurately and whether the user is able to easily work on the system.

## Chapter 6

## Results and Discussions

### 6.1 Test Reports

<b>Test Case ID</b>	<b>Test Case Name</b>	<b>Test Description</b>	<b>Input</b>	<b>Expected Output</b>	<b>Actual Output</b>	<b>Result</b>
T01	Candidate Registration Form Testing	Check whether the email field is getting proper input or not	Email: abc	Error alert should be displayed informing to put correct email id	Error alert displays that informs the user to enter correct data	Pass
T02	Candidate Registration Form Testing	Check whether the user maintains the range of the password or not	Password: anu	Error message should be generated if the password is not within the range of 8 to 16 characters	Generate an error alert asking to maintain the specified range of the password	Pass
T03	Candidate Registration Form Testing	Check whether the contact number field is getting proper input or not	Phone: 12345as	Alert should generate asking to enter correct phone number	Generate an error alert that asks to provide correct phone number	Pass
T04	Candidate Registration Form Testing	Check whether email entered is	Email: abc@gmail.com	User should be redirected to the login page and an	Redirects to login page and alert generates	Pass

		already a registered to the user or not		alert should generate informing them that user already exists	saying user already exist	
T05	Candidate Registration Form Testing	Check whether all the data is entered or not	Name: ABC  Email: <a href="mailto:abc@gmail.com">abc@gmail.com</a>  Password: abcdefghijklm  Phone: 1234567890  Address: Main Street  City: XYZ  State: Maharashtra  Zip: 111222  Gender: F	If all data is entered then save the data in database and redirect to login page	All the data is entered hence save the data and redirect the user to login page	Pass
T06	Candidate Login Form Testing	Check whether all the data is entered or not	Email: <a href="mailto:abc@gmail.com">abc@gmail.com</a>  Password: abcdefghijklm	It should verify the user and redirect to the profile page	Verifies the user and redirects to the profile page	Pass
T07	Candidate Login Form Testing	Verify whether the email exists or	Email: abc@	Alert message should generate	Alert message is shown that indicates the	Pass

		not		saying user doesn't exist	user doesn't exist	
T08	Candidate Login Form Testing	Verify whether password matches or not	Password: abc	Invalid details error should generate	Invalid details error generate	Pass
T09	Candidate Profile Page Testing	Check whether all data related to the candidate must be visible on this page	NIL	All the data should be displayed	All the data is displayed	Pass
T10	Navigation to Resume Form Page Testing	Check whether on clicking the link provided user should redirect to resume form page	NIL	On clicking the link provided user should redirect to resume form page	On clicking the link provided user redirects to resume form page	Pass
T11	Resume Form testing	Email field should be validated	Email: abc@	Alert message should generate saying user doesn't exist	Alert message is shown that indicates the user doesn't exist	Pass

T12	Resume Form Testing	User can only fill the resume form once	Email: abc@gmail.com	Alert message should generate indicating resume already exist and redirect to template page	Alert message should is generated that indicates resume already exist and redirect to template page	Pass
T13	Resume Form Testing	Necessary data should be filled and resume template must be generated	Form data	Resume template should generate after filling the form with necessary data	Resume template is generated after filling the form with necessary data	Pass
T14	Resume download Testing	Resume should be ready to download after button click	Button click	Resume should download	Resume downloads	Pass
T15	Job Search Page Testing	Check whether all the jobs available on the web	NIL	All the jobs available on the web site should be visible to the	All the jobs available on the web site is visible to the	Pass

		site is displayed or not		candidate	candidate	
T16	Job Search Page Testing	Check whether the job filter option is working or not	Job = Backend Developer	Jobs related to only backend developer should be displayed	Jobs related to only backend developer are displayed	Pass
T17	Job Search Page Testing	Check whether the job filter option is working or not	Job = React	If the job for react position is not available then nothing should be displayed	If the job for react position is not available hence nothing is displayed	Pass
T18	Job Search Page Testing	Check whether the apply job button is working or not	Button Click	On button click the user should be navigated to that particular job application page	On button click the user is navigated to that particular job application page	Pass
T19	Apply Job Form Testing	Check whether the	Form Data	The data should be saved in the	The data should be saved in the	Pass

