

Placement Assistant software Experiential Learning Report on Software Engineering and Project Management



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Problem Statement:

The Placement Assistant software aims to facilitate students' access to information regarding available placements through an Intranet system. The current process involves students applying electronically for desired placement opportunities, leading to the automated transmission of their CVs to potential employers. Communication throughout the placement process, including interview details and offers, is conducted via email. While some manual intervention is anticipated, the overarching goal is to automate the process to the greatest extent possible. The system needs to support key functionalities such as enrolling students, notifying students about enrolled companies, facilitating CV submissions, notifying students about job requirements, matching CVs to job profiles, communicating job offers, collecting company feedback, and obtaining student feedback. The challenge lies in developing a seamless, efficient, and automated system that streamlines the placement process while accommodating necessary human interactions.

1. Software Requirements Specification (SRS) document.

Solution :

1.Functional Requirements:

R.1.1 Student Enrollment

Description: The system shall allow administrators to enroll students. Students should provide their personal information, academic records, and career preferences during enrollment. Each student shall have a unique identifier.

Input:

Student's personal information (name, email, contact details).

Academic records (transcripts, GPA, courses completed).

Career preferences (desired job roles, industries, locations).

Any other relevant details (skills, certifications, etc.).

Output:

Student's unique identifier (ID) generated by the system.

A confirmation message indicating successful enrollment.

User account credentials (username and password) for future login.

R.1.2 Company Enrollment

Description: The system shall allow administrators to enroll companies. Companies shall provide their company details, job openings, and recruitment preferences during enrollment. Each company shall have a unique identifier.

Input:

Company details (name, industry, location).

Job openings (positions, job descriptions, qualifications, application deadlines).

Recruitment preferences (desired qualifications, experience levels, etc.).

Output:

Company's unique identifier (ID) generated by the system.

Confirmation message indicating successful enrollment.

User account credentials (username and password) for future login.

R.1.3 Submit CV

Description: Students shall be able to submit their CVs through the system. The CV submission shall include personal information, education history, work experience, and other relevant details. CVs shall be stored securely and associated with the respective student's profile.

Input:

Student's Curriculum Vitae (CV) containing personal and professional details.

Output:

CV stored securely in the system database, associated with the student's profile.

Confirmation message indicating successful CV submission.

R.1.4 Notify Job Requirements

Description: Companies shall be able to post job requirements, including job descriptions, qualifications, and application deadlines. The system shall notify students of new job requirements that match their profiles.

Input:

Job requirements posted by companies.

Output:

Notifications sent to students who match the job requirements.

Job requirements displayed in the student's dashboard.

R.1.5 Send Matching CV

Description: When a student applies for a job, the system shall send the matching CVs to the corresponding company. Companies shall have access to view and assess the submitted CVs.

Input:

Student applications for specific job openings.

Access to student CVs.

Output:

Matching CVs sent to the corresponding company for evaluation.

Confirmation message indicating successful transmission.

R.1.6 Notify Job Offer

Description: Companies shall be able to make job offers to selected students through the system. The system shall notify students of job offers via email or in-app notifications.

Input:

Job offers made by companies to selected students.

Output:

Notifications sent to students who receive job offers.

Job offers displayed in the student's dashboard.

R.1.7 Company Feedback

Description: After the recruitment process is complete, companies shall be able to provide feedback on the selected students. Feedback may include comments on the student's performance during interviews or other relevant information.

Input:

Feedback from companies regarding the recruitment process and selected students.

Company identifier (ID) for tracking feedback.

Output:

Feedback data stored in the system's database.

Confirmation message indicating successful submission of feedback.

R.1.8 Student Feedback

Description: Students shall have the option to provide feedback on their placement experience and the company they were placed in. Feedback may include comments on the company's recruitment process, work environment, and overall satisfaction.

Input:

Feedback from students regarding their placement experience and the company they were placed in.

Student identifier (ID) for tracking feedback.

Output:

Feedback data stored in the system's database.

Confirmation message indicating successful submission of feedback.

2. Non-Functional Requirements

The non-functional requirements capture those requirements of the customer that cannot be expressed as functions (i.e., accepting input data and producing output data).

The Non-functional Requirements are:

2.1 User Interface

The UI should be intuitive and easy to navigate.

The UI should follow a modern design language.

The UI should be responsive on different screen sizes.

2.2 Performance

The software should respond promptly to user interactions.

Searches and data retrieval should be efficient, even with a large dataset.

