Final Year Project Report

Personality Prediction System through CV Analysis

Bahria University Islamabad

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A Final Year Project submitted to the Department of Software Engineering, Faculty of Engineering Sciences, Bahria University, Islamabad in the partial fulfillment for the award of degree in Bachelor of Software Engineering.

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THESIS COMPLETION CERTIFICATE

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Project Title: Personality Prediction System Through CV Analysis

It is to certify that the above students' project has been completed to my satisfaction and to my belief, its standard is appropriate for submission for evaluation. I have also conducted plagiarism test of this thesis using HEC prescribed software and found similarity index at   13%   that is within the permissible limit set by the HEC. I have also found the thesis in a format recognized by the department.


Supervisor's Signature:

Date: 09-06-2021   Name: Engr. Rafia Hassan

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Abstract

In personality prediction system, to make the recruiting system more effectual and structured, set of techniques has been presented. On the basis of personality test and aptitude test, system ranks the applied candidates. The System is a web-based project. This system allows user to apply online for a particular job. User uploads his/her CV then system ranks the candidates based on the experience and other key skills which are required for job profile. This system focuses not only on qualification and experience but also focuses on other important aspects which are required for job position. User gives an online test which conduct on personality questions as well as aptitude questions. After completing the online test, candidate can view their own test results in graphical representation with marks. The system allows the HR Department to perform all recruiting function at one platform since previous web sites don't provide such benefits together.

Dedication

"I dedicate this project to my loving and supportive family for taking care me with affection and love."

Acknowledgments

First of all, I am very grateful to Allah Almighty for making me successful in developing this project, this would not be possible without his help and guidance. There are a lot of hands involved to make everything possible, without their assistance it would not be possible to make this project successful.

*I am very thankful to my supervisor **Engr. Rafia Hassan**, Bahria University, Islamabad whose significant assistance helped in the completion of my Final Year Project.*

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Table of Contents

List of Figures

List of Tables

CHAPTER-01

INTRODUCTION

Introduction:

Personality prediction system through CV Analysis is a project that is going to replace the old traditional system of recruiting. It allows human resource department to do all the recruitments under one plate form. It saves time and cost of recruitments. System provides functionalities for both Admin and Candidates. In Admin module, admin has allowed to manage aptitude and personality questions, view the list and result of applied candidates. In Candidate module, candidate has allowed to only register through CV. After signup, candidate performs personality test, aptitude test is only against the applied jobs. At the end, candidate is able to view the result in graphical representation form.

1.1 Motivation

In this world of technology, where everything is performed over smartphones and web, there are still few functions which is being carried out manually and cannot cope the requirements and needs of users. The motivation behind the idea of the project is to automate the manual process of recruiting system. It is consequential to develop an efficient system which can satisfy the companies and save their money and time from hectic recruitments.

1.2 Problem statement or research questions

Due to an abundance of workload on recruiting department, it is a herculean task for them to select a right candidate for a particular vacancy which would be an expert for their organization.

1.3 Objectives

The objectives of the project are as stated below:

• Provide a more effectual way of short-listing the right candidates for the particular job.

• To determine the key skill characteristic by defining each expert's preferences and ranking decisions.

• It automates the recruiting system from paperwork.

- To check the aptitude and personality of candidate through aptitude and personality test.
- To produce ranking decisions that would have relatively higher consistency than those of human experts.

1.4 Main contributions

The idea of developing the personality prediction system is beneficial as it delivers a web-based application through which the mentioned problem can be tackle in a more efficient and effective way. In this system, the candidate and admin both will have an easy access and they can manage and use the system respectively. With the help of PPS, the admin can manage all the candidates within short period of time.

1.5 Report organisation

This report of final year project is organized on the basis of 7 chapters. Each chapter clearly demonstrates the details of our project in a different way. Following are the chapters included in thesis:

- **Background**

  The chapter 2 discusses the background and literature of the system. It also analysis the existing work to further analyse the problem statement and project statement.

- **System requirements**

  The chapter 3 focusses on system requirements which includes functional and non-functional requirements. It also discusses project feasibility and model analysis.

- **System design**

  The chapter 4 discusses system design which includes design approach, constraints, system architecture, logical design, dynamic view, and component design. It also discusses system and user interface.

- **System implementation**

  In chapter 5, It discusses the applicability of the project that includes system implementation strategy, technologies, and methodologies.

- **System Testing**

The chapter 6 is related to the evaluation of the project which includes testing like component testing, unit testing, integrated testing and system testing.

- **Conclusion**

  The chapter 7 concludes the thesis by summarizing different aspects of the work including contributions, and future work.
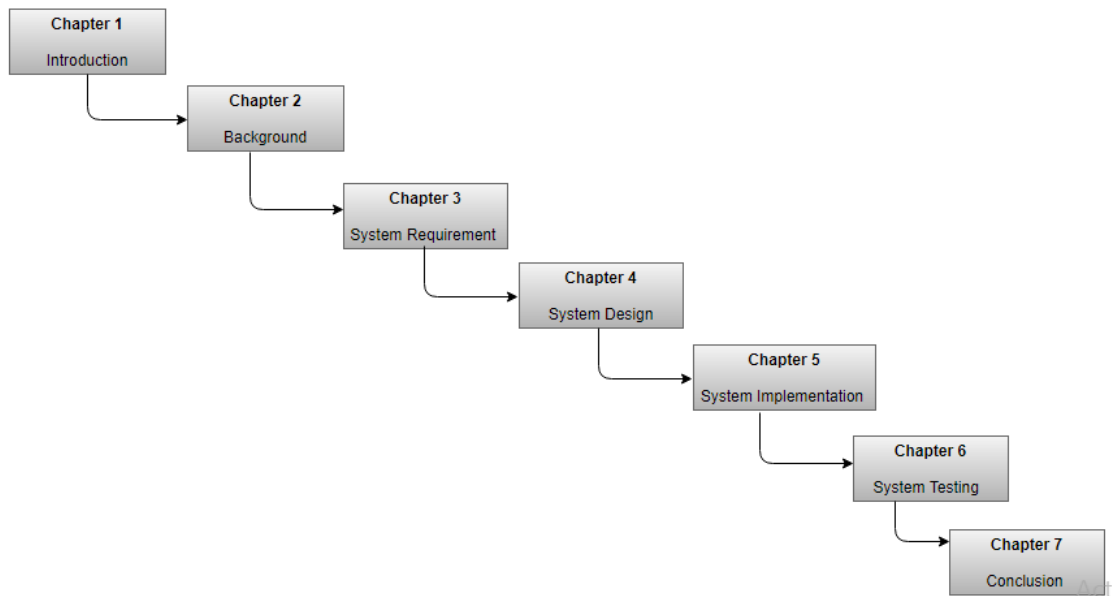
Table 1.1: Thesis organisation

CHAPTER 2

LITERATURE REVIEW

2.1 Key Concepts

In Pakistan, organizations are not much aware of this system which can recruit candidates based on their skills and from personality perspectives. Mostly, recruits select candidates manually by going through their CVs. Sometimes they hire wrong person for work because on CV candidates just mention their skills which later are harmful for organization because of lack of personality development. So, in our country such efficient and effective system required which can handle all recruiting functions at one platform.

2.2 Analysis of existing work:

There are different existing system including personality prediction system from Facebook users, personality prediction system through resumes and Personality extraction through LinkedIn. All these systems predicting the personality of users, but my system is giving more options to users. The previous system is simpler than my project. In personality prediction system through LinkedIn, system predicting users from their LinkedIn profiles, while in my system, system is predicting users through Big Five model of personality test. On the other hand, in personality prediction system through resumes, system just providing limited option. Moreover, that system is not mature enough to deal with high number of users. [2]

- **Personality Prediction system through Facebook users:**

In the present era, the use of fakebook has been increased. People share their information on social media. Similarly, this system is based on predicting the users on the bases of their Facebook content like status, posts etc. They also used Big Five model of personality for the prediction of user's behaviours. When users comment, post and update status, they show their feeling through which the system extract the data of users and predicts their personalities. [5]

- **Personality prediction system through resumes:**

This system recruits' users on the bases of personality as well. It uses different artificial Intelligence algorithm to hire the right candidate. The system has limited functionalities which includes candidate and admin modules. In admin panel, admin can only Add job details, manage test questions and see the selected candidate result.

6

While on the other side, candidate register by uploading CV, perform test and see results. [1]

- **Personality extraction through LinkedIn:**

LinkedIn is professional website where recruiters hire most suitable candidates for their organization. (https://www.linkedin.com) The system has also applied Big Five Model of personality to predict the personality of users on LinkedIn. It extracts the information of users bases on their LinkedIn profile; it works the same way which personality prediction through Facebook user does.

2.2.1 Differences and similarities:

The given project has various similarities and dissimilarities from the existing system. In the similarities, all the discussed system uses Big Five Model of Personality for the prediction of user's personality. All of them have aim to predict users while using different resources. In the dissimilarities, all the system using different means like Facebook, LinkedIn and resumes etc. But in the proposed system, users' upload their CV, perform personality as well as aptitude test so users' skills can be assessed.

Characteristics of our project	Personality prediction through LinkedIn	Personality prediction through resumes	Personality prediction through Facebook user
Performing Aptitude test	No	Yes	No
Performing Personality test	No	Yes	No
Display candidates ranking	Yes	No	Yes
Display graph	No	Yes	No
Using Big Five Model	Yes	Yes	Yes
View Opening applied	No	No	No
View categories scores	No	No	No

Add Questions	No	Yes	No
Add Job details	Yes	Yes	Yes
View Candidate Info	Yes	Yes	No
View opening	Yes	Yes	Yes

Table 2.1: Differences and Similarities

2.3 Conclusion:

In this chapter, literature review and background have been discussed. I also have discussed the previously created system which are similar to my project. Differences and similarities also have been covered in this chapter.

CHAPTER-03

SYSTEM REQUIREMENTS

3.1 Use Case Diagram

Use case diagrams for both Admin and Candidate modules.

3.1.1 For Admin
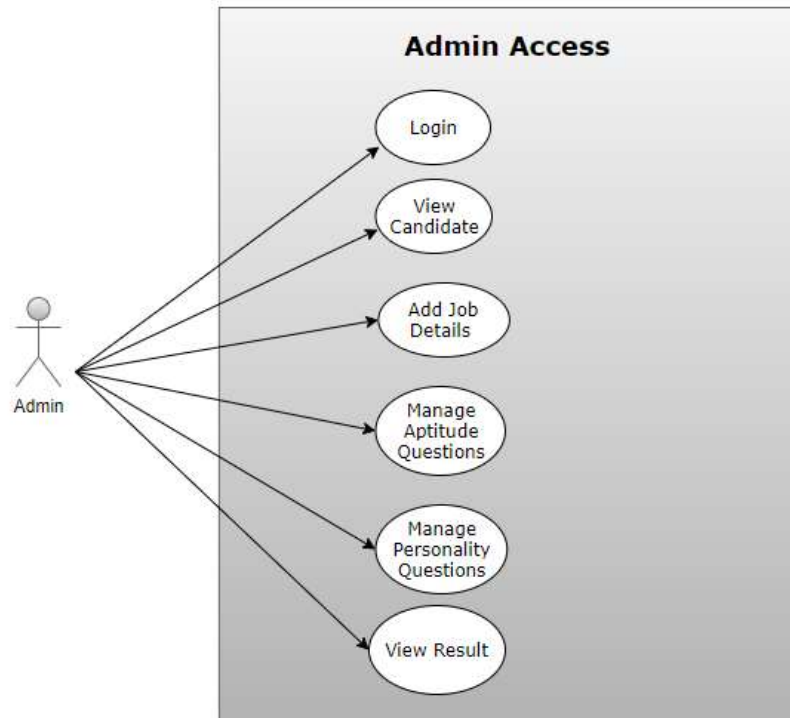
Fig.3.1: Use case Diagram of Admin Module

The use case diagram shown in Figure 3.1 is the use case diagram of Admin Module. Admin will sign in the Web Application when he must do recruiting. Admin panel have five Option. Admin has "**View Candidate**" option to view all the candidates who have applied for particular job. Admin has "**Add Job Details**" option to add all the necessary details of job. Admin has "**Manage Personality Questions**" option to manage all the personality Questions. Admin has "**Manage Aptitude Questions**" option to manage all the personality Questions. Admin has "**View Result**" option to see who are selected for the job.

3.1.2 For Candidate:
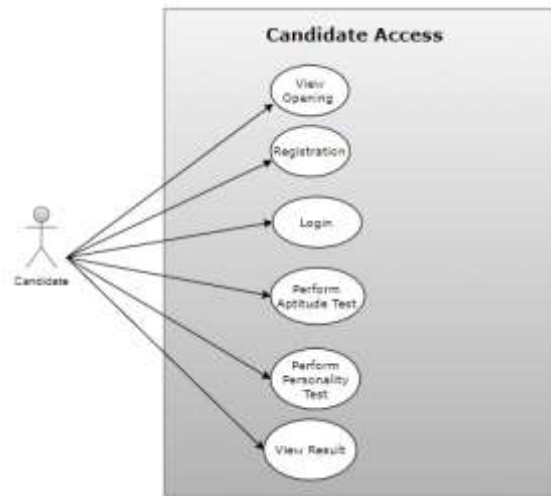
Fig 3.2: Use case Diagram of Candidate Module

The use case diagram shown in Figure 2 is the use case diagram of Candidate Module. Candidate will do "**Registration**" first then "**Log in**" in the Web Application. Admin panel has three Option. Candidates click "**Perform Personality Test**" option to perform the personality Test. Candidates click "**Perform Aptitude Test**" option to Perform all the personality Test. Candidates have "**View Result**" option to the result of performed test.

3.2 Functional Requirements

3.2.1 Login:

Figure: UC -01

Use Case ID:	UC -01
Use Case Name:	Login
Actor(s):	Admin, Candidate
Pre-Conditions:	User must have an account.

Priority:	High
Basic Flow:	User opens the web Application. After entering into the website, User clicks on Candidate Profile/Admin Profile option. It displays Login Page. User provides all credential. User logged in.