		expected data is entered by the user		database and the user should be redirected to the My Applications	database and the user is redirected to the My Applications	
T20	Update Profile Page	Check whether the candidate is able to update the profile details	Display all the data with editable texts	Changes in data must be reflected in the database and to the user as well	Changes in the data is reflected in the database and to the user as well	Pass
T21	Resume Update Page	Check whether the candidate is able to update the resume details	Display all the data with editable texts	Changes in data must be reflected in the database and to the user as well	Changes in the data is reflected in the database and to the user as well	Pass
T22	Resume Delete Page	Check whether the user is able to delete resume	Button Click	Resume for that particular user should delete	Resume for that particular user is deleted	Pass
T23	Account Delete	Check whether	Button Click	Account must be	Account must be	Pass

		the candidate can delete the account		deleted and the user should navigate to the registration page	deleted and the user is navigated to the registration page	
T24	Candidate Logout	Check whether the user can logout from the session or not	Button Click	User should get logged out and redirected to the login page	User gets logged out and redirected to the login page	Pass
T25	Company Registration Form Testing	Check whether all the data is entered or not	Name: ABC  Email: <a href="mailto:abc@gmail.com">abc@gmail.com</a>  Password: abcdefgh  Phone: 1234567890  Address: Main Street  City: XYZ  State: Maharashtra  Zip: 111222	Save data in the database and redirect the user to the login page	Data is saved in the database and the user redirects to login page	Pass
T26	Company Registration Form Testing	Check whether email field is getting	Email: abc	Error alert should be displayed informing to	Error alert displays that informs the user to enter	Pass

		proper input or not		put correct email id	correct data	
T27	Company Registration Form Testing	Check whether the user maintains the range of the password or not	Password: anu	Error message should be generated if the password is not within the range of 8 to 16 characters	Generate an error alert asking to maintain the specified range of the password	Pass
T28	Company Registration Form Testing	Check whether the contact number field is getting proper input or not	Phone: 12345as	Alert should generate asking to enter correct phone number	Generate an error alert that asks to provide correct phone number	Pass
T29	Company Registration Form Testing	Check whether email entered is already a registered to the user or not	Email: abc@gmail.com	User should be redirected to the login page and an alert should generate informing them that user already exists	Redirects to login page and alert generates saying user already exist	Pass
T30	Company	Check	Email:	It should	Verifies the	Pass

	Login Form Testing	whether all the data is entered or not	<a href="mailto:abc@gmail.com">abc@gmail.com</a> Password: abcdefgh	verify the user and redirect to the profile page	user and redirects to the profile page	
T31	Company Login Form Testing	Verify whether the email exists or not	Email: abc@	Alert message should generate saying user doesn't exist	Alert message is shown that indicates the user doesn't exist	Pass
T32	Company Login Form Testing	Verify whether password matches or not	Password: abc	Invalid details error should generate	Invalid details error generate	Pass
T33	Company Profile Page Testing	Check whether all data related to the company must be visible on this page	NIL	All the data should be displayed	All the data is displayed	Pass
T34	Job Search Page Testing	Check whether all the jobs available on the web site is	NIL	All the jobs available on the web site should be visible to the candidate	All the jobs available on the web site is visible to the candidate	Pass

		displayed or not				
T35	Job Search Page Testing	Check whether the job filter option is working or not	Job = Backend Developer	Jobs related to only backend developer should be displayed	Jobs related to only backend developer are displayed	Pass
T36	Job Search Page Testing	Check whether the job filter option is working or not	Job = React	If the job for react position is not available then nothing should be displayed	If the job for react position is not available hence nothing is displayed	Pass
T37	Job Search Page Testing	Check whether the apply job button is working or not	Button Click	On button click the user should be navigated to that particular job application page	On button click the user is navigated to that particular job application page	Pass
T38	Job Detail Form Testing	Check whether the	Form Data	The data should be saved in the	The data should be saved in the	Pass

		expected data is entered by the user		database and the user should be redirected to the My Applications	database and the user is redirected to the My Applications	
	My Jobs Page Testing	Check whether the company can see all the job vacancies posted	NIL	All the job vacancies should be visible	All the job vacancies are visible	Pass
T39	Applied Candidates Page Testing	Check whether all the application s for the jobs are visible	NIL	All the jobs applications should be visible	All the jobs applications on the web site is visible	Pass
T40	Applied Candidates Page Testing	Check whether the “give decision” button is working	NIL	User should be redirected to the Give Decision Page	User is redirected to the Give Decision Page	Pass
T41	Applied Candidates Page	Check whether date	Date: 30/05/2022	Past dates should be disabled	Past dates are disabled	Pass