2.3 Security

User passwords should be securely stored using encryption.

User data should be protected from unauthorized access.

2.4 Compatibility

The software should function smoothly on different operating systems and browsers.

2.5 User Documentation

The software will come with comprehensive user documentation that includes installation, instructions, user guides, and troubleshooting information.

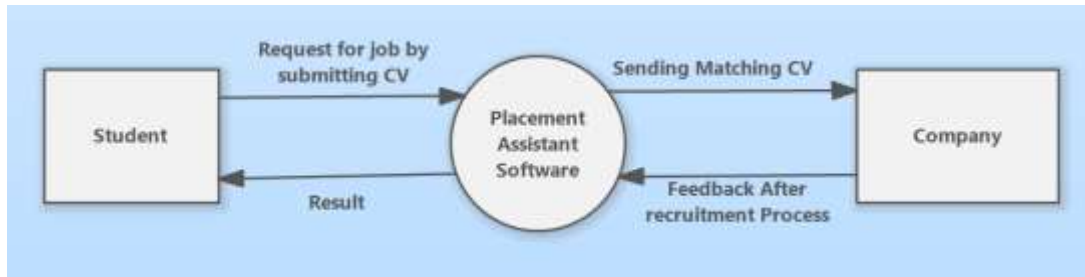
2.6 Reliability

The software shall have a high level of availability and reliability, ensuring minimal downtime during the critical phase of the placement process.

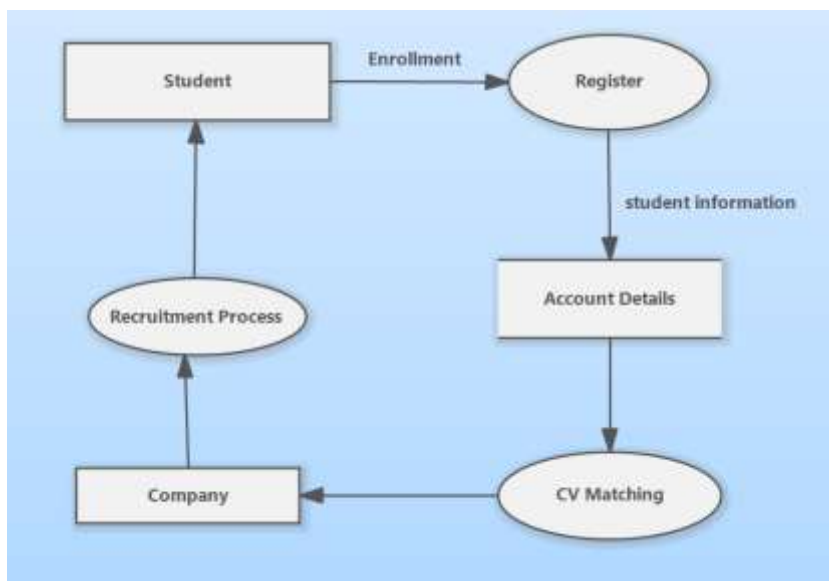
2.Data Flow Diagram (DFD) comprising context diagram (level 0), level 1 DFD, level 2 DFD.

Solution:

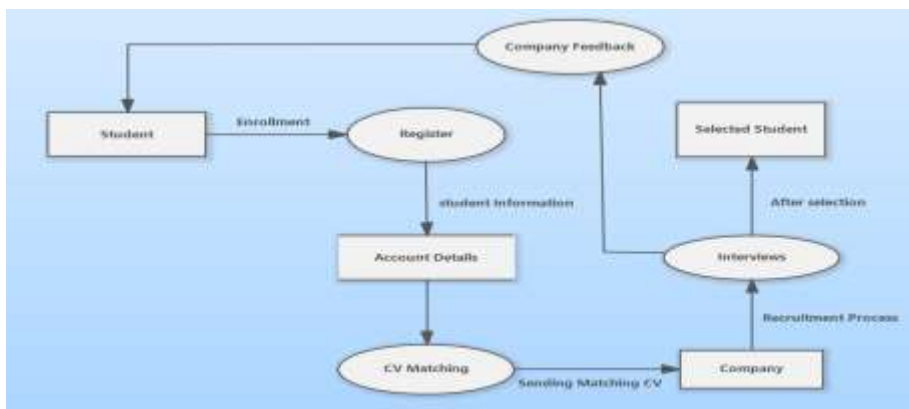
context diagram (level 0) :



level 1 DFD :



level 2 DFD :