Actor Actions		System Response
1	a. User enters username and password in the relevant fields. b. User clicks on "Login" button	**2.** System check user's provided credentials. If user credentials are valid, user is authenticated, and home screen is displayed.
Alternative Course of Action (if any)		
Actor Action		**System Response**
1. b	User has entered wrong credentials.	**2.a** System displays error message "Invalid Email or Password"

3.2.2 View Candidates:

Figure: UC -02

Use Case ID:	**UC -02**
Use Case Name:	**View Candidate**
Actor(s):	**Admin**
Pre-Conditions:	· Admin must be authenticated first.
Priority:	Low
Basic Flow:	Authenticated Admin clicks on "**View Candidate**" option in Admin Panel. It displays the candidates who have applied for jobs.

Actor Actions		System Response
1	**a.** Admin clicks on "View Candidate "option.	**2.** System will display list of candidates who have applied for job.

Alternative Course of Action (if any)	
Actor Action	**System Response**

3.2.3 Add Job Details:

Figure: UC -03

Use Case ID:	**UC -03**	
Use Case Name:	**Add Job details**	
Actor(s):	**Admin**	
Pre-Conditions:	· Admin must be authenticated first. · Admin wants to add new job.	
Priority:	High	
Basic Flow:	Authenticated Admin clicks on "**Job Details**" option in Admin Panel. It displays the web page where Admin adds all job details regarding to the post.	
Actor Actions		**System Response**
1	Admin clicks on "Job details" option.	2. System displays web page where Admin will add details regarding to particular Job.
3.	a. Admin adds each and every detail which required. b. Admin clicks on "Add" Button.	4. System displays "Detail added" message.
Alternative Course of Action (if any)		
Actor Action		**System Response**
3b	Admin forgets to fill any field.	4a System displays error message "Incomplete Details".

13

3.2.4 Manage personality Questions:
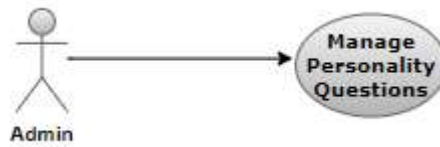
Figure: UC -04

Use Case ID:	UC -04
Use Case Name:	**Manage personality Questions**
Actor(s):	**Admin**
Pre-Conditions:	· Admin must be authenticated first. · Admin wants to manage Personality Questions
Priority:	Medium
Basic Flow:	Authenticated Admin clicks on "**Personality Questions**" option in Admin Panel. It displays the web page where Admin manage Personality Questions.

Actor Actions		System Response
1	Admin clicks on "Personality Questions "option.	2. System displays web page where Admin manages Personality Questions.
3.	a. Admin add Personality Questions. b. Admin clicks on "Add" Button.	4. System displays message "Question added".
5	a. Admin select Personality Question. b. Admin clicks on "delete" Button.	6. System displays message "Question deleted".
Alternative Course of Action (if any)		
Actor Action		**System Response**
3b	Admin forgets to fill answer field.	4a System displays error message" Incomplete Question".

3.2.5 Manage Aptitude Questions:

Figure: UC -05

Use Case ID:	UC -05	
Use Case Name:	Manage Aptitude Questions	
Actor(s):	Admin	
Pre-Conditions:	· Admin must be authenticated first. · Admin wants to manage Aptitude Questions	
Priority:	Medium	
Basic Flow:	Authenticated Admin clicks on "**Aptitude Questions**" option in Admin Panel. It displays the web page where Admin manage Aptitude Questions.	
Actor Actions		**System Response**
1	Admin clicks on "Aptitude Questions "option.	2. System displays web page where Admin manages Aptitude Questions.
3.	a. Admin add Aptitude Questions. b. Admin clicks on "Add" Button.	4. System displays message "Question added".
5	a. Admin select Aptitude Question. b. Admin clicks on "delete" Button.	6. System displays message "Question deleted".
Alternative Course of Action (if any)		
Actor Action		**System Response**
3b	Admin forgets to fill answer field.	4a System displays an error message" Incomplete Question".

3.2.6 View Result:
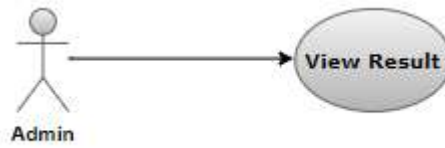
Figure: UC -06

Use Case ID:	UC -06	
Use Case Name:	View Result	
Actor(s):	Admin	
Pre-Conditions:	Admin must be authenticated first.	
Priority:	High	
Basic Flow:	Authenticated Admin clicks on "**View Result**" option in Admin Panel. It displays the candidates who are selected for job.	
Actor Actions		**System Response**
1	Admin clicks on "View Result" option.	2. System displays candidates which are selected for job
Alternative Course of Action (if any)		
Actor Action		**System Response**

3.2.7 View Opening:

Figure: UC -07

Use Case ID:	UC-07	
Use Case Name:	View Opening	
Actor(s):	Candidate	
Pre-Conditions:	System must be connected to the network.	
Priority:	High	
Basic Flow:	Candidate will open the web Application. After entering into website, candidate will click on "View Opening" option to see all current opening.	
Actor Actions		**System Response**
1	Candidate opens home screen of Web Application	**2.** System shows options including: ・ View Opening ・ Candidate Profile ・ Admin Profile
3	Candidate clicks "View Opening" option.	4 System displays the current Opening jobs.
Alternative Course of Action (if any)		
Actor Action		**System Response**

3.2.8 Registration:

Figure: UC -08

Use Case ID:	UC-08
Use Case Name:	Registration
Actor(s):	Candidate
Pre-Conditions:	System must be connected to the network.

Priority:	High
Basic Flow:	Candidate will open the web Application. After entering into web Application, candidate will click on "Registration" option to register himself.

Actor Actions		System Response
1	Candidate opens home screen of Web Application	**2.** System shows options including: · View Opening · Candidate Profile · Admin Profile
3	Candidate clicks "Candidate Profile" option.	5. System displays the Login page.
5	Candidate clicks "Sign up" option in login page.	6. System displays Registration page
7	a. Candidate provides all information. b. Candidate clicks on "Register" options.	8. System display message" Registered"
Alternative Course of Action (if any)		
Actor Action		**System Response**
7b	Candidate forgets to enter any data.	8.a System displays error message " Incomplete I"

3.2.9 Personality Test:

Figure: UC -09

Use Case ID:	UC -09
Use Case Name:	Perform personality Test
Actor(s):	Candidate
Pre-Conditions:	· Candidate must be authenticated first.

Priority:	High	
Basic Flow:	Authenticated Candidate clicks on "**Personality Test**" option in Candidate Panel. It displays the web page where Candidate perform Personality Test.	
Actor Actions		**System Response**
1	Candidate clicks on " Personality Tests " option	2. System displays web page where Admin Perform Personality Test.
3.	a. Candidate answers all Questions. b. Candidate clicks on "Submit" Button.	4. System displays message "Submitted".
Alternative Course of Action (if any)		
Actor Action		**System Response**
3b	Candidate forgets to answer one Question.	**4a** System displays error message" All Questions are necessary".

3.2.10 Aptitude Test

Figure: UC -10

Use Case ID:	UC -10
Use Case Name:	Perform Aptitude Test
Actor(s):	Candidate
Pre-Conditions:	· Candidate must be authenticated first.
Priority:	High

Basic Flow:	Authenticated Candidate clicks on "**Aptitude Test**" option in Candidate Panel. It displays the web page where Candidate perform Aptitude Test.

Actor Actions		System Response
1	Candidate clicks on "Aptitude Test "option.	2. System displays web page where Admin Perform Aptitude Test.
3.	a. Candidate answers all Questions. b. Candidate clicks on "Submit" Button.	4. System displays message "Submitted".
Alternative Course of Action (if any)		
Actor Action		**System Response**
3a	Candidate forgets to answer one Question.	**4a** System displays error message "All Questions are necessary".

3.2.11 View Result:

Figure: UC -11

Use Case ID:	UC -11
Use Case Name:	View Result
Actor(s):	Candidate
Pre-Conditions:	· Candidate must be authenticated first. · Candidate must perform both Personality and Aptitude Test.
Priority:	High
Basic Flow:	Authenticated Candidate clicks on "**View Result**" option in Candidate Panel. It displays the result in form of graphical representation.

Actor Actions		System Response
1	Candidate clicks on "View Result "option.	2. System displays candidates their result
Alternative Course of Action (if any)		
Actor Action		System Response

3.3 Interface Requirements

The PPS needs to have the following interfaces through which the candidates and admin will be able to use and communicate with the system:

Admin Panel Interface:

The Admin Panel of PPS will be accessible to the admin where he will do his desired functions such as adding an aptitude and personality questions, view the details of applied students, add job details and view the final result of selected students. The Admin Panel will also have extra features in the system such as deleting the candidate's data, adding an admin and giving specific access to him.

Candidate Panel Interface:

The Candidate Panel interface will be accessible to the candidates upon the successful login to the system. This interface will allow the Candidates to use the features of the system such as applying for the job, performing online aptitude and personality test, and view results in the graphical representation form.

Login Interface:

The login interface will provide a screen to admin and candidates where they can enter their credentials to get logged into the system. This interface requires a username and password from the users where they have gotten through their registration process. Both admin and candidates will use their own credentials to get access to the system.

Registration Interface:

This interface will be provided to the candidates, where they can register themselves by inserting their username, password, Email ID, phone number and resume. After uploading successfully their resume, they able to register themselves in the system. [3]

Job Opening Interface:

In the job opening interface, the number of jobs will be displayed to candidate. Candidates can check the eligibility criteria and apply for the job.

Test Interfaces:

There are two aptitude and personality test interfaces will be provided by the system to all candidates. Candidate will perform aptitude and personality test which consist of MCQ questions.

Result Interface:

In this interface, Candidate will be able to view their attempted test's result. For both aptitude and personality test, scores will be displayed in the graphical representation form.

Add job detail Interface:

Amin will add the job details such as job tittle and description, salary, skills, experience to the system in this interface.

Add Question Interfaces:

Add Aptitude and personality questions interfaces will be provided to the admin by the system. The admin will enter the questions against each test by adding sub test type and respective questions.

View Candidate Interface:

In this interface, all the applied candidate's information will be displayed. Admin can view all the information and can deleted as well.

View Candidate Result Interface:

At the end, admin will be able to view the result of all candidates who have applied and given tests. Rank will be given along with each candidate result.

3.3.1 Hardware Interfaces:

- **Processor:** Processor of 1.2GHZ or faster.
- **RAM:** 2GB of RAM is required.

3.3.2 Software Interfaces:

- **Operating system:** Window 10
- **Developing tool:** Django Framework for web-based application.
- **Developing technology: Python** is used as programming language.
- **Developing methodology:** Rezscore API is used for scoring the CV.
- **Database:** SQLite is used in the project.

3.4 Database Requirements

The system must store sign up credentials of the applied candidates. For every account, username, password, phone number, Email ID, and resume shall be stored in the database. The system can store and handle the data of more than 100 candidates simultaneously. The SQLite database, I used in my project which is capable of handling number of candidates.

3.5 Non-Functional Requirements

3.5.1 Performance Requirements

Performance requirement for PPS depends upon the number of candidates applying for a job. Because, if the number of users increase, it can affect the performance of the system. The system can slow down due to increasing number of Candidates. So, performance of the system can be affected. Performance of the system also depend upon the speed of Internet. The System increases with good Internet.

3.5.2 Safety Requirements

There will be no possible loss, damage, or harm by using PPS Web Application. There are no safety measures are required for using the system.

3.5.3 Security Requirements

Login and password of the Candidate is required. Candidate also provides personal Information. The data of Candidate is visible only to the admin and not to anyone else.

3.5.4 Software Quality Attributes

Availability	Correctness
The PPS System will be available 24/7. Everybody can access at any time from their devices when they have active Internet.	The system will show correct result and will display that candidate who are truly deserve for particular job.

Table 3.1: Quality attributes

3.6 Project Feasibility

3.6.1 Technical Feasibility:

Th project personality prediction system is web-based application that requires laptop, Internet, PyCharm, SQLite and RezScore API. These mentioned resources and technologies are easily available and manageable. Project time limitations and ease of implementing using these technologies are synchronized. So, the project is feasible from the technical aspects.

3.6.2 Operational Feasibility:

The Personality Prediction System is a desirable system because it solves the problem and saves the time and cast of hiring in various organizations. It does all the recruiting functionalities in one plate form. It allows candidates to apply online for particular job and candidates perform both personality and aptitude tests. At the end of result,

candidates view their result in the graphical representation form. On the other side, it also provides admin panel. Admin can add job details, manage aptitude and personality test, and able to view the result in the tabular form.

The proposed system has not any kind of resistance to be faced. So, this project is operationally feasible to a great extent.

3.6.3 Legal and Ethical Feasibility:

In the Personality Prediction System, there is no such legal and ethical laws which cause hinderance in the development of project. The project is legally do able as there are no legal implications that need to be addressed in the development.

3.7 Analysis Models

3.7.1 Sequence Diagram:

▪ **For Candidate Module:**
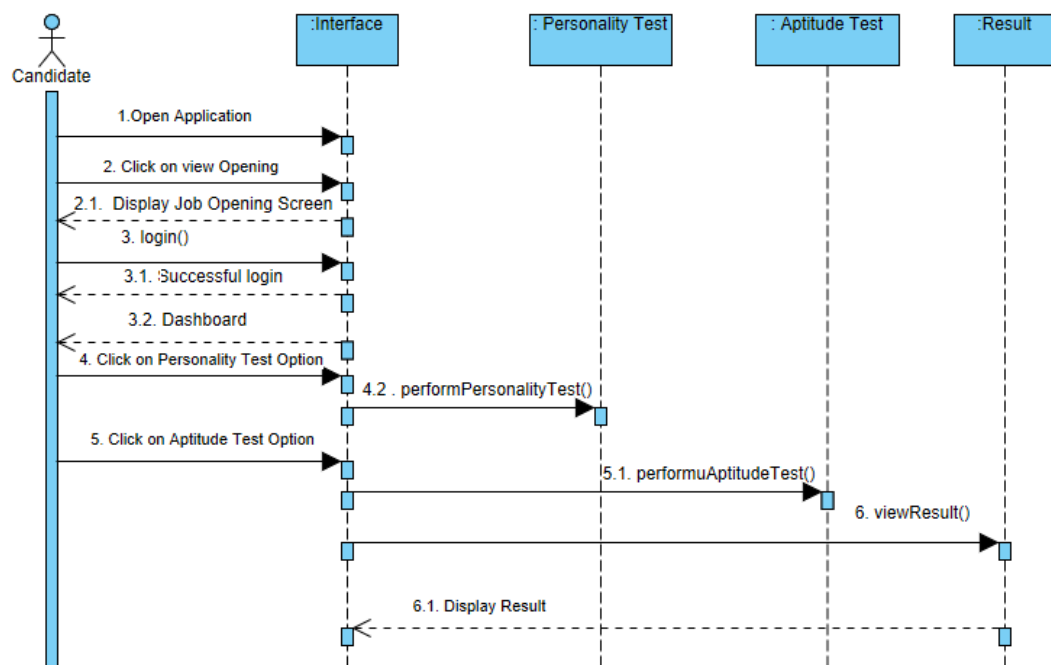
Fig.3.3: Sequence Diagram for Candidate Module

The diagram shown in Figure 3.3 is the sequence diagram of Personality Prediction System for Candidate Module.