	Testing	validation is working or not				
T42	Applied Candidates Page Testing	Check whether corrective actions are made after form submission	Button Click	Save the data to the database and if “I’m selecting” option is chosen then email should be sent indicating the selection of the candidate else a rejection email must be sent	Save the data to the database and if “I’m selecting” option is chosen thus an email is sent indicating the selection of the candidate else a rejection email is sent	Pass
T43	Update Profile Page	Check whether the company is able to update the profile details	Display all the data with editable texts	Changes in data must be reflected in the database and to the user as well	Changes in the data is reflected in the database and to the user as well	Pass
T44	Account Delete	Check whether the	Button Click	Account must be deleted and	Account must be deleted and	Pass

		company can delete the account		the user should navigate to the registration page	the user is navigated to the registration page	
T45	Company Logout	Check whether the user can logout from the session or not	Button Click	User should get logged out and redirected to the login page	User gets logged out and redirected to the login page	Pass

Table. 6.1.1 Test Reports

## 6.2 User Documentation

In this section, screenshots of all the parts of the web application along with information related to it are given. The section will be divided into 2 main modules. The candidate module and the company module.

### 6.2.1 Candidate Module

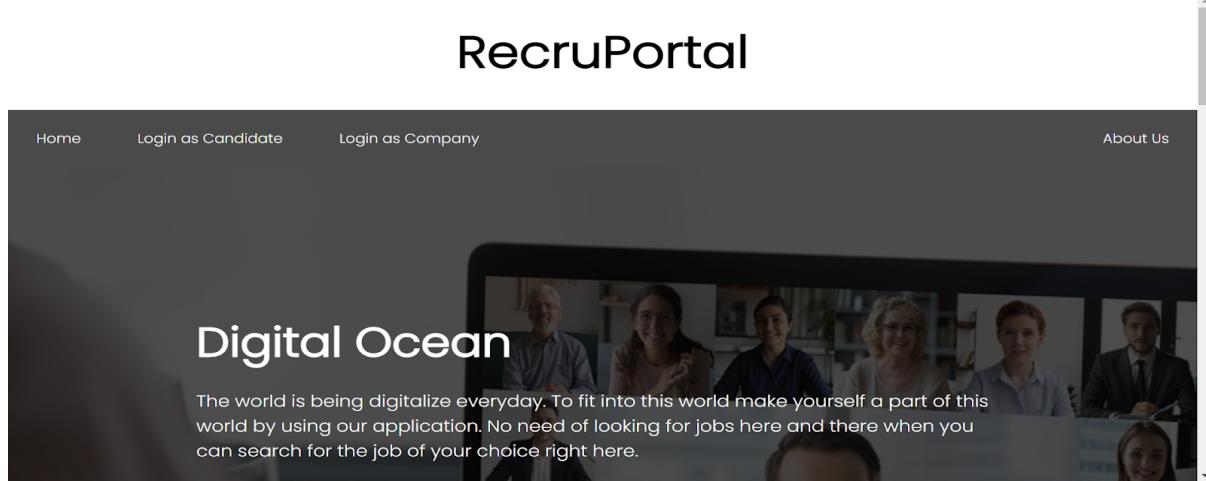


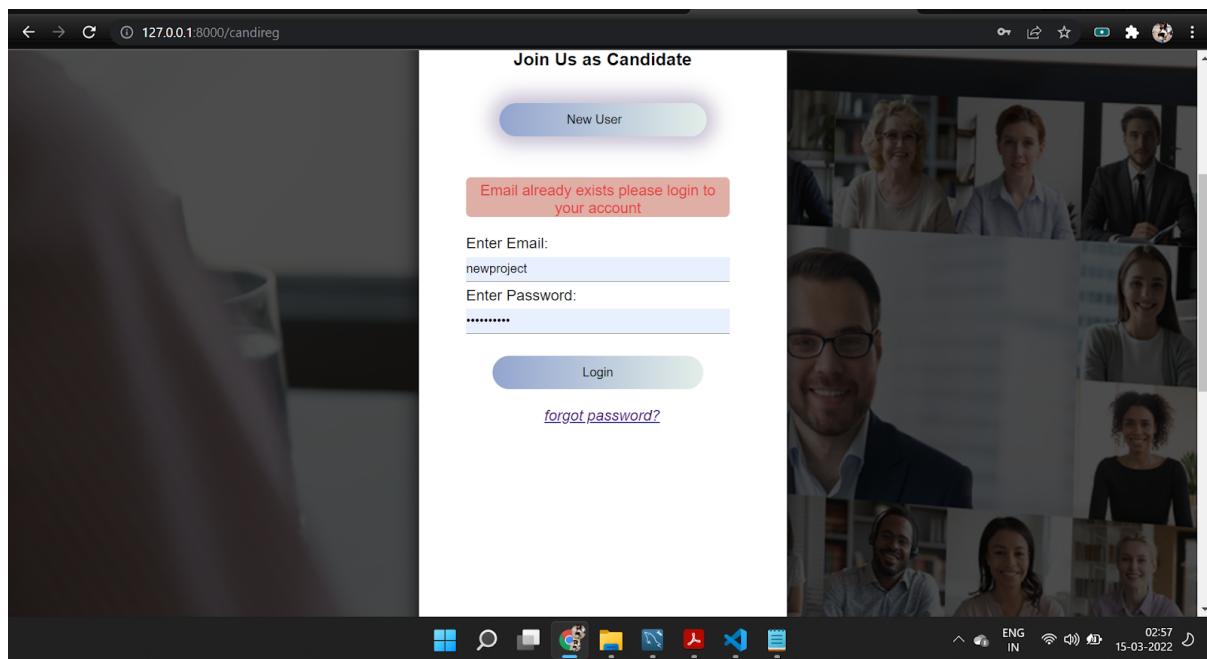
Fig. 6.2.1 Home Page

The above page is the first page that loads after the system runs

