



## K. K. Wagh Polytechnic, Nashik.

Hirabai Haridas Vidyanagari, Amrutdham, Panchavati, Nashik-422003

### DEPARTMENT OF COMPUTER TECHNOLOGY

#### Micro-Project Report

Academic Year: 2023-24

Course: Software Testing

Semester:5 Class: TYCM-Lin

Institute Code: 0078

Program: Computer Technology

Course Code: 22518 Scheme: I

Date of Report : / / 2023

**Title of Micro-Project:** Prepare Test Cases, Test Plan, Defect Report for A holistic approach to campus recruitment and student profile analysis for placement

#### Problem Definition:

The problem definition serves as the foundation for creating comprehensive test cases, a robust test plan, and an effective defect report. In the area of test cases, a well-defined problem is crucial for outlining diverse scenarios that the software must undergo to ensure its functionality, performance, and reliability. The test plan, on the other hand, depends on a clear problem definition to establish testing objectives, scope, resources, and schedules, providing a roadmap for the testing process. Simultaneously, the defect report depends on problem definition to accurately document any deviations or malfunctions discovered during testing, facilitating clear communication between the testing team and developers for efficient issue resolution. These three components, intertwined by a common problem definition, collectively contribute to a systematic and thorough quality assurance process.

#### 2.0 Rationale:

In today's software environment writing bug-free code is a challenging task, which makes software testing an important tool to get the quality software. Testing techniques include the process of executing a program or application with the intent of finding software bugs and verifying that the software product is fit for use. Students will learn the way to find bugs by applying types, levels and methods of software testing on applications with an effective test planning approach. It also covers manual testing.

#### 3.0 Aim of Micro-Project:

Test cases, Test plan and Defect report for training and placement application will ensure that the software meets the needs of both students and admin, functions reliably and doesn't have critical defects that could impact the placement process. Its part of the quality assurance process to deliver a robust and dependable application.

#### 4.0 Course Outcomes Achieved (COs):

**CO504.1:** Apply various software testing methods.

**CO504.2:** Prepare test cases for different types and levels of testing.

**CO504.3:** Prepare test plan for an application.

**CO504.4:** Identify bugs to create defect report of given application.

**CO504.5:** Test software for performance measures using automated testing tools.

#### 5.0 Literature Review:

The literature on test cases, test plans, and defect reports emphasizes their pivotal roles in the software development life cycle. Test cases serve as executable documentation, systematically verifying individual components and overall system functionality. A well-structured test plan is crucial for effective testing, encompassing various testing phases and ensuring comprehensive coverage. It acts as a roadmap, guiding the testing team through different scenarios and ensuring the software meets specified requirements. Defect reports play a crucial role in quality assurance by documenting identified issues, aiding in communication between development and testing teams, and facilitating the debugging process. The literature underscores the importance of these elements in enhancing software quality, reducing post-release defects, and ultimately contributing to the overall success of software development projects.

## 6.0 Actual Methodology followed:

The methodology used for this micro project is :

1. Test Cases: Develop comprehensive test cases covering diverse user inputs, potential edge cases, and system responses.
2. Test Plan: Outline a systematic testing approach, including unit, integration, and user acceptance testing, to ensure a thorough validation process.
3. Defect Report: Establish a detailed defect reporting system, documenting identified issues with severity levels, and providing clear steps for resolution.

## 7.0 Actual Resources used:

Sr. No.	Name of Resource/material	Specifications	Qty	Remarks
1	Laptop	AMD Ryzen 3 3250U with Radeon Graphics 2.60 GHz, RAM 8GB, SSD-1TB	01	For project work
2	Other software	Microsoft Word 2016	01	For documentation
3	Reference book:	A Craftsman's Approach" - Paul C. Jorgensen	01	For testing algorithms & test cases.
4	Websites	<a href="https://ieeexplore.ieee.org/document/8769571">https://ieeexplore.ieee.org/document/8769571</a>	01	For referring sample projects.

## 8.0 Outputs of the Micro-Project:

### 8.0.1 Test Plan

Test plan for training and placement application	
Test Plan ID	ICRPT-TP-001
Introduction	This test plan outlines the testing approach and strategy for the Integrated Campus Recruitment, Placement, and Training Analysis (ICRPT) system. The purpose is to ensure the system's functionality, reliability, and performance meet the specified requirements.
Test Items	<p>The following features of the ICRPT system will be tested:</p> <ol style="list-style-type: none"><li>1. User Authentication and Authorization</li><li>2. Student Profile Management</li><li>3. Job Posting and Management</li><li>4. Resume Upload</li><li>5. Communication</li><li>6. Admin Panel</li></ol>

	<p>7. Mobile Compatibility</p> <p>8. Skill Assessment</p> <p>9. Video and Audio Assessment</p> <p>10. Job Matching Algorithm</p> <p>11. Analytics and Reporting</p> <p>12. Job Application Tracking</p> <p>13. Candidate Selection Notification</p>
Features Not to be Tested	<p>The following features will not be tested in this plan:</p> <p>1.Third-party integrations</p> <p>2.Performance testing (handled in a separate performance testing plan)</p>
Features Pass/Fail Criteria	<p>The test cases for each feature should meet the following criteria to be considered "Passed":</p> <p><b>1.Educational criteria:</b></p> <ul style="list-style-type: none"> <li>• <b>Pass:</b> meets the minimum educational requirements. Typically involves having the necessary degree, diploma or certification specified by the organization.</li> <li>• <b>Fail:</b> Do not meet the minimum educational requirements failing to have the required educational background specified in the application guidelines.</li> </ul> <p><b>2. Application completion:</b></p> <ul style="list-style-type: none"> <li>• <b>Pass:</b> submit a complete and accurate application form</li> <li>• <b>Fail:</b> submit an incomplete or inaccurate application form.</li> </ul> <p><b>3. Timely submission:</b></p> <ul style="list-style-type: none"> <li>• <b>Pass:</b> Submitting the quiz or assessment within the specified timeframe.</li> <li>• <b>Fail:</b> Submit the quiz or assessment after specified deadline which often results in disqualifications.</li> </ul> <p><b>4. Academic integrity:</b></p> <ul style="list-style-type: none"> <li>• <b>Pass:</b> Completing the quiz or assessment without any form of cheating or using other unauthorized materials</li> <li>• <b>Fail:</b> Violating academic integrity by cheating or using unauthorized material during the quiz and assessment.</li> </ul> <p><b>5. Data accuracy:</b></p> <ul style="list-style-type: none"> <li>• <b>Pass:</b> Student profile data is accurate and up to date</li> <li>• <b>Fail:</b> Student profile data is inaccurate or outdated.</li> </ul> <p