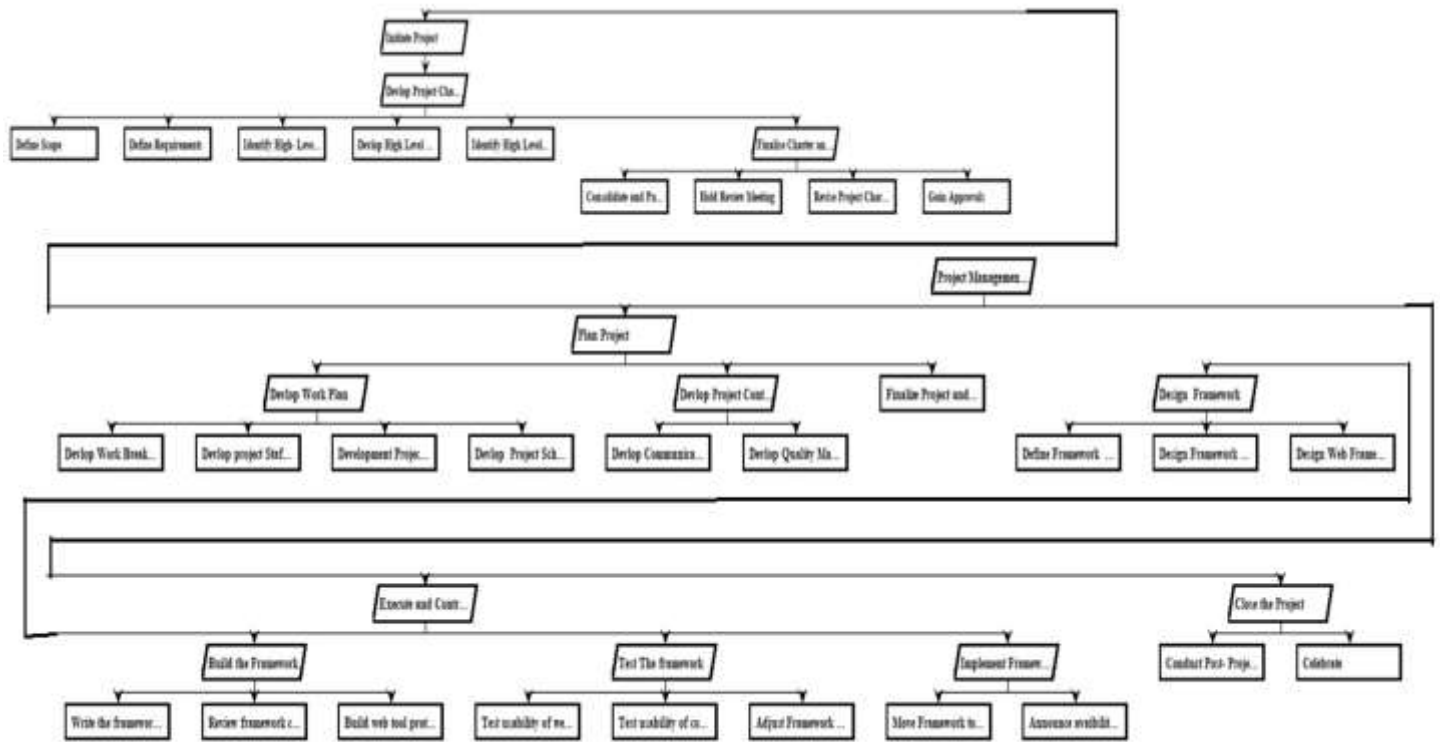
3.Data dictionary:

Table	Column Name	Data Type	Description
Students	Student ID	Integer	Unique identifier for each student
Students	First Name	String	Student's first name
Students	Last Name	String	Student's last name
Students	Email	String	Student's email address
Students	Phone Number	String	Student's phone number
Students	Major	String	Student's major
Students	GPA	Decimal	Student's GPA
Students	Resume	Blob	Student's resume