A screenshot of the Candidate Registration Page. The title "Join Us as Candidate" is at the top. There are two buttons: "Existing User" (blue) and "New User" (red). The "New User" button has a red error message box above it stating "maintain the range of password". Below are input fields for Name, Email, Password, Phone, Address, City, State, Zip, and Gender (Male/Female). A "Register" button is at the bottom. To the right of the form is a grid of video preview thumbnails.

Fig. 6.2.2 Candidate Registration Page

A sample form is filled. Here the user didn't maintain the specified range of the passwords and hence, the error was generated.



*Fig. 6.2.3 Login Page with error validation.*

The alert message was shown because the candidate tried to register using an existing email account and hence was redirected to the login page with an alert message

The screenshot shows the RecruPortal user profile page. The top navigation bar includes links for "My Profile", "My Resume", "Search jobs", "My Applications", and "Logout". The main content area displays a grid of profile details: Name (Anagha Vinayak Kamat), Email (anaghakamat@gmail.com), Contact No. (8779660658), and Address (Shreenivas C.H.S., Thakurli). To the right are two buttons: "Create Resume" and "Edit Profile".

*Fig. 6.2.4 User Profile Page*

This page displays the basic profile details of the candidate

## Enter details for your resume here

Please enter the same email that you used during registration

**Self Details**

Email:

GitHub Profile:

LinkedIn Profile:

Summary:  
max 500 words

*Fig. 6.2.5 Resume Form*

This is a form for creating a resume of the user. It also has different validations to verify whether the user is not creating multiple emails or whether the user is putting valid information or not.

**ANAGHA VINAYAK KAMAT**  
Email: anaghakamat@gmail.com | Phone: 0779660658  
🔗 <https://www.youtube.com/watch?v=KAHGxUqmE5Q>  
🔗 <https://www.youtube.com/watch?v=KAHGxUqmE5Q>