1. Candidate will open Web Application first.
2. Candidate will click on View Opening to view all jobs and system will display jobs.
3. Candidate will Login the Web Application and system will show authentication.
4. Candidate will perform Personality Test.
5. System will perform Aptitude Test.
6. Candidate will view result test which will system display.
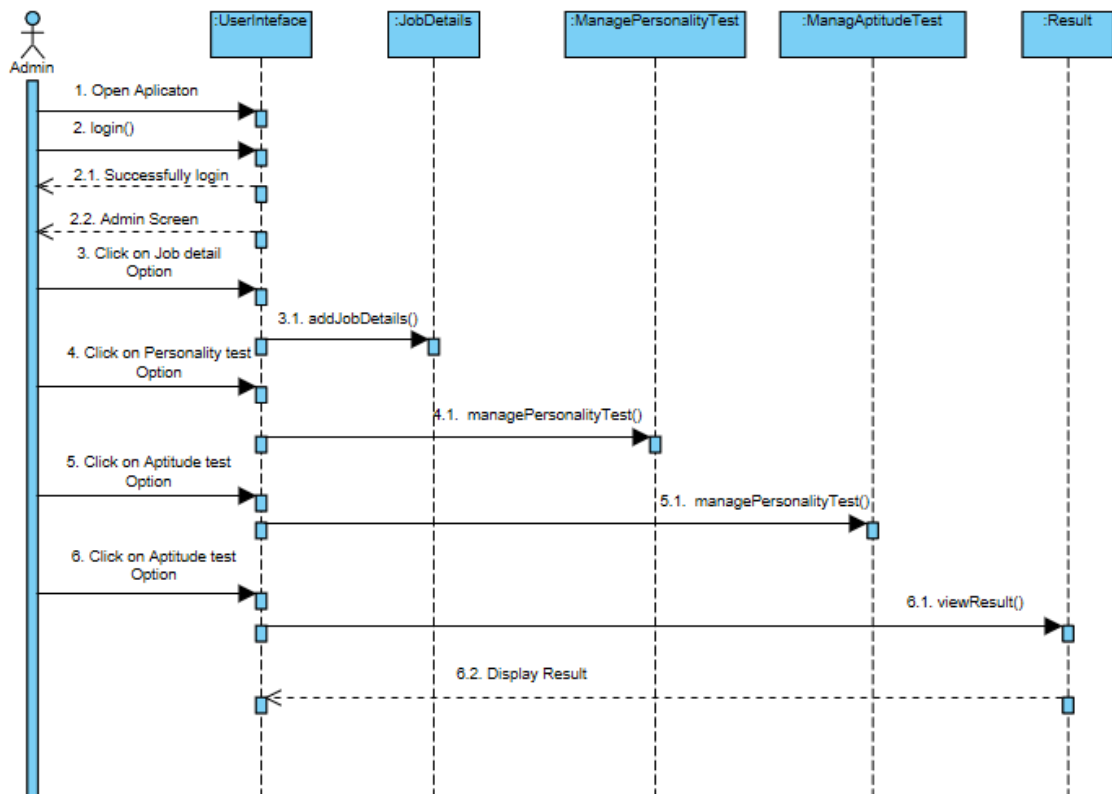
- **For Admin Module:**

Fig.3.4: Sequence Diagram for Admin Module

The diagram shown in Figure 3.4 is the sequence diagram of Personality Prediction System for Candidate Module.

1. Admin will open Web Application first.
2. Admin will login the Web Application to get access.
3. Admin will add job details regarding to particular job.

26

4. Admin will manage Personality Questions.

5. Admin will manage Aptitude Questions.

6. At the end, Admin will be able to see Result.

3.7.2 Activity Diagram:

- **For Candidate Module:**
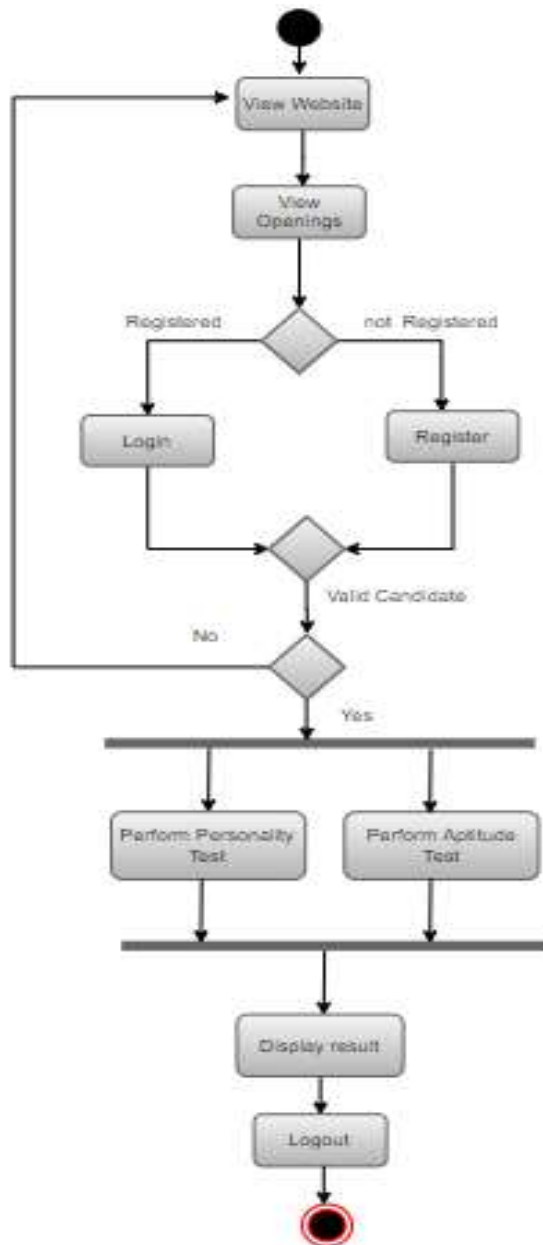
Fig.3.5: Activity Diagram for Candidate Module

The diagram shown in Figure 3.5 is the Activity diagram of Personality Prediction System for Candidate Module. Candidate will open website for the purpose of

applying job. He/She will see openings. Candidate will register first by uploading CV. Then Candidate will login to get access to his/her panel.

- **For Admin Module:**
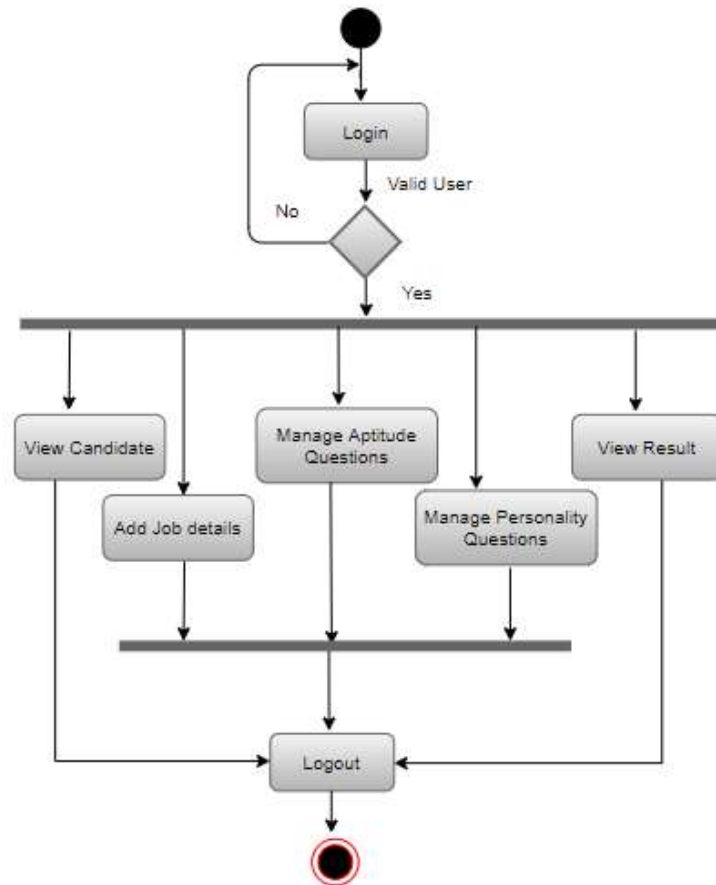
Fig.3.6: Activity Diagram for Admins Module

The diagram shown in Figure 3.6 is the Activity diagram of Personality Prediction System for Admin Module. Admin will open Web Application first. Admin will login the Web Application to get access. Admin will add job details regarding to particular job. Admin will manage Personality Questions. Admin will manage Aptitude Questions. At the end, Admin will be able to see Result.

3.8 Conclusion

In this chapter, requirements of personality predictions system have been discussed. Both functional and non-functional requirements have been covered. I have also discussed project feasibility and analysis model.

CHAPTER-04

SYSTEM DESIGN

4.1. Design Approach:

Object oriented design approach has been used in this project. OOD is a part of object-oriented programming. Object oriented design provide better flow of program. This design approach is based on different classes and the interaction or link between those classes. Classes have unique names, attributes and functions. Each class has any link or association with other class. [4]

4.2   Design Constraints

- Python is used as programming language for developing PPS Web Application.
- Django Framework is used for front end and backend development of PPS Web Application.
- HTML, CSS, and JavaScript is used for frontend designing.

4.3 System Architecture

The Model view template has been used in the personality prediction system. It consists of three basic components which are Model, View and Controller.

- **Model:**

    The Model is basically for handling database in the personality prediction system through CV analysis. The data is being handled by this access layer.

- **View:**

    The View acts as a moderator between Model and Template. The business logic is being executed by the view. View interacts with database in Model to carry data and display it in database.

- **Template:**

    The Template is user interface by which user interacts with system. All the screens display to user by template.

4.4 Logical Design

4.4.1 Domain Model:
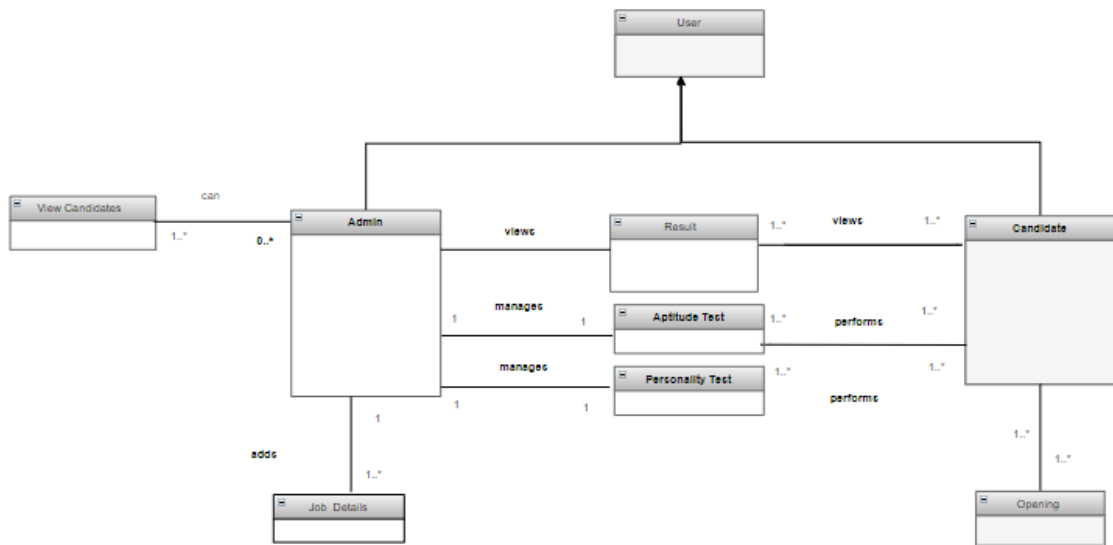
Fig.4.1: Domain Model of Personality Prediction System

The Figure 4.1 shows Domain Model of the Personality Prediction System. It includes:

For Candidate:	For Admin:
Candidate class	Admin class
Aptitude Test	Add Job Details
Personality Test	Personality Questions
View Result	Aptitude Questions
	View Candidate
	View Result

4.4.2 Class Diagram:
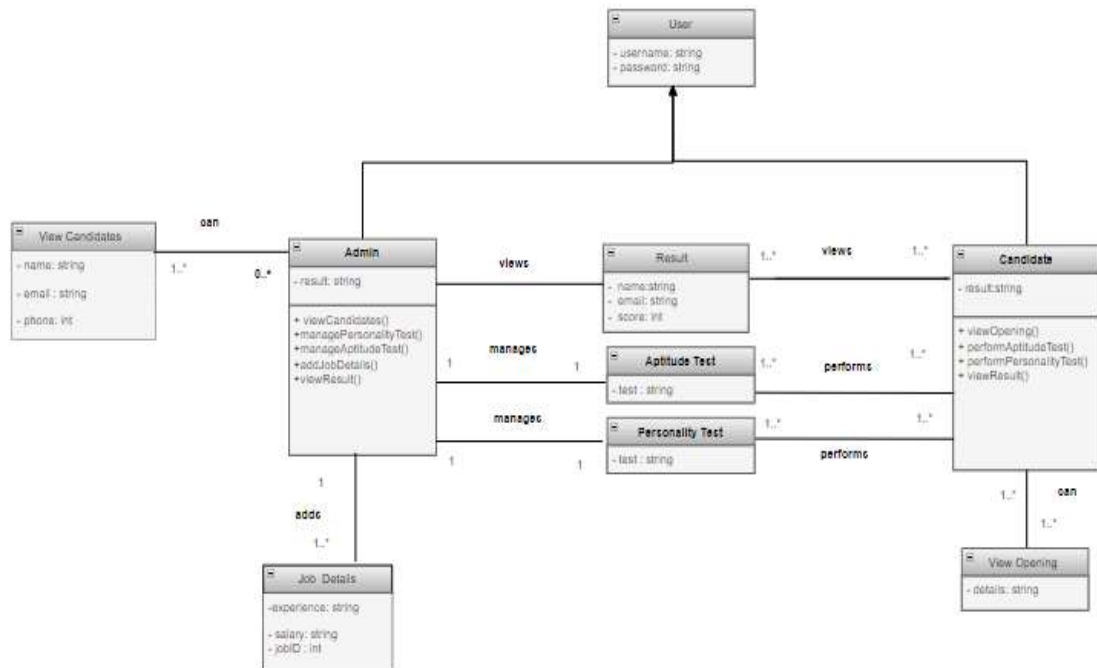
Fig.4.2: Class Diagram of Personality Prediction System

The Figure 4.2 shows Class Diagram of the Personality Prediction System.