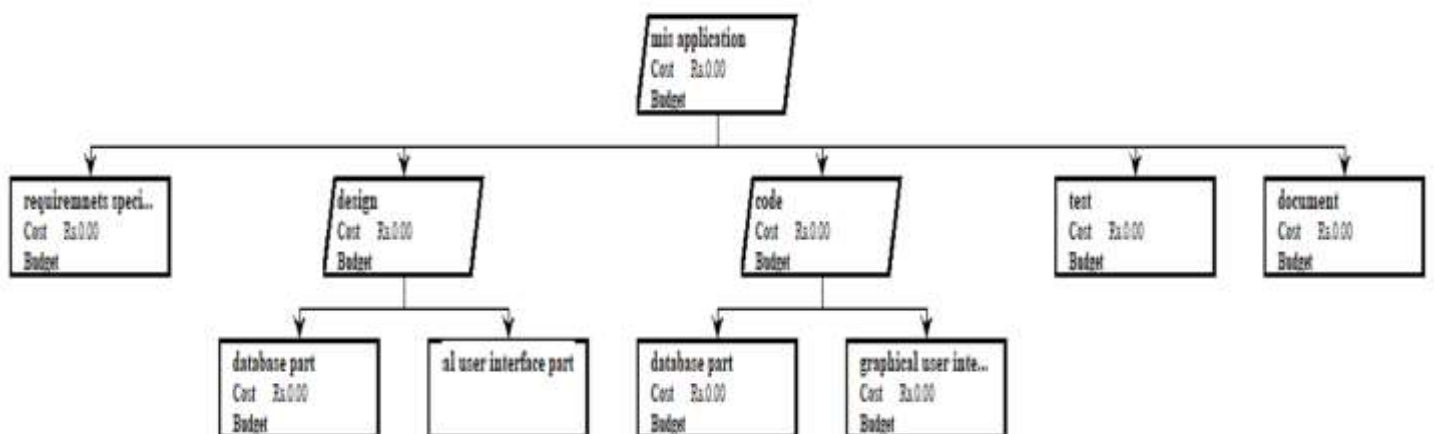
4.Work Breakdown Structure.

Solution :

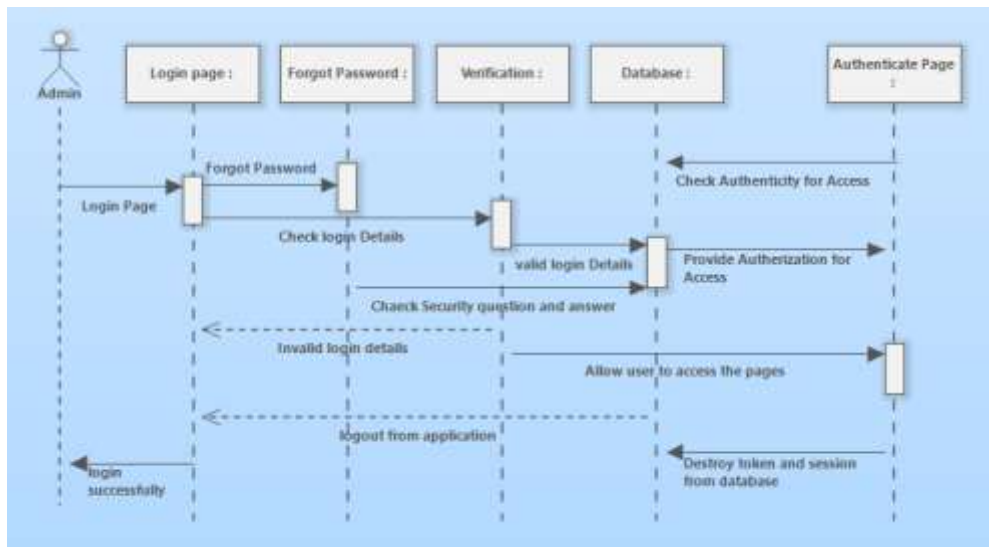
		Name	Duration	Start	Finish	Oct 23	5 Nov 23	12 Nov 23	19 Nov 23
						M T W T F S	M T W T F S	M T W T F S	M T W T F S
1		Construction of House	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
2		Internal	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
3		Electrical	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
4		Rough-in-electrical	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
5		Install and terminate	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
6		HVAC equipment	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
7		Plumbing	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
8		Rough-in-plumbing	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
9		Set plumbing fixtures a	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
10		Set and Clean	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
11		Foundations	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
12		Excavate	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
13		pour concrete	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
14		cure and strip forms	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
15		steel erection	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
16		steel columns	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
17		beams	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
18		joist	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
19		external	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
20		masonry works	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
21		lay masonry	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
22		install of roof drains	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
23		install tile in toilet room	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
24		roofing	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
25		building finishes	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
26		paint walls	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
27		ceiling ties	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
28		hang wallpaper	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
29		carpet	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				
30		hardware	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM				