**SUMMARY**  
Lorem ipsum lorem ipsum lorem ipsum lorem ipsum lorem ipsum lorem ipsum

**EXPERIENCE**  
0-3 years

**EDUCATION**  
Mumbai University  
BSc. Information Technology  
2022  
9/10 cgpa

**PROJECTS / WORK SAMPLES**  
<https://www.youtube.com/watch?v=F39yacPm1o&t=48s>

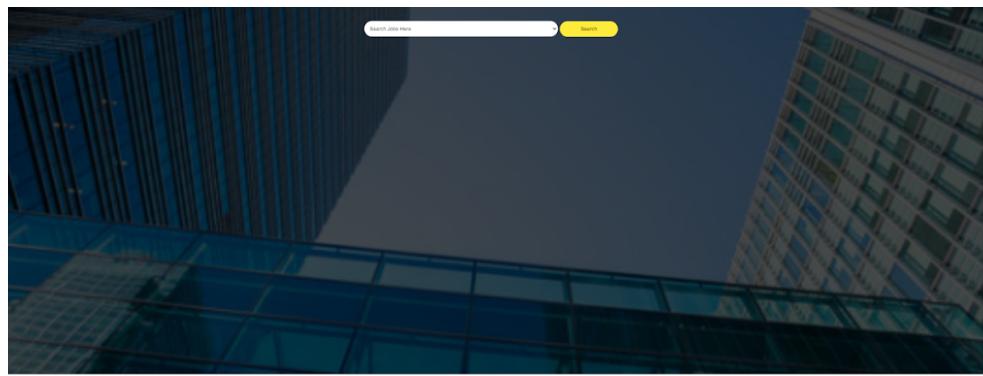
**SKILLS**

Analytics	Backend Development	Data Science	Computer	Database Design
React JS	Software Testing	SDLC	Springboot	Android App Development

**ACHIEVEMENTS**  
<https://www.youtube.com/watch?v=F39yacPm1o&t=48s>

*Fig. 6.2.6 Resume template*

The above resume will be generated after filling out the form



Artificial Intelligence Scientist		Maharashtra
lorem ipsum		
Infosys		Skills Required

Fig. 6.2.7.1 Job Search Page

A screenshot of a job search website showing a detailed job listing for an Artificial Intelligence Scientist position at Infosys in Maharashtra. The listing includes a skills matrix and contact information.

Artificial Intelligence Scientist

Infosys

Skills Expected

Computer Vision	Data Analytics	Data Science	Cyber Security	Cloud Computing
Django	Artificial Intelligence	React JS	UI/UX Design	Web Development
Industry Experience	0-2 years		Working Days	0 days

infosys@info.in

Apply for Job

Fig. 6.2.7.2 Job Search Page

A search box is provided for candidates to search for the job of their will. Below, a list of all the jobs available will be displayed. As of now, there is only one job available.

RecruPortal

My Profile   My Resume   Search jobs   My Applications   Logout

Select the Company:

Infosys

Name:  Contact No.:  Email:  Upload your resume:

Why should we hire you?

*Fig. 6.2.8 Job Application Form*

After clicking on the apply button of the job, the candidate will be redirected to the application page for the respective job.

RecruPortal

My Profile   My Resume   Search jobs   My Applications   Logout

Why should you be hired?										
lorem ipsum										
Job Position	Artificial Intelligence Scientist	Job Location	Maharashtra							
What is the job?	lorem ipsum									
Company Name										
Infosys										
Job Skills Expected										
Computer Vision	Data Analytics	Data Science	Cyber Security	Cloud Computing						
Django	Artificial Intelligence	React JS	UI/UX Design	Web Development						
Industry Experience	0-3 years	Working Days	5 days							

*Fig. 6.2.9 Applied jobs list*

After filling out the job application form, the candidate will be redirected to the “My Applications” page where s/he can find all the jobs s/he has applied for.

Here’s the end of the first module which is the Candidate module.

### 6.2.1 Company module

In this module, some of the sections are the same as that of the candidate module. In this section, only those screenshots are provided which are different from the candidate module.

The screenshot shows a web form titled 'JOB DETAILS'. At the top, there is a yellow banner with the text 'Please enter the same email that you used during registration'. Below the banner are four input fields: 'Job Position' (a dropdown menu), 'Company Email' (a text input field), 'Company Name' (a text input field), and 'Job Description' (a text input field). The entire form is contained within a light gray box.

Fig. 6.2.10 Post Jobs form

Here, the company uploads the jobs on the website where different fields are asked to fill which will be displayed on the portal.