- **User class** includes

    Attribute: Username and Password both of string data type.

- **Admin class** includes

    Attributes: result which is of string data type

    Operations: viewCandidates(), managePersonalityTest(), manageAptitudeTest(), addJobDetails(), viewResult()

- **Applied Candidates** includes

    Attributes: name, email, phone all are of string data type.

- **Job Details class** includes

    Attributes: experience, salary, jobD are of string data type.

- **Result class** includes

    Attributes: score, email, rank, name are of string data type.

- **Candidate class** includes

    Attributes: result which is of string data type

    Operations: viewOpening(), performPersonalityTest, performAptitudeTest(),

32

viewResult()

- **Opening class** includes

  Attributes: details which is of string data type

- **Personality Test class** includes

  Attributes: test which is of string data type.

- **Aptitude Test class** includes

  Attributes: test which is of string data type

4.5 Dynamic View

4.5.1 Sequence Diagram

- ## For Candidate Module:

Fig.4.3: Sequence Diagram for Candidate Module

The diagram shown in Figure 4.3 is the sequence diagram of Personality Prediction System for Candidate Module.

1. Candidate will open Web Application first.
3. Candidate will click on View Opening to view all jobs and system will display jobs.
4. Candidate will Login the Web Application and system will show authentication.

5. Candidate will perform Personality Test.

6. System will perform Aptitude Test.

7. Candidate will view result test which will system display.

• **For Admin Module:**

Fig.4.4: Sequence Diagram for Admin Module

The diagram shown in Figure 4.4 is the sequence diagram of Personality Prediction System for Candidate Module.

1. Admin will open Web Application first.
2. Admin will login the Web Application to get access.
3. Admin will add job details regarding to particular job.
4. Admin will manage Personality Questions.
5. Admin will manage Aptitude Questions.
6. At the end, Admin will be able to see Result.

4.5.2 Activity Diagram:

- **For Candidate Module:**
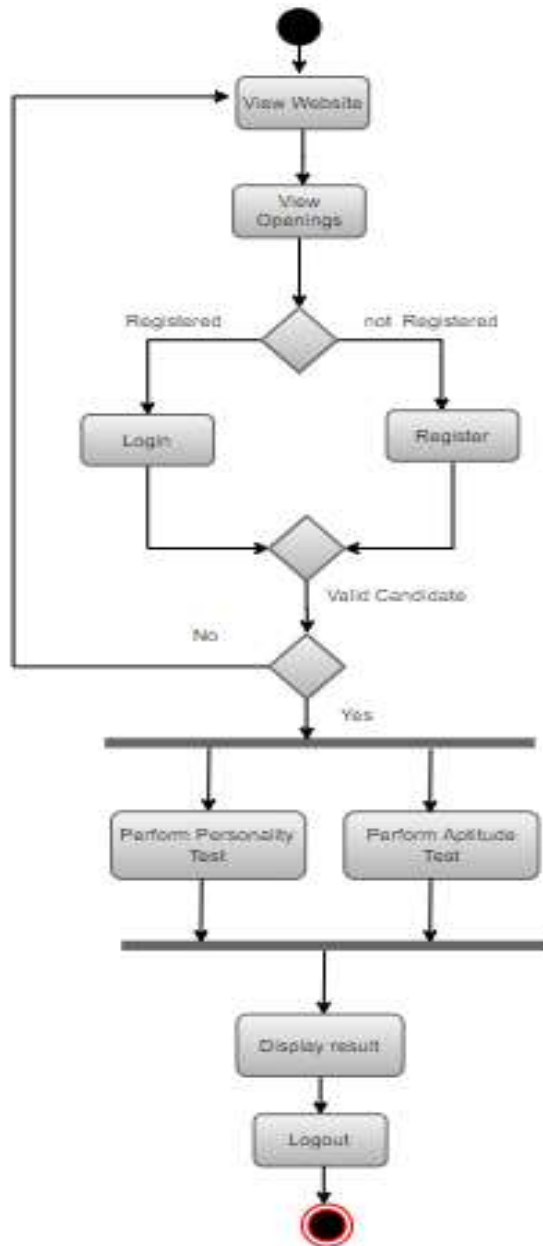
Fig.4.5: Activity Diagram for Candidate Module

The diagram shown in Figure 4.5 is the Activity diagram of Personality Prediction System for Candidate Module. Candidate will open website for the purpose of applying job. He/She will see openings. Candidate will register first by uploading CV. Then Candidate will login to get access to his/her panel.
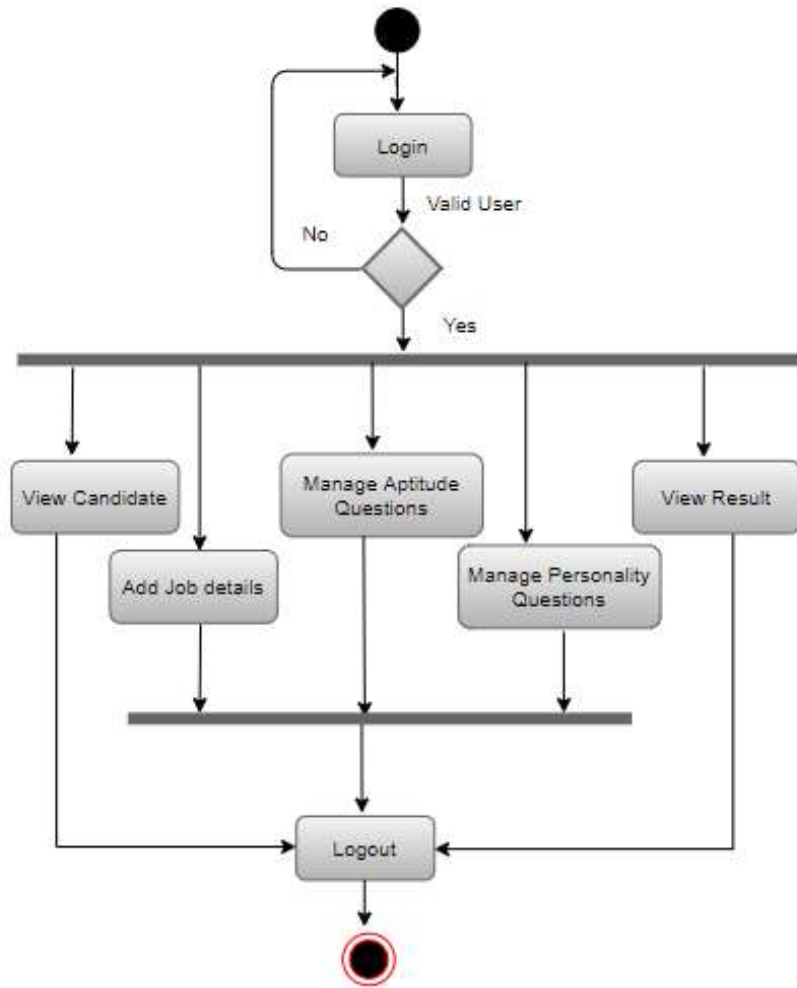
- **For Admin:**

Fig.4.6: Activity Diagram for Admins Module

The diagram shown in Figure 4.6 is the Activity diagram of Personality Prediction System for Admin Module. Admin will open Web Application first. Admin will login the Web Application to get access. Admin will add job details regarding to particular job. Admin will manage Personality Questions. Admin will manage Aptitude Questions. At the end, Admin will be able to see Result.

4.5.3 State Diagram:

- **For Admin:**
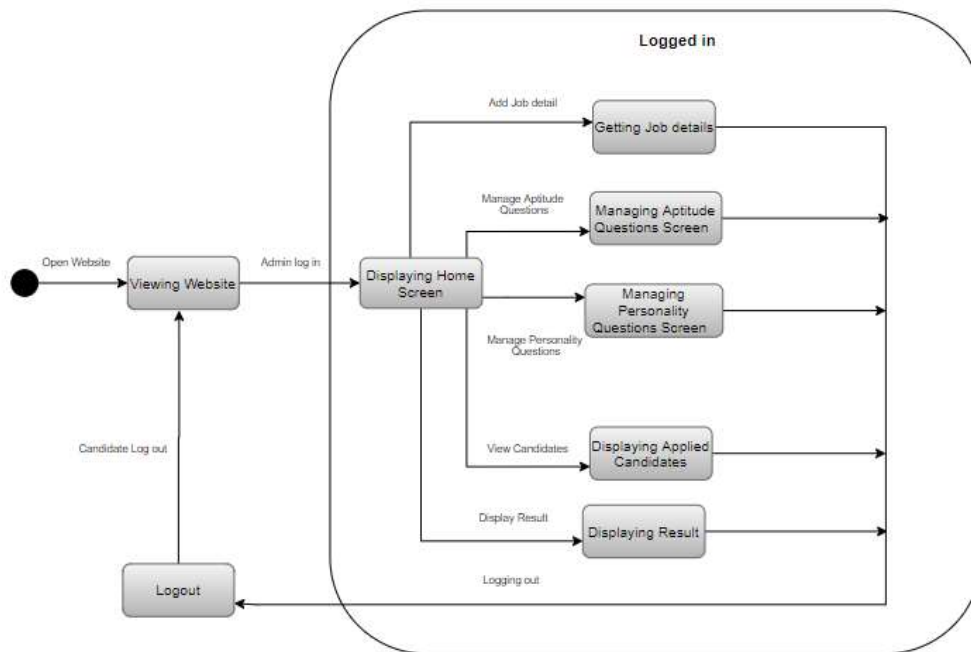
Fig.4.7: State Diagram for Admins Module

The diagram shown in Figure 4.7 is the State diagram of Personality Prediction System for Admin Module. Admin will open Web Application first. Admin will login the Web Application to get access. Admin will add job details regarding to particular job. Admin will manage Personality Questions. Admin will manage Aptitude Questions. At the end, Admin will be able to see Result.

- **For Candidate:**
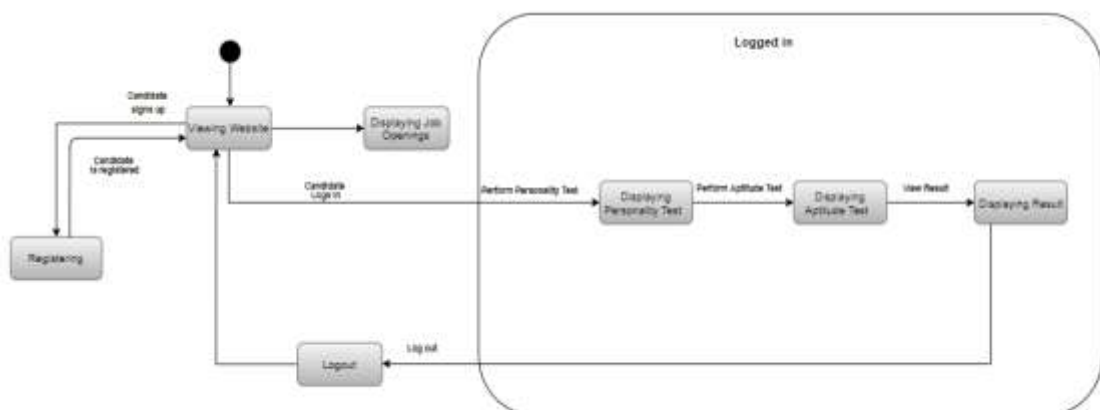
Fig.4.8: State Diagram for Candidate Module

The diagram shown in Figure 4.8 is the State diagram of Personality Prediction System for Candidate Module. This Figure shows Candidate will open Web Application first. Candidate will click on View Opening to view all jobs and system will display jobs. Candidate will register to the system. Candidate will Login the Web Application and system will show authentication. Candidate will perform Personality Test. System will perform Aptitude Test. Candidate will view result test which will system display.