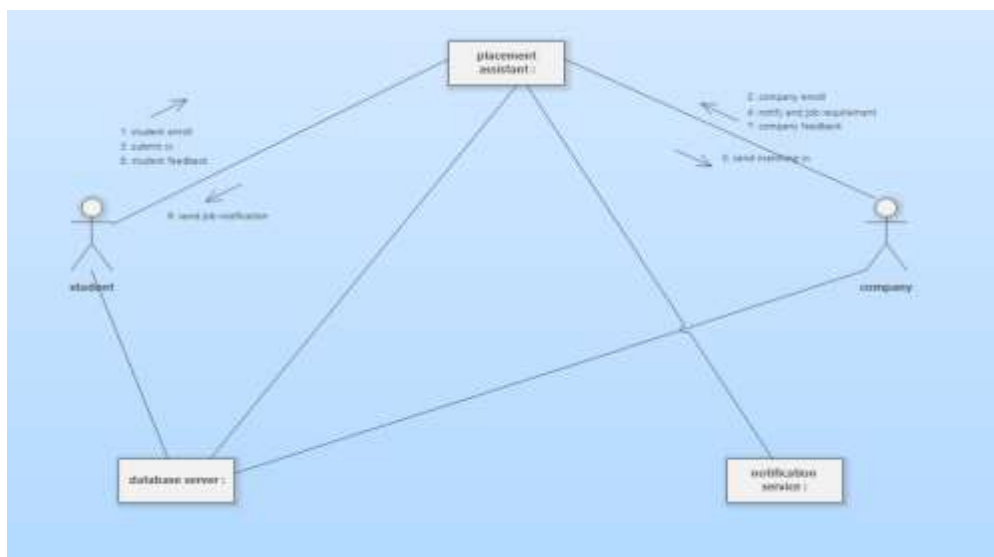
	Name	Duration	Start	Finish	Oct 23	5 Nov 23	12 Nov 23
					M T W T F S	S M T W T F S	S M T W T F S
1	<input type="checkbox"/> mis application	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM			
2	requiremets specifications	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM			
3	<input type="checkbox"/> design	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM			
4	database part	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM			
5	graphical user interface p	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM			
6	<input type="checkbox"/> code	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM			
7	database part	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM			
8	graphical user interface p	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM			
9	test	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM			
10	document	1 day?	2/11/23 8:00 AM	2/11/23 5:00 PM			



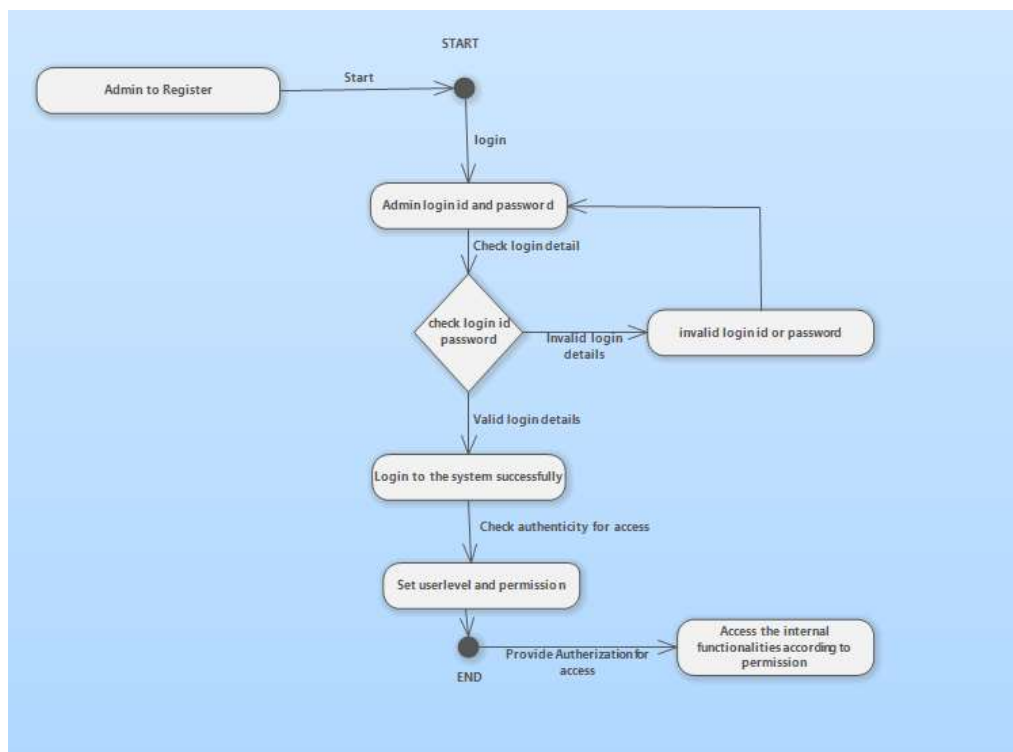
Sequence Diagram :