The screenshot shows a table titled 'RecruPortal' with a dark header bar containing links: 'My Profile', 'Post jobs', 'My Jobs', 'Applied Candidates', 'Hired Candidates', and 'Logout'. The table has columns for 'Job Position', 'Job Description', 'Industry Experience', 'Working Days', 'Skills', 'Salary', and 'Location'. A single row is visible, representing a job posted by the company. The job details are as follows:

Job Position	Job Description	Industry Experience	Working Days	Skills	Salary	Location
Artificial Intelligence Scientist	lorem ipsum lorem ipsum lorem ipsum lorem ipsum lorem ipsum lorem ipsum ipsum lorem ipsum	0-3 years	5	Computer Vision Data Analytics Data Science Cyber Security Cloud Computing Django Artificial Intelligence React JS UI/UX Design Web Development	5 LPA	Maharashtra

Fig. 6.2.11 Jobs Posted by the Company

After the company creates a job, it is redirected to the “My Jobs” page where the company HRs can see all the jobs posted by the company.



Job Position	Artificial Intelligence Scientist			Job Location	Maharashtra
Candidate Name	Candidate Email	Candidate Phone	Candidate Resume		
Anagha Kamat	anagha@gmail.com	8779660658	<a href="#">resume_lg3t94C.pdf</a>		
Why should I be hired?	lorem ipsum				
<a href="#">Give Decision</a>					

Job Position	Artificial Intelligence Scientist			Job Location	Maharashtra
Candidate Name	Candidate Email	Candidate Phone	Candidate Resume		
Anagha Kamat	anaghakamat@gmail.com	8779660658	<a href="#">resume_Ewxb3dd.pdf</a>		
<a href="#">Why should I be hired?</a>					

*Fig. 6.2.12 Applied Candidates*

On this page, the company gets a list of all the candidates who have applied for the jobs posted by the company.



*Fig. 6.2.13 Give decision to candidate form*

In this form, if the company wants to select the respective candidate then it'll fill out basic details, and then the email will be sent to the system. If the company doesn't want to select the candidate then a rejection email will be sent.

RecruPortal		My Profile	Post jobs	My Jobs	Applied Candidates	Hired Candidates	Logout
Name	Email	Resume	Date	Time	Meeting Link		
Anagha Kamat	anaghavinayakkamat.model@gmail.com	<a href="#">resume_vSwM7wh.pdf</a>	2022-03-04	15:26:09	<a href="https://www.youtube.com/watch?v=vLulkSVJsL4&amp;t=56s">https://www.youtube.com/watch?v=vLulkSVJsL4&amp;t=56s</a>		
Anagha Kamat	anaghavinayakkamat.model@gmail.com	<a href="#">resume_vSwM7wh.pdf</a>	2022-03-04	15:26:09			<a href="#">None</a>

*Fig. 6.2.13 Shortlisted Candidates*

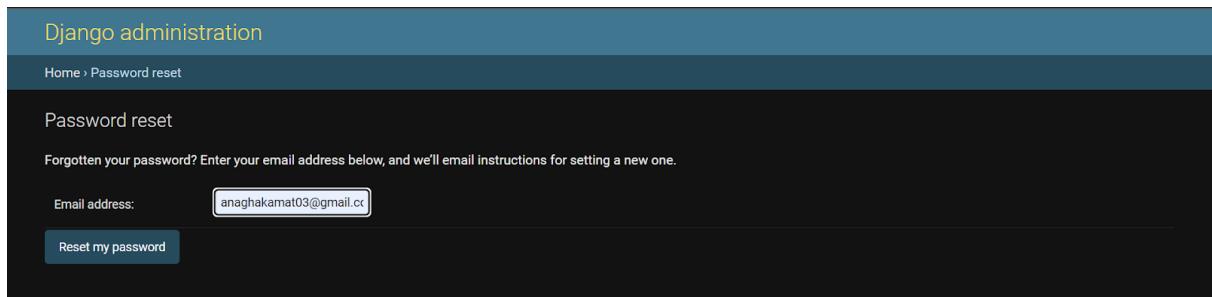
On this page, the company gets a list of all the candidates who are shortlisted for further interviews.

The screenshot shows a Gmail inbox with 3,679 messages. An email from 'recruportal@gmail.com' is selected. The subject is 'Reply to your application at Android Developer Infosys'. The message body contains a congratulatory note about being selected for an interview and provides a link for joining via a specific URL.