4.6 Component Design

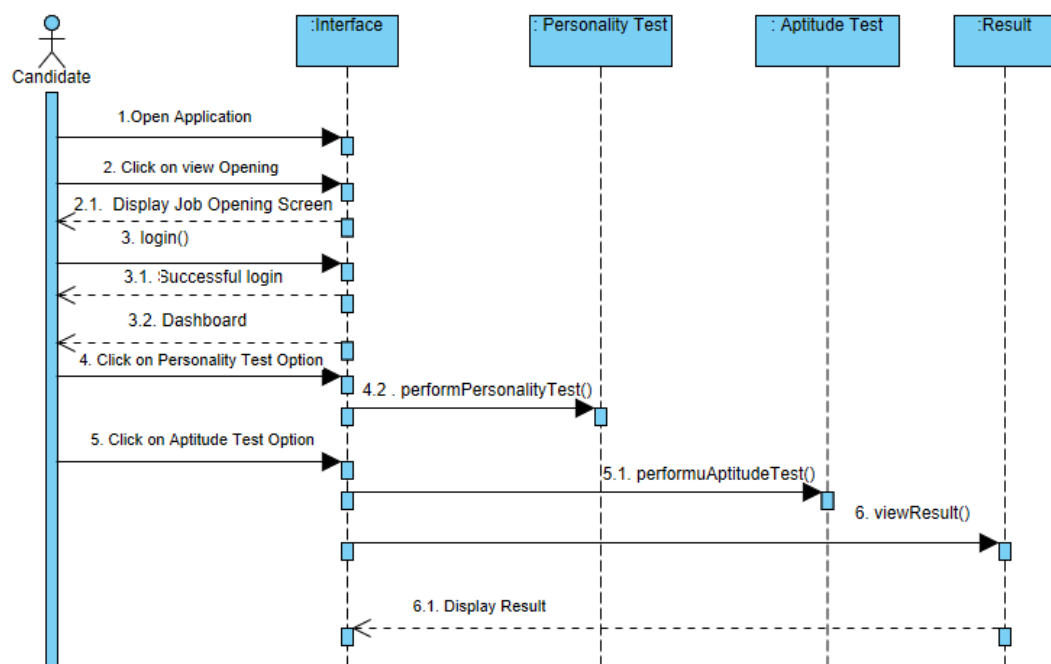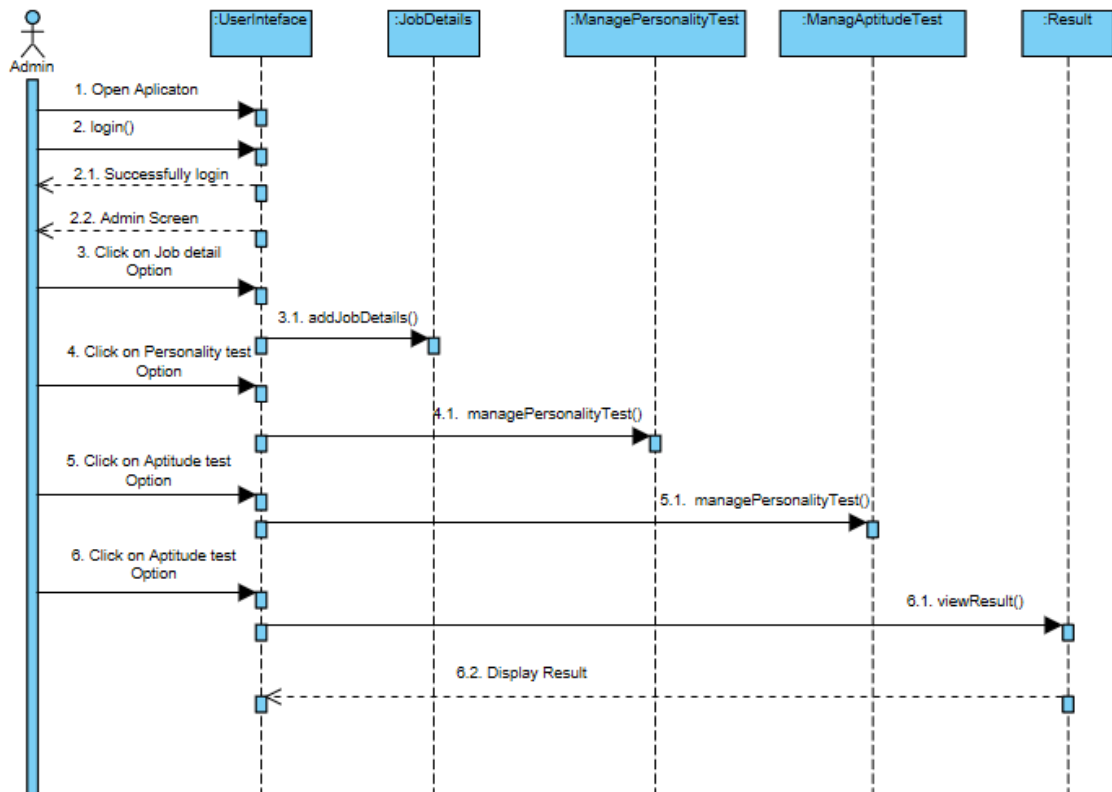### 4.6.1 Component Diagram
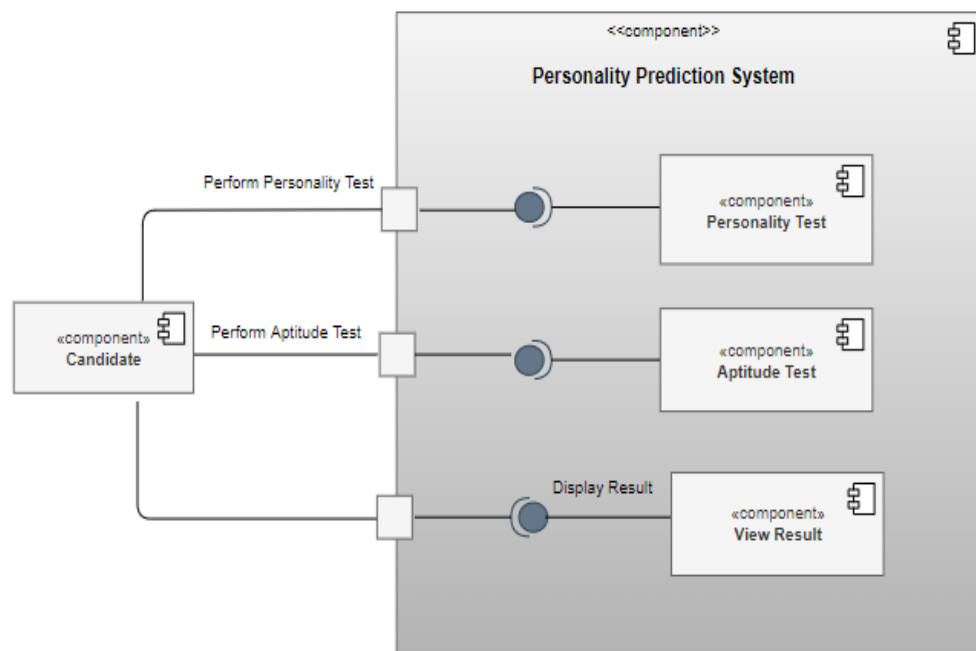
- **For Candidate:**

Fig.4.9: Component Diagram for Candidate Module

The diagram shown in Figure 4.9 is the component diagram of Personality Prediction System for Candidate Module. A component candidate will perform Personality Test in Personality Test component by giving data to it. Similarly, Candidate perform aptitude test in Aptitude section. At the end, Candidate will be able to see result which System will display.

- **For Admin:**
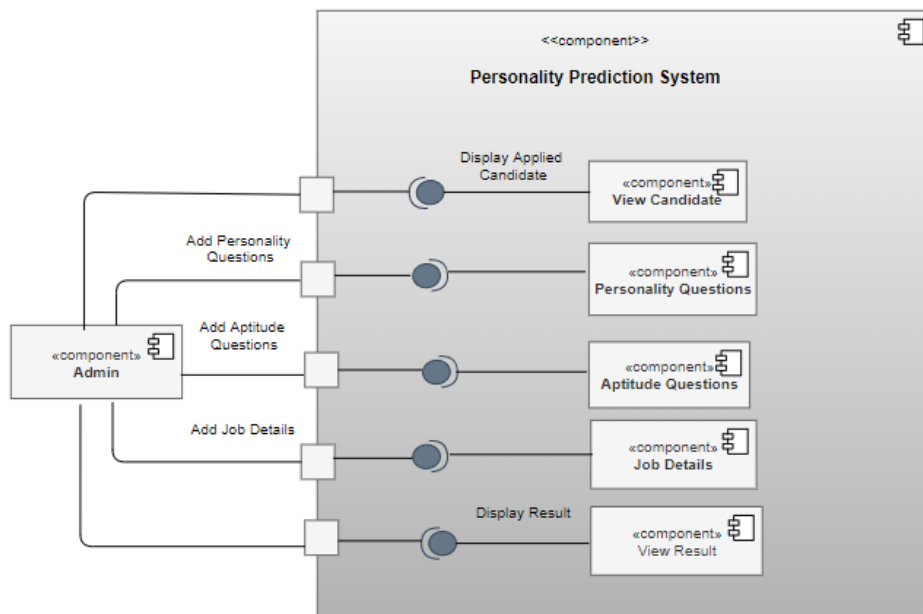
Fig.4.10. Component Diagram for Admin Module

The diagram shown in Figure 4.10 is the component diagram of Personality Prediction System for Admin Module. The Figure shows that Admin Add personality Test and Aptitude Test in system by giving data to the system. Admin also adding job details regarding to particular job. At the end system will display result of candidate who are selected for particular post.

4.7 Data Models

4.7.1 ER Diagram
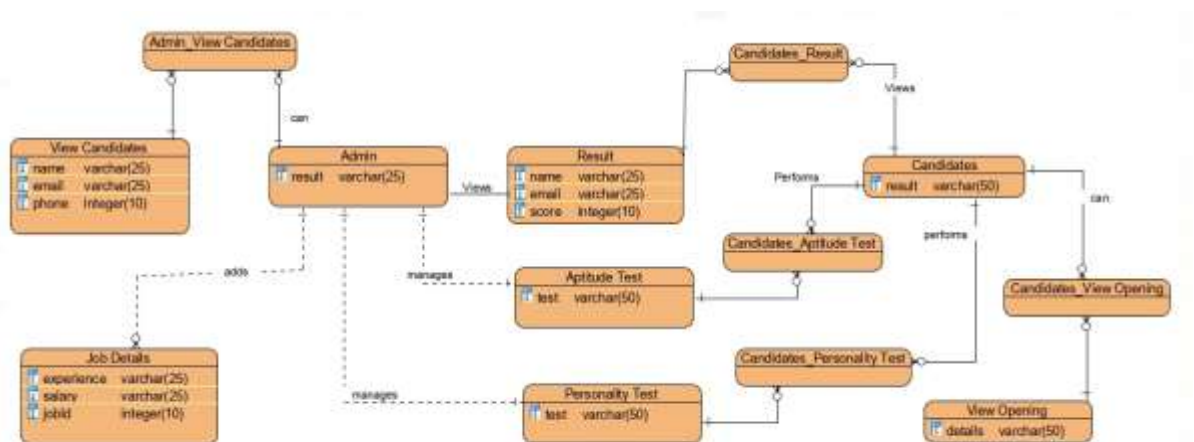
Fig.4.11: ER Diagram for Personality Prediction System

39
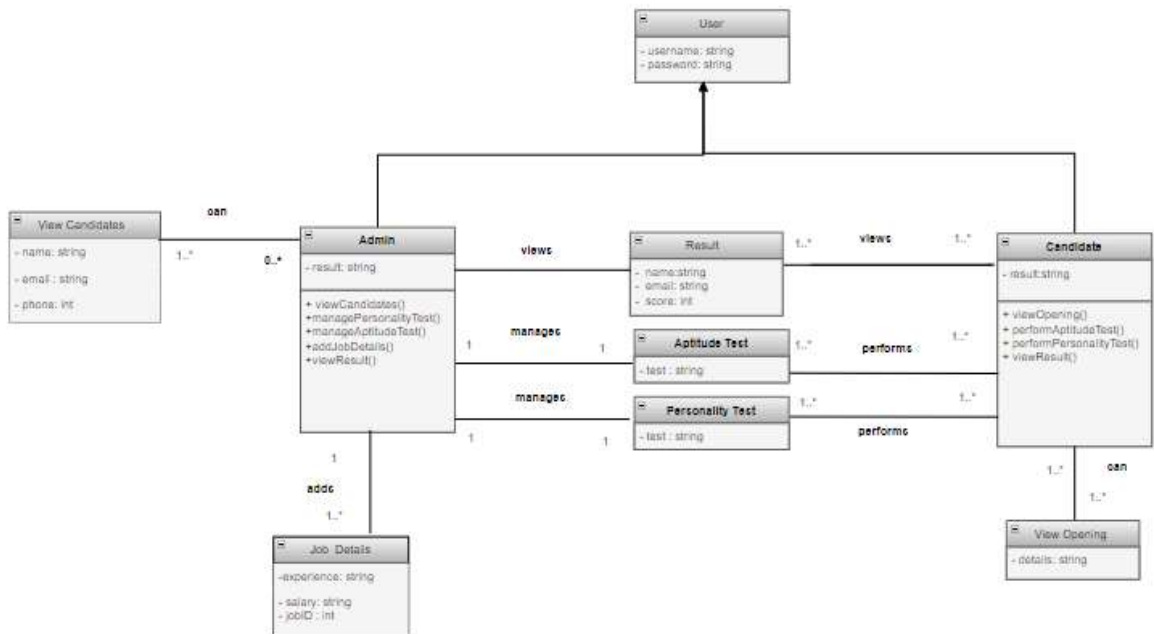
4.7.2   Class Diagram

Fig.4.12: Class Diagram of Personality Prediction System

The Figure 4.12 shows Class Diagram of the Personality Prediction System.