Communication Diagram :



Activity Diagram :



1. Test case document :

Solution :

The purpose of this test case document is to outline the testing procedures for the Placement Assistant software. The tests will be designed to ensure that the software meets all functional and non-functional requirements.

Scope

The scope of this testing will cover all major functionalities of the Placement Assistant software, including:

- Registration
- Profile Review
- Job Matching
- Application Assistance

- Interview Preparation
- Interview Completion
- Job Offer Received
- Job Acceptance
- Employment
- Exit

Test Cases

Test Case 1: Registration :

Objective: Verify that the user can successfully register for an account.

Test Steps:

1. Open the Placement Assistant software.
2. Click on the "Register" button.
3. Enter the required information (name, email address, password).
4. Click on the "Submit" button.

Expected Result: The user should be successfully registered for an account and redirected to the profile review page.

Test Case 2: Profile Review

Objective: Verify that the Placement Assistant can review the user's profile and identify potential job openings.

Test Steps:

1. Log in to the Placement Assistant software.
2. Complete the user profile with skills, interests, and career goals.
3. Click on the "Submit" button.

Expected Result: The Placement Assistant should review the user's profile and identify potential job openings. The user should be notified of any potential matches.

Test Case 3: Job Matching :

Objective: Verify that the Placement Assistant can match the user's profile with relevant job openings.

Test Steps:

1. Log in to the Placement Assistant software.
2. Review the list of potential job openings.
3. Click on a job opening to view more details.

Expected Result: The job opening details should match the user's skills, interests, and career goals. The user should be able to apply for the job directly from the Placement Assistant software.

Test Case 4: Application Assistance :

Objective: Verify that the Placement Assistant can provide guidance on crafting resumes and cover letters.

Test Steps:

1. Log in to the Placement Assistant software.
2. Click on the "Application Assistance" tab.
3. Review the resources on crafting resumes and cover letters.
4. Use the Placement Assistant's resume and cover letter templates to create application materials.

Expected Result: The user should be able to create polished and professional application materials using the Placement Assistant's guidance and resources.

Test Case 5: Interview Preparation :

Objective: Verify that the Placement Assistant can provide interview preparation tips and practice sessions.

Test Steps:

1. Log in to the Placement Assistant software.
2. Click on the "Interview Preparation" tab.
3. Review the interview preparation tips.
4. Schedule a mock interview with the Placement Assistant.

Expected Result: The user should feel more prepared for job interviews after reviewing the Placement Assistant's tips and participating in a mock interview.

Test Case 6: Interview Completion :

Objective: Verify that the Placement Assistant can provide support after the user completes a job interview.

Test Steps:

1. Log in to the Placement Assistant software.
2. Click on the "Interview Completion" tab.
3. Provide feedback on the job interview.
4. Seek guidance on evaluating job offers.

Expected Result: The user should feel supported and informed after completing a job interview and receiving feedback from the Placement Assistant.

Test Case 7: Job Offer Received :

Objective: Verify that the Placement Assistant can assist in negotiating job offers and evaluating options.

Test Steps:

1. Log in to the Placement Assistant software.
2. Click on the "Job Offer Received" tab.
3. Discuss the job offer details with the Placement Assistant.
4. Receive guidance on negotiating job offers and evaluating options.

Expected Result: The user should make an informed decision about accepting or declining a job offer after receiving guidance from the Placement Assistant.

Test Case 8: Job Acceptance :

Objective: Verify that the Placement Assistant can provide guidance on onboarding and starting a new job.

Test Steps:

1. Log in to the Placement Assistant software.
2. Click on the "Job Acceptance" tab.
3. Discuss the onboarding process with the Placement Assistant.
4. Receive guidance on starting a new job successfully.

Expected Result: The user should feel prepared and confident

References

1. "Fundamentals of Software Engineering", by Rajib Mall, PHI, 5th Edition, 2015.
2. <https://www.softwareideas.net/en/download>