*Fig. 6.2.14 Email sent to the candidate after the selection*

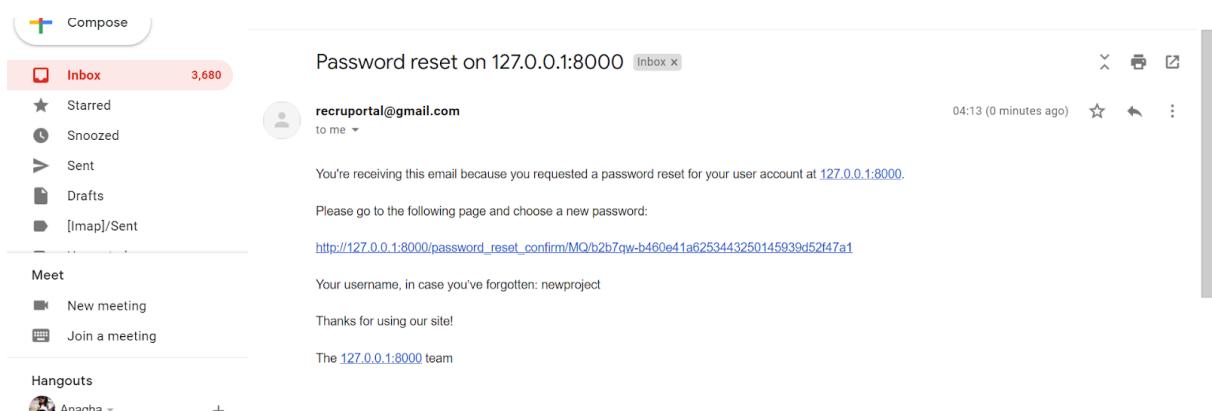
The screenshot shows a Gmail inbox with 3,679 messages. An email from 'recruportal@gmail.com' is selected. The subject is 'Sorry, you are not selected for further interviews'. The message body informs the candidate that they are not selected for further interviews. Below the message are three blue buttons labeled 'Thank you for informing me.', 'Thank you for your response.', and 'Thanks for informing.'