- **User class** includes
  Attribute: Username and Password both of string data type.
- **Admin class** includes
  Attributes: result which is of string data type
  Operations: viewCandidates(), managePersonalityTest(), manageAptitudeTest(), addJobDetails(), viewResult()
- **Applied Candidates** includes
  Attributes: name, email, phone all are of string data type.
- **Job Details class** includes
  Attributes: experience, salary, jobD are of string data type.
- **Result class** includes
  Attributes: score, email, rank, name are of string data type.
- **Candidate class** includes
  Attributes: result which is of string data type
  Operations: viewOpening(), performPersonalityTest, performAptitudeTest(), viewResult()
- **Opening class** includes
  Attributes: details which is of string data type
- **Personality Test class** includes
  Attributes: test which is of string data type.
- **Aptitude Test class** includes
  Attributes: test which is of string data type

4.8 User Interface Design

The PPS needs to have the following interfaces through which the candidates and admin will be able to use and communicate with the system:
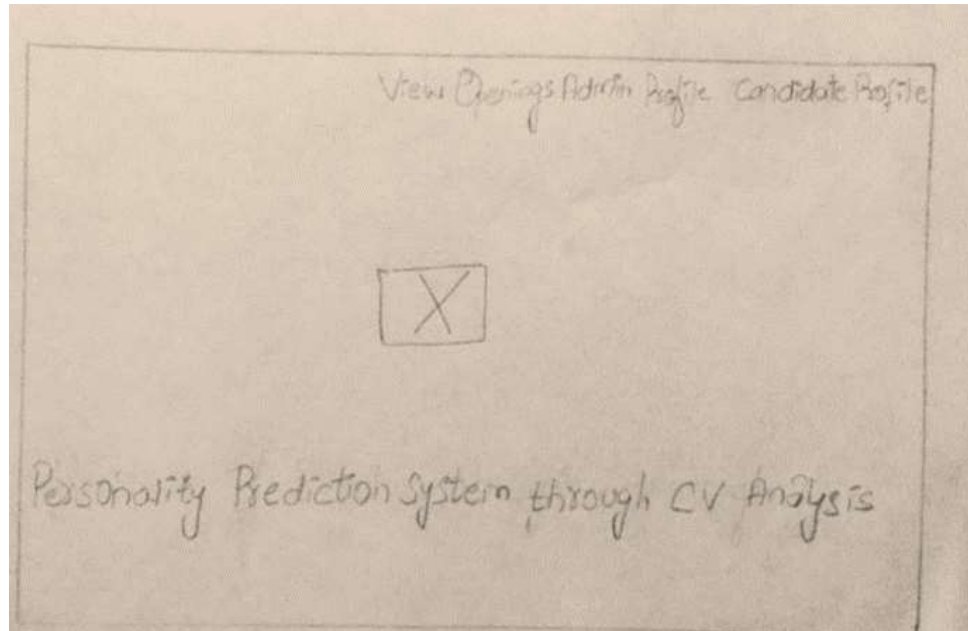
Fig.4.13: Low fidelity Main Screen
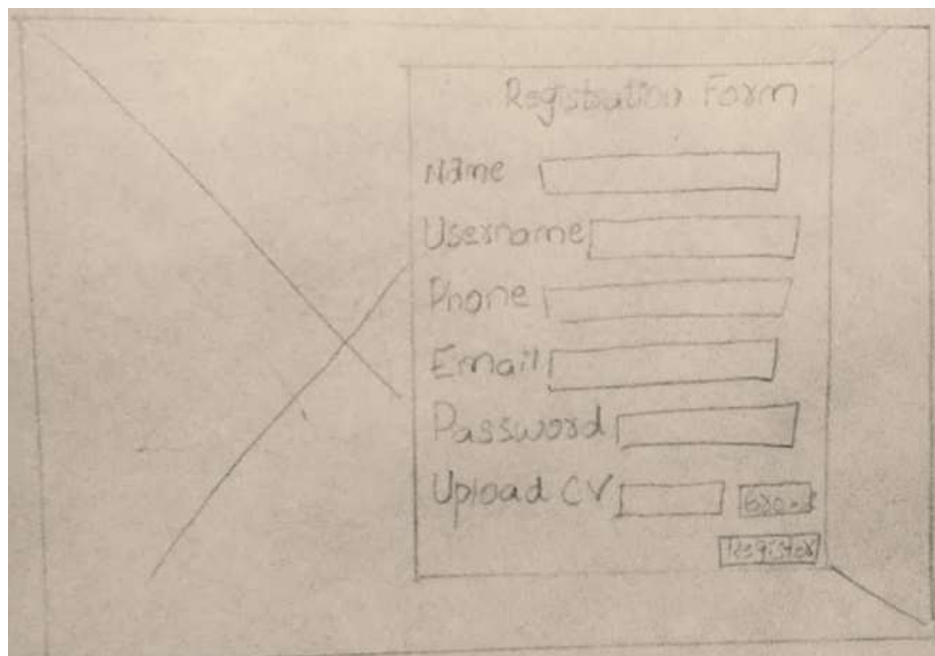
Fig.4.14: Low fidelity Main Screen Registration Form
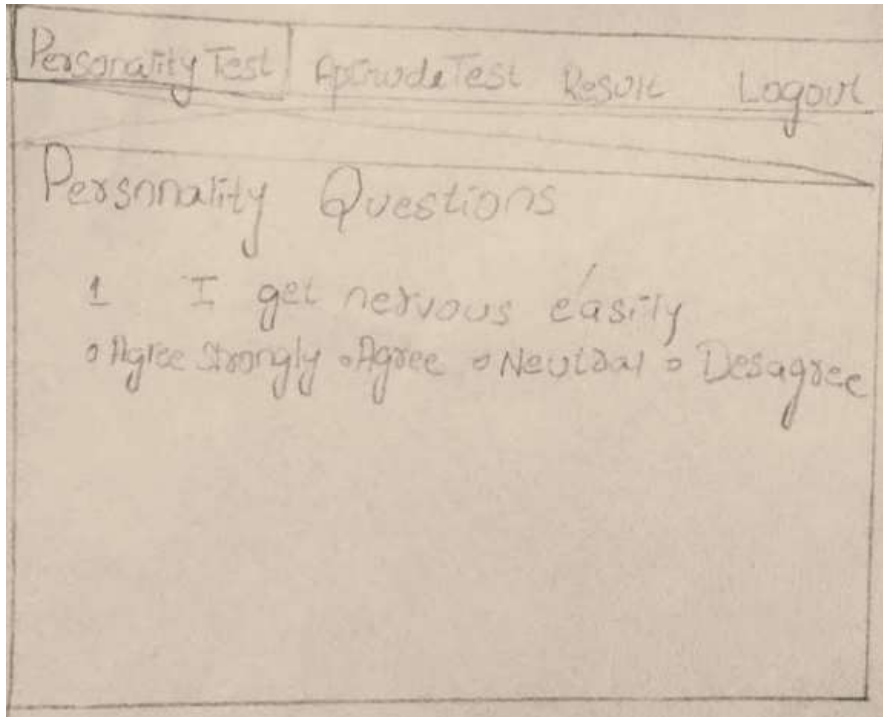
Fig.4.15: Low fidelity Personality Test
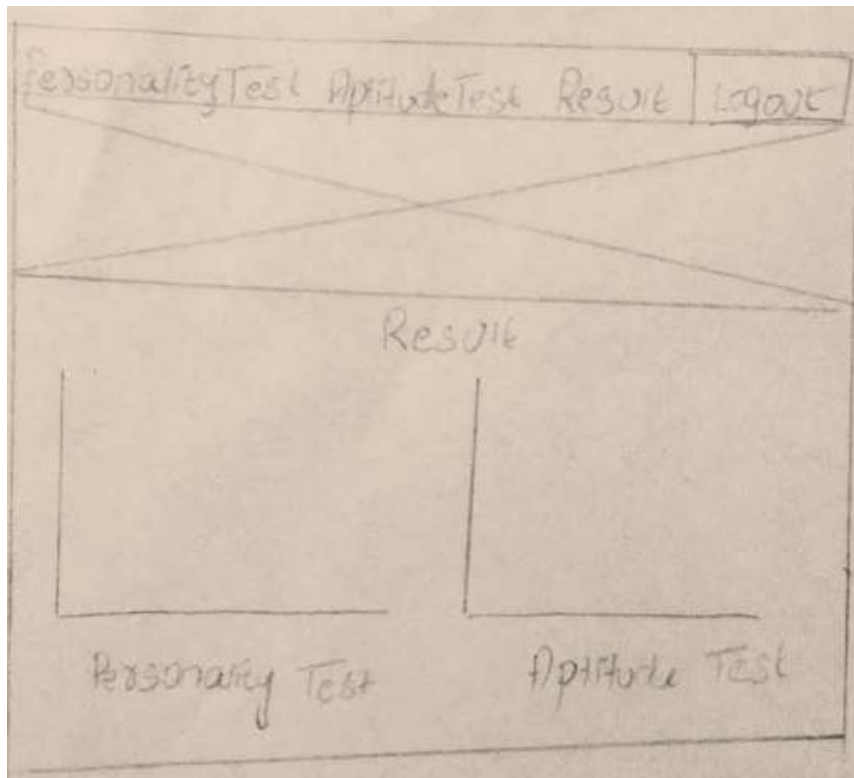
Fig.4.16: Low fidelity Result Screen

Fig.4.17: Low fidelity Job details Screen

Fig.4.18: Low fidelity final result Screen
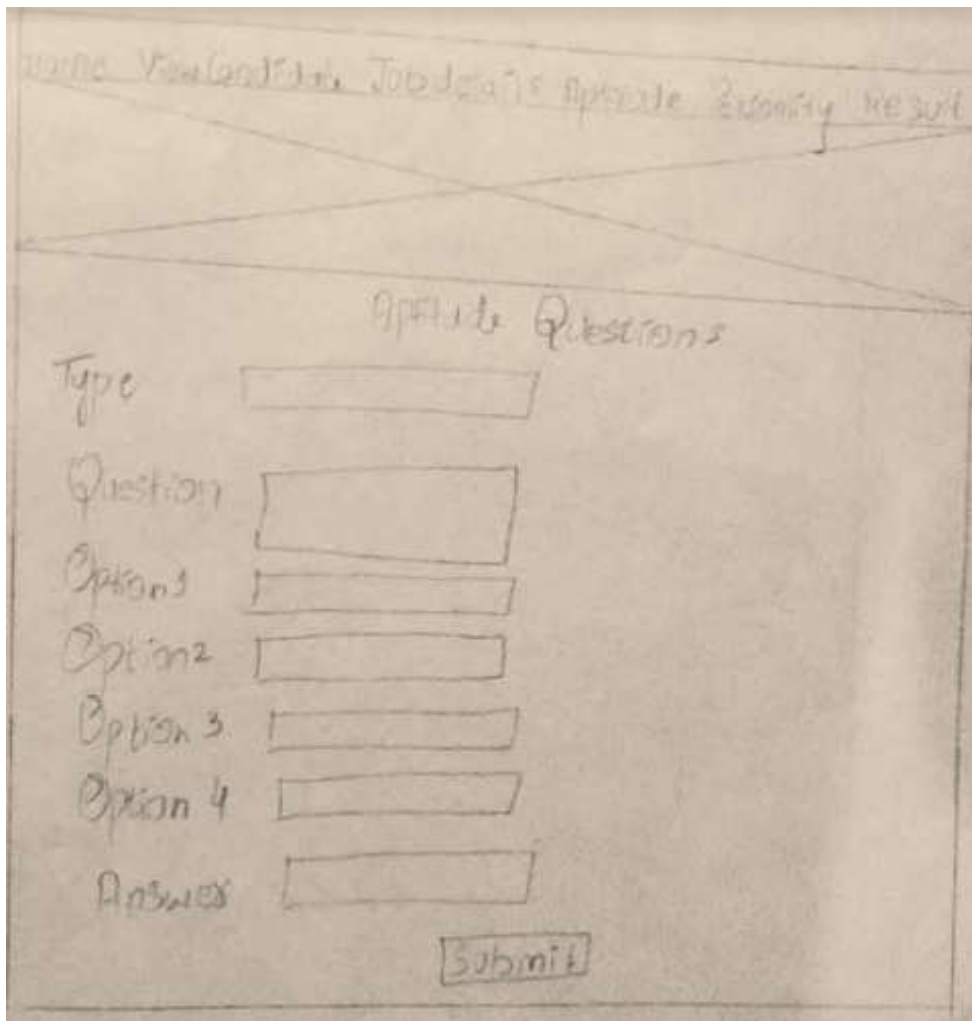
Fig.4.19: Low fidelity Add Aptitude test Screen.

4.9 System prototype

4.9.1 Screen shot of Main screen:
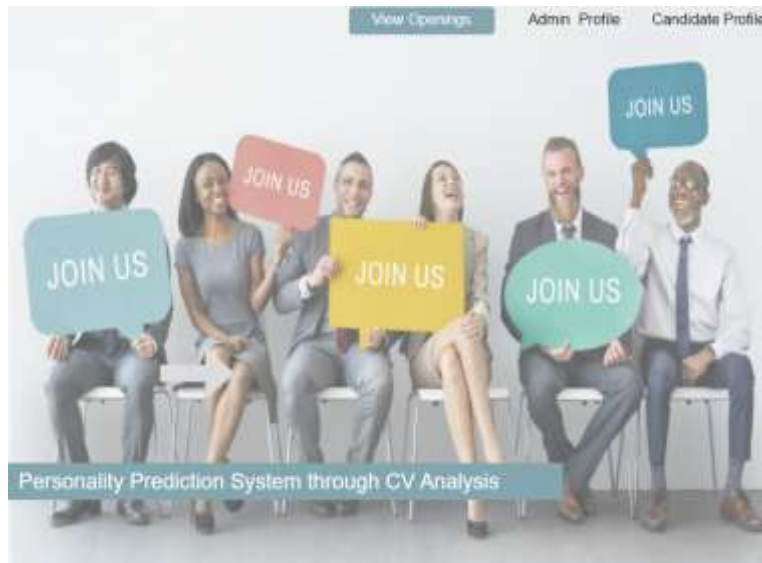
Fig.4.20. Main screen of Personality Prediction System

4.9.2 Screen shot of Registeration screen of Candidate

Fig.4.21. Registeration of Candidate

4.9.3 Screen shot of Sign In screen of candidate panel

Fig.4.22: Sign in of Candidate.