*Fig. 6.2.15 Rejection email sent to the candidate*

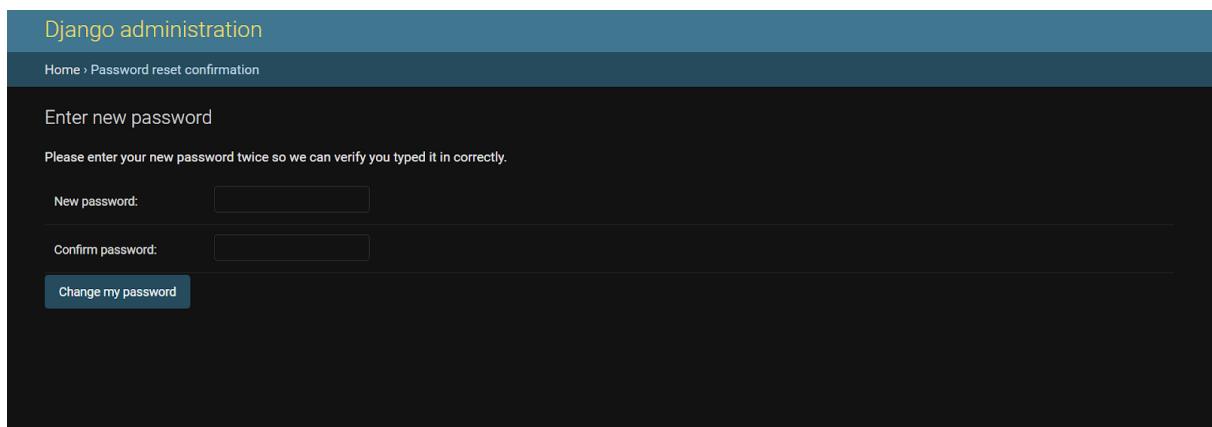


*Fig. 6.2.15 Forgot password*

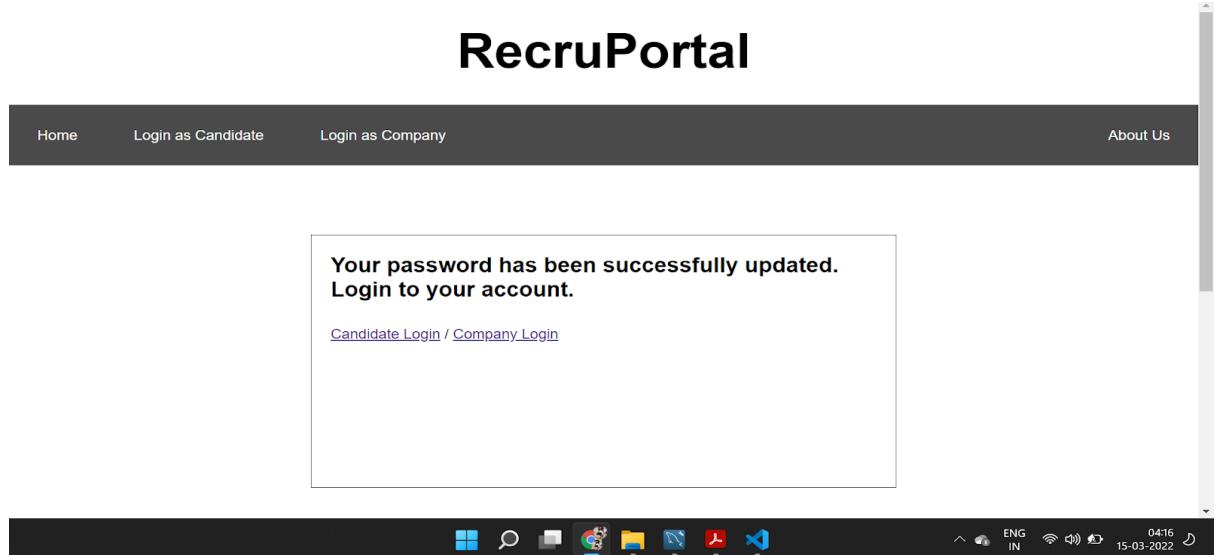
The above template is a built-in template provided by Django for forgot password functionality. An email will be received with a link to change the password.



*Fig. 6.2.16 Password reset mail*



*Fig. 6.2.17 Password reset link*



*Fig. 6.2.18 Password reset completed*

The above window will be displayed after you complete your password reset.

## Chapter 7

# **Conclusions**

## **7.1 Conclusion**

Because of the pandemic, the majority of the population is shifting towards online platforms. Most companies have started performing all the work online mode itself. Even the employees or the general public have realized the perks of working remotely than in-office. This system, therefore, promotes the new normal and has brought a single platform for all IT companies and IT professionals to work remotely. With this system, the company does not require to maintain the records of the candidates applied or vacancies posted, etc. Neither the job seeker needs to maintain the records of all of his/her documents such as resume, certificates, etc. Even it cuts down the traveling time as well. So it allows spending your remaining time on some fruitful work. Not only this but the employers or the recruiters are not required to keep on informing each candidate about their selection manually. All these things contribute to saving a lot of time.

## **7.2 Limitations:**

- 1) As of now, the system is only concerned with IT disciplines.
- 2) Some of the data is repetitively asked to fill in different pages. E.g. candidate's email is asked at three places; during registration, filling the resume form, and applying for the jobs.
- 3) For updating the candidates about their selection, the company needs to visit each candidate's form separately and fill out the required details.
- 4) Candidates don't have an option to choose resume templates. The resume is generated only in one format.

### **7.3 Future Scope**

- 1) The system will be available for all the disciplines apart from IT fields only.
- 2) Existing problems of the system will be overcome. E.g. storing repetitive data in different tables instead of using foreign key relationships.
- 3) Candidates will be provided with different resume templates to choose from.
- 4) The system will include a quiz functionality for different disciplines as well.
- 5) With the help of quiz scores and the resume, the system will predict the best-suited candidate for the job.
- 6) System can also provide a virtual meeting platform to conduct further interviews on the system itself.
- 7) Personality quiz will also be asked on which basis, the personality of the candidate will be predicted using the Big 5 personality prediction model based on Artificial Intelligence.

## **References**

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- [4] [https://www.youtube.com/watch?v=5BDgKJFZMl8&list=PLu0W\\_9lII9ah7DDtYtflgwMwpT3xmjXY9](https://www.youtube.com/watch?v=5BDgKJFZMl8&list=PLu0W_9lII9ah7DDtYtflgwMwpT3xmjXY9)
- [5] <https://www.youtube.com/watch?v=JxzZxdht-XY&t=3961s>
- [6] <https://www.youtube.com/watch?v=X7DWErkNVJs&t=421s>
- [7] <https://www.djangoproject.com/>
- [8] <https://www.youtube.com/watch?v=5h-IoDdlBZ4&t=4720s>