4.9.4 Screen shot of Personality Test screen of candidate
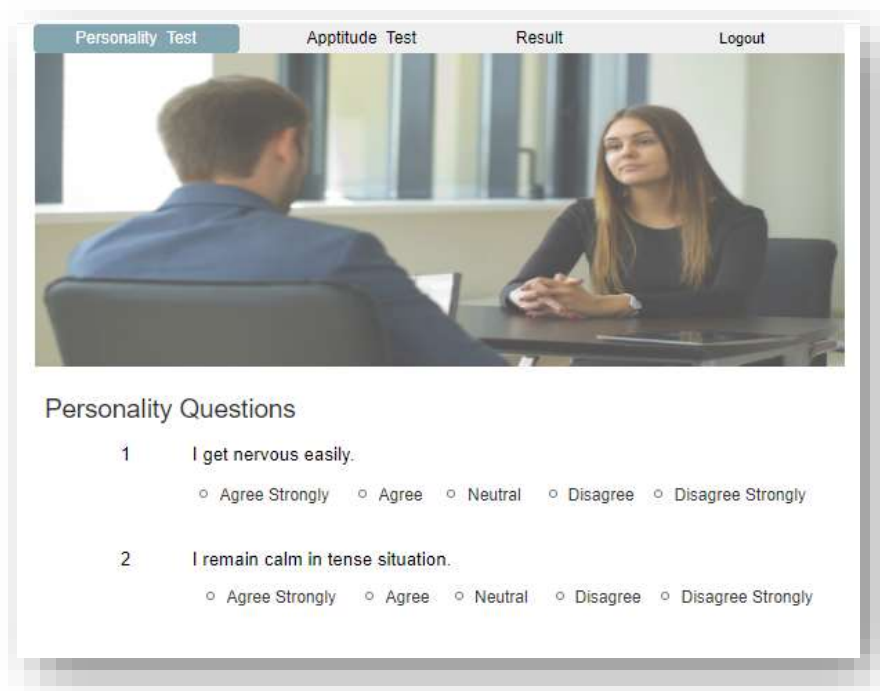
Fig.4.23. Personality Prediction Test

4.9.5 Screen shot of Aptitude Test of Candidate
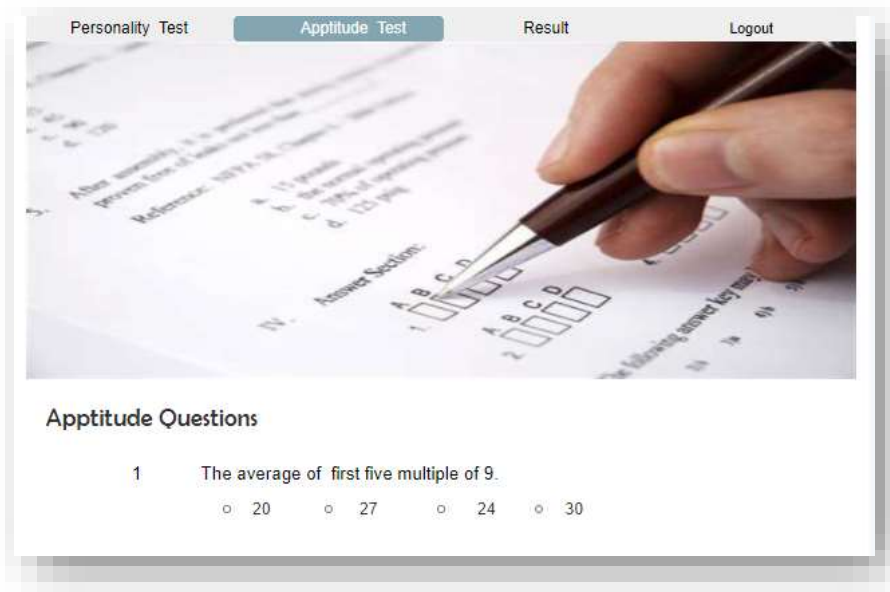
Fig.4.24. Aptitude Test

4.9.6 Screen shot of Result screen of candidate
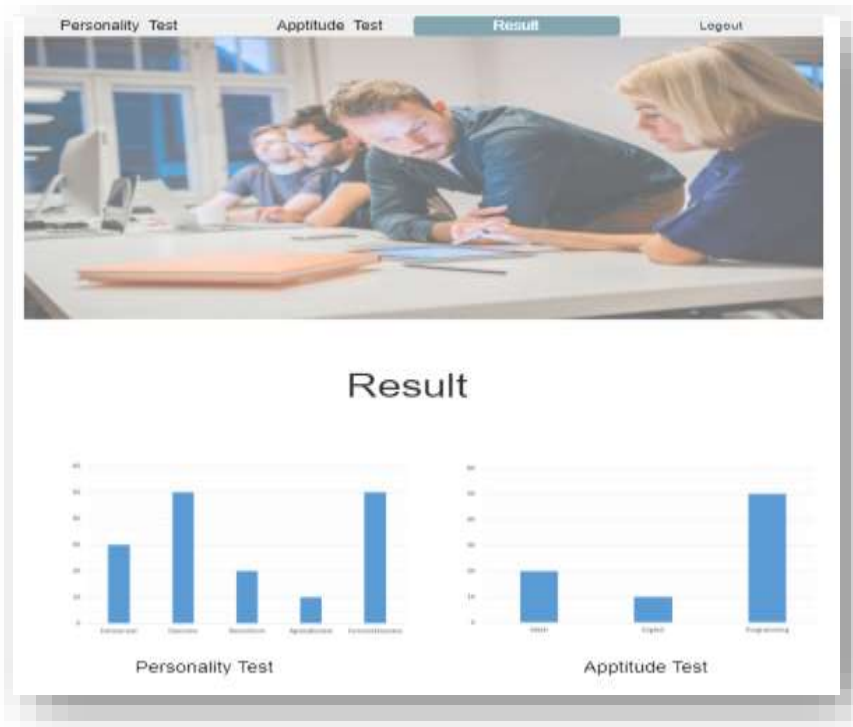
Fig4.25.: Result

4.9.7 Screen shot of Home screen of Admin Panel

Fig 4.26. Home of Admin

4.9.8 Screen shot of Sign In scree of Admin
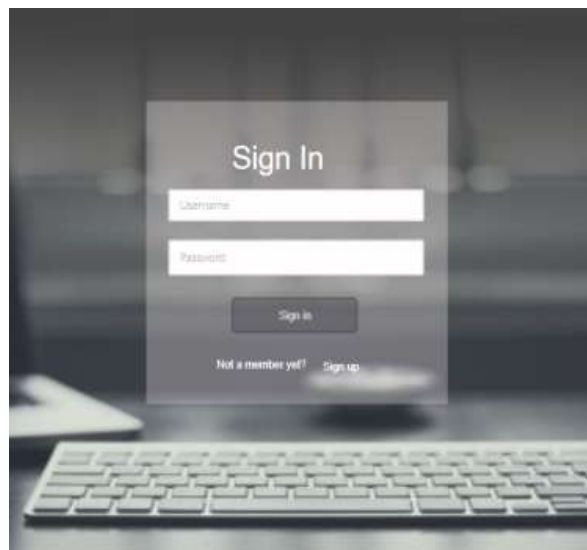
Fig.4.27. Login

4.9.9 Screen shot of View Candidate screen

Fig. 4.28. View Candidate

4.9.10 Screen shot of Job details
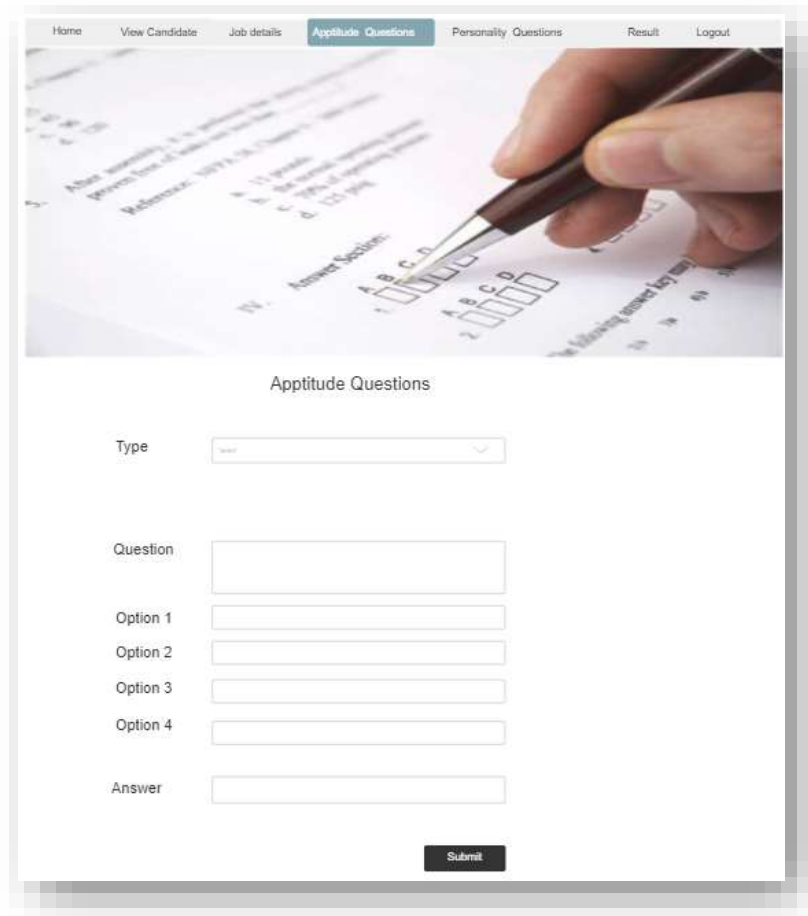
Fig.14.29: Job details

4.9.11 Screen shot of Aptitude Question screen

Fig.14.30. Aptitude Questions

4.9.12 Screen shot of Result screen

Fig.14.31. Result

4.10 Conclusion

In this chapter, design of personality prediction system through CV analysis has been discussed. I have discussed design constraints and system architecture.

I also have covered the logical design of our system by including Class and ER diagram. I have also covered the dynamic view of our project by including state, sequence and activity diagrams.

CHAPTER-05

SYSTEM IMPLEMENTATION

5.1 Tool Used:

PyCharm Community edition 2019:

It is used for the development and implementation of personality prediction system using CV analysis. Interface designing, coding and debugging all are available. It is free to download with its latest version.

Database:

SQLite is used as the database in personality prediction system through CV analysis which is capable of storing thousands of candidate data easily.

Programming Language:

Python:

Python is used as a programming language for the development of web-based application in PyCharm. It is used to implement all the functionalities of web application.

Html and CSS:

For the designing of web-based application, Html and CSS has been used.

jQuery and XML:

jQuery and XML are also used in the development of the project.

RezScore API:

This API has been used in the project to score CV based on skills and experience. When candidate register himself by uploading his CV, API send CV to Rezscore, score it, and return it to the system.

5.2 Methodologies:

To implement our system in an efficient way, we used iterative development method. Iterative development is a way of breaking down the software development of a large system into smaller chunks. In iterative development, feature code is designed, developed and tested in repeated cycles. With each iteration, additional features can be designed, developed and tested until there is a fully functional software application ready to be deployed. We have used this approach in developing our project. [6]

- **Planning:**

The initial stage was a planning stage, in which we mapped out specific details including software requirements as well as preparation for the other stages to follow.

- **Analysis stage:**

The second stage was analysis, which was performed to set in place the database models, business logic and so on that will be necessary. In analysis stage, personality test has also been selected.

- **Design stage:**

The design stage also took place here, wherein technical requirements were established that were necessary to meet any needs determined in the analysis stage. In this stage, system low-fidelity and high-fidelity prototype has been designed.

- **Implementation stage:**

Next was the implementation and coding phase where I coded my system. Python and Django framework has been used in the development process. Rezscore API has been used for scoring the candidate CV.

- **Testing stage:**

After this the testing procedures were carried out to identify any issues or bugs that have shown up. Acceptance testing is carried out where test cases of every function has been formed.

- **Evaluation stage:**

Finally, once the previous stages were completed, a thorough evaluation was of all development up to this stage. In this way the different iterations were completed, and software was developed in different iterations.

5.3 Conclusion:

In this chapter, implementation of personality prediction system has been discussed. I have discussed the programming languages used for the development as well as the IDE used, and the databases used. I have discussed the methodology that is used for the development of our project.

CHAPTER-06

SYSTEM TESTING AND EVALUATION

6.1 Test Strategy

I have used manual testing approach for testing the personality prediction system for CV Analysis. In this approach, testing will be carried out in phases. Various test cases will be made by keeping in view each case in manual testing approach. Following points were considered while testing our system:

A Correct system must accomplish the following:

• Compute correct results

• Each type of input must be included in the test cases.

• Each feature should be working properly.

• Use the inputs that are outside of the domain of system.

• Test cases should include both right and wrong condition.

6.2 Component Testing

Component testing is defined as a software testing type, in which the testing is performed on each individual component separately without integrating with other components. It's also referred to as Module Testing. At the initial level, small modules were developed and tested on the individual basis. We developed interfaces and checked the working of those interfaces separately.

6.3 Unit Testing

Unit testing is a white box testing which is done by developer at the time of development. I have performed this testing before component testing. After the development of every feature, I have checked those features while it is working according to requirement or not.

6.4 Integrated Testing

After testing different components individually, we performed the integration testing of those components by integrating them with one another and checked whether they perform the required functionality together or not. This testing approach helped us in integrating all the units of the system efficiently. In this phase, the integration testing of the two modules in our system such as Admin Module and Candidate was carried

out. I found out that both were well integrated with each other and performed the desired functionality.

6.5 System Testing

System testing has been performed after the implementation. All functionality in my project has been tested to test the complete system. Testing of different functionalities one by one has been carried out such as adding job details, performing aptitude and personality tests etc. After testing the complete project, it is concluded whole system is working according to requirements.

6.6 Test Cases

For Candidate Panel

6.6.1   Test case 01: View Openings (Valid)

ID	01
FRID	1
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection.
Assumptions	The internet should be active in the system.
Input	Tab of "View Openings" should be clicked.
Action/Steps	1. Open the website. 2. Select the "View Openings" from the main page.
Expected Result	All the available vacancies details will be displayed in this web page. Users can select most suitable job for themselves.
Actual Result	Different jobs details display after selecting "View Opening".
Status	Success

6.6.2 Test case 02: Registration (Valid)

ID	02
FRID	2
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection.
Assumptions	The internet should be active in the system.
Input	First name: aleeza Last name: safdar Username: aleeza_x Password: password Email: aleeza32@gmail.com Phone: 03439325105 CV Path: CV
Action/Steps	1. Open the website. 2. Select the "Candidate Login" from the main page. 3. After pressing candidate login tab, click on "sign up" option. 4. Enter first name. 5. Enter last name. 6. Enter the username. 7. Enter the password 8. Enter the Email. 9. Enter the contact number. 10. Upload resume. 11. Click on "Register" button.
Expected Result	The system will register the candidate.
Actual Result	User registers herself after entering all details.
Status	Success

6.6.3 Test case 03: Registration (Invalid)

ID	03
FRID	2
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection.
Assumptions	Enter more than 11-digit phone number.
Input	First name: aleeza Last name: safdar Username: aleeza_x Password: password Email: aleeza32@gmail.com Phone: 034393251041 CV Path: CV
Action/Steps	1. Open the website. 2. Select the "Candidate Login" from the main page. 3. After pressing candidate login tab, click on "sign up" option. 4. Enter first name. 5. Enter last name. 6. Enter the username. 7. Enter the password 8. Enter the Email. 9. Enter more than 11 digit contact number. 10. Upload resume. 11. Click on "Register" button.
Expected Result	The system will not register the candidate, it will give error message.
Actual Result	The system shows error message "Ensure this value at most 11 characters".
Status	Success

6.6.4 Test case 04: Registration (Second Invalid)

ID	04
FRID	2
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection.
Assumptions	Enter invalid email address.
Input	First name: aleeza
	Last name: safdar
	Username: aleeza_x
	Password: password
	<mark>Email: aleeza23</mark>
	Phone: 0343932510
	CV Path: CV
Action/Steps	1. Open the website.
	2. Select the "Candidate Login" from the main page.
	3. After pressing candidate login tab, click on "sign up" option.
	4. Enter first name.
	5. Enter last name.
	6. Enter the username.
	7. Enter the password
	8. Enter the Email.
	9. Enter more than 11 digit contact number.
	10. Upload resume.
	11. Click on "Register" button.
Expected Result	The system will not register the candidate, it will give error message.
Actual Result	The system showed error message "Enter a valid email address".
Status	Success

6.6.5   Test case 05: Login (valid)

ID	**05**
FRID	3
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection. User must be registered.
Assumptions	N/A
Input	Username: esha_x Password: esha1234
Action/Steps	1. Enter the username. 2. Enter the password 3. Click on "Login" button.
Expected Result	User will login successful in the system. The system will show candidate panel.
Actual Result	User successfully log in. The system shows candidate panel.
Status	Success

6.6.6 **Test case 06:** Personality Test (valid)

ID	**06**
FRID	4
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection. User must login the system.
Assumptions	Users fill all questions in the personality Test.
Input	Enter all answers of the given MCQs questions.

Action/Steps	1. Click on "Personality Test" option.
	2. Click on "Start the test"
	3. Enter all answers.
	4. Click on "Submit" button.
Expected Result	The system will submit the user test.
	The system will display "Go to result" option.
Actual Result	The system submits personality test and displays option "Go to result" to check the result.
Status	Success

6.6.7 Test case 07: Perform Personality Test (Invalid)

ID	**07**
FRID	4
Tittle	Perform Personality Test
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection.
	User must login the system.
Assumptions	Users leave any question in the personality Test.
Input	Enter the answers to the questions and leave any question.
Action/Steps	1. Click on "Personality Test" option.
	2. Click on "Start the test"
	3. Enter few answers.
	4. Click on "Submit" button.
Expected Result	The system does not submit the user test.
	The system will display error message "All questions are mediatory".
Actual Result	The system does not submit personality test and displays error message "All questions are mediatory".
Status	Success

6.6.8 Test case 08: Perform Aptitude Test (Valid)

ID	08
FRID	5
Tittle	Perform Aptitude Test
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection. User must login the system.
Assumptions	Users fill all questions in the Aptitude Test.
Input	Enter all answers of the given MCQs questions.
Action/Steps	1. Click on "Aptitude Test" option. 2. Click on "Start the test" 3. Enter all answers. 4. Click on "Submit" button.
Expected Result	The system will submit the user test. The system will display "Go to result" option.
Actual Result	The system submits aptitude test and displays option "Go to result" to check the result.
Status	Success

6.6.9 Test case 09: Perform Aptitude Test (Invalid)

ID	09
FRID	5
Tittle	Perform aptitude Test
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection. User must login the system.
Assumptions	Users leave any question in the Aptitude Test.
Input	Enter the answers to the questions and leave any question.

Action/Steps	1. Click on "Aptitude Test" option.
	2. Click on "Start the test"
	3. Enter few answers.
	4. Click on "Submit" button.
Expected Result	The system does not submit the user test. The system will display error message "All questions are mediatory".
Actual Result	The system does not submit aptitude test and displays error message "All questions are mediatory".
Status	Success

6.6.10 Test case 10: View Result (valid)

ID	10
FRID	6
Tittle	View Result
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection. User must login the system. User must give test either of personality or aptitude.
Assumptions	User gives test before checking the result.
Input	Click on "Result" option.
Action/Steps	1. Click on "Result" button.
Expected Result	The system will display the graph of both Personality and Aptitude test.
Actual Result	The system shows graph of both test with tittle.
Status	Success

For Admin Panel:

6.6.11 Test case 11: Add job details (valid)

ID	**11**
FRID	7
Tittle	Add job details
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection. Admin must login the system.
Assumptions	N/A
Input	Select "Job Openings" option. Click on "Add Job Opening" Description: Need web developer Skills: Python, C++ Experience: 2 years Salary: 250000 Qualification: BSCS Responsibilities: Must be efficient in given language. Tittle: Full Stack developer
Action/Steps	1. Select "Job Opening" option. 2. Click on "Add Job Opening" button. 3. Enter the description of the job. 4. Enter skills. 5. Enter the experience. 6. Enter the salary. 7. Enter the qualification. 8. Enter responsibilities. 9. Enter the tittle. 10. Click on "Save" button.
Expected Result	The system will add the job detail successfully.
Actual Result	The system adds job detail successfully.
Status	Success

6.6.12 Test case 12: Add job details (Invalid)

ID	12
FRID	7
Tittle	Add job details
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection. Admin must login the system.
Assumptions	N/A
Input	Select "Job Openings" option. Click on "Add Job Opening" Description: Need web developer Skills: Python, C++ Experience: 2 years Salary: 250000 Qualification: Responsibilities: Must be efficient in given language. Tittle: Full Stack developer
Action/Steps	1. Select "Job Opening" option. 2. Click on "Add Job Opening" button. 3. Enter the description of the job. 4. Enter skills. 5. Enter the experience. 6. Do not enter salary. 7. Enter the qualification. 8. Enter responsibilities. 9. Enter the tittle. 10. Click on "Save" button.
Expected Result	The system will not add job details.

	The system will display error "This field is required" below the empty field.
Actual Result	System do not add job details and display error message to fill all fields.
Status	Success

6.6.13 Test case 13: Add Questions (Valid)

ID	**13**
FRID	8
Tittle	Add Questions
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection. Admin must login the system.
Assumptions	N/A
Input	Select "Questions" option. Click on "Add Questions" Question: Do not cry _____ spilt milk. Option1: on Option2: over Option3: for Option4:in Option5: none of above Test type: <mark>Aptitude</mark> Job: Web developer Category: English Correct: 2
Action/Steps	1. Select "Questions" option. 2. Click on "Add Questions" button. 3. Enter the question. 4. Enter option 1. 5. Enter option 2.

	6. Enter option 3.
	7. Enter option 4.
	8. Enter option 5.
	9. Select the test type.
	10. Select the Job.
	11. Select the category.
	12. Enter correct option.
	13. Click on "Save" button.
Expected Result	The system will add questions.
Actual Result	The system adds questions.
Status	Success

6.6.14 Test case 14: Add Questions (Valid Alternative)

ID	**14**
FRID	8
Tittle	Add Questions
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection.
	Admin must login the system.
Assumptions	All field required in the form.
Input	Select "Questions" option.
	Click on "Add Questions"
	Question: I curious about many different things.
	Option1: Disagree strongly
	Option2: Disagree a little
	Option3: Neutral
	Option4: Agree a little
	Option5: Agree strongly
	Test type: <mark>Personality</mark>
	Job: Web developer
	Category: Openness

	Correct: 5	
Action/Steps	1. Select "Questions" option. 2. Click on "Add Questions" button. 3. Enter the question. 4. Enter option 1. 5. Enter option 2. 6. Enter option 3. 7. Enter option 4. 8. Enter option 5. 9. Select the test type. 10. Select the Job. 11. Select the category. 12. Enter correct option. 13. Click on "Save" button.	
Expected Result	The system will add questions.	
Actual Result	The system adds questions.	
Status	Success	

6.6.15 Test case 15: Add Questions (Invalid)

ID	15
FRID	8
Tittle	Add Questions
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection. Admin must login the system.
Assumptions	N/A
Input	Select "Questions" option. Click on "Add Questions" Question: I curious about many different things. Option1: Disagree strongly Option2: Disagree a little Option3: Neutral Option4: Agree a little Option5: Agree strongly

	Test type: Personality
	Job:
	Category: Openness
	Correct: 5
Action/Steps	1. Select "Questions" option.
	2. Click on "Add Questions" button.
	3. Enter the question.
	4. Enter option 1.
	5. Enter option 2.
	6. Enter option 3.
	7. Enter option 4.
	8. Enter option 5.
	9. User does not enter the test type.
	10. Select the Job.
	11. Select the category.
	12. Enter correct option.
	13. Click on "Save" button.
Expected Result	The system will not add question.
	The system will show error "This field is required" under empty field.
Actual Result	The system shows error to fill all field.
Status	Success

6.6.16 Test case 16: Add Questions (Invalid)

ID	16
FRID	9
Tittle	Add Questions
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection.
	Admin must login the system.
Assumptions	N/A
Input	Select "Questions" option.
	Click on "Add Questions"

	Question: I curious about many different things.
	Option1: Disagree strongly
	Option2: Disagree a little
	Option3: Neutral
	Option4: Agree a little
	Option5: Agree strongly
	Test type:
	Job: Web developer
	Category: Openness
	Correct: 5
Action/Steps	1. Select "Questions" option.
	2. Click on "Add Questions" button.
	3. Enter the question.
	4. Enter option 1.
	5. Enter option 2.
	6. Enter option 3.
	7. Enter option 4.
	8. Enter option 5.
	9. User does not enter the test type.
	10. Select the Job.
	11. Select the category.
	12. Enter correct option.
	13. Click on "Save" button.
Expected Result	The system will not add question.
	The system will show error "This field is required" under empty field.
Actual Result	The system shows error to fill all field.
Status	Success

6.6.17 Test case 17: View User info (Valid)

ID	17
FRID	10
Tittle	View User info
Performed By	Ms. Aleeza Safdar

Preconditions	System must have active Internet connection.
	Admin must login the system.
Assumptions	N/A
Input	Select "User Profile Info" option.
Action/Steps	1. Admin runs system.
	2. Admin login in the system.
	3. Select "User Profile Info".
Expected Result	The system will show details of all candidates.
Actual Result	The system shows the details of candidates.
Status	Success

6.6.18 Test case 18: View result (Valid)

ID	**18**
FRID	11
Tittle	View result
Performed By	Ms. Aleeza Safdar
Preconditions	System must have active Internet connection.
	Admin must login the system.
	Candidate must give both personality and aptitude test after.
	Candidate must upload CV during registration.
Assumptions	N/A
Input	Select "User Profile Info" option.
Action/Steps	1. Admin runs the system.
	2. Admin login in the system.
	3. Select "Scores" option.
Expected Result	The system will display results of all candidates.
Actual Result	The system displays the details of candidates.
Status	Success

6.7 Results & Evaluation

All test cases have been performed successfully after the execution of each functionality. They have been performed manually. It gave exact the same result as actual system is giving.

6.8 Conclusion

In this chapter, I have discussed different testing types. I have performed testing manually. Test cases have been made of every functional requirement.

CHAPTER-07

CONCLUSION

7.1 Contributions

There is existing system which have few same functionalities as this project but all of the features which are in this project are not available in just one existing system. So, this project is a complete package which includes all recruiting functions in just on platform.

In this system, the candidate and admin both will have an easy access and they can manage and use the system respectively. With the help of PPS, the admin can manage all the candidates within short period of time.

7.2 Reflections

In Pakistan, organizations are not much aware of this system which can recruit candidates based on their skills and from personality perspectives. Mostly, recruits select candidates manually by going through their CVs. Sometimes they hire wrong person for work because on CV candidates just mention their skills which later are harmful for organization because of lack of personality development. So, in our country such efficient and effective system required which can handle all recruiting functions at one platform. Moreover, it saves a lot of time and money of organization which they spend on recruiting,

7.3 Future work

Personality Prediction System through CV analysis can be helpful in future. It can be used to hire the candidates in huge amount. Organization does not need to go through paperwork for recruiting. Candidate registers with his CV and performs personality test and aptitude test. System will evaluate candidate and display the result which candidate is suitable.

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APPENDICES:

➔ Personality Test

Faiza Nisar (Lecturer professional psychology department BUIC)

I am Faiza Nisar, Lecturer Professional Psychology department has suggested Ms. Rakam Saleem, SE Department to use Big-five Model of Personality.

Thanks.

02/03/2

Big 5 Inventory – Scoring Key

Instructions for scoring: Key items that are bold, italicized, and underlined (e.g., _**E**_) should be reverse scored. To reverse score an item, change 1 to 5, 2 to 4, 4 to 2, and 5 to 1. After reverse scoring, find the total score for E (Extroversion), A (Agreeableness), C (Conscientiousness), N (Neuroticism), and O (Openness). Important note: Please be sure to submit original responses on each item to the Psi Beta spreadsheet. So please do NOT report reverse-scored data, just original responses made by your participants.

__1	Is talkative	E	__23	Tends to be lazy	_**C**_
__2	Tends to find fault with others	_**A**_	__24	Is emotionally stable, not easily upset	_**N**_
__3	Does a thorough job	C	__25	Is inventive	O
__4	Is depressed, blue	N	__26	Has an assertive personality	E
__5	Is original, comes up with new ideas	O	__27	Can be cold and aloof	_**A**_
__6	Is reserved	_**E**_	__28	Perseveres until the task is finished	C
__7	Is helpful and unselfish with others	A	__29	Can be moody	N
__8	Can be somewhat careless	_**C**_	__30	Values artistic, aesthetic experiences	O
__9	Is relaxed, handles stress well	_**N**_	__31	Is sometimes shy, inhibited	_**E**_
__10	Is curious about many different things	O	__32	Is considerate and kind to almost everyone	A
__11	Is full of energy	E	__33	Does things efficiently	C
__12	Starts quarrels with others	_**A**_	__34	Remains calm in tense situations	_**N**_
__13	Is a reliable worker	C	__35	Prefers work that is routine	_**O**_
__14	Can be tense	N	__36	Is outgoing, sociable	E
__15	Is ingenious, a deep thinker	O	__37	Is sometimes rude to others	_**A**_
__16	Generates a lot of enthusiasm	E	__38	Makes plans and follows through with them	C
__17	Has a forgiving nature	A	__39	Gets nervous easily	N
__18	Tends to be disorganized	_**C**_	__40	Likes to reflect, play with ideas	O
__19	Worries a lot	N	__41	Has few artistic interests	_**O**_
__20	Has an active imagination	O	__42	Likes to cooperate with others	A
__21	Tends to be quiet	_**E**_	__43	Is easily distracted	_**C**_
__22	Is generally trusting	A	__44	Is sophisticated in art, music, or literature	O

FYP Thesis(Pakeeza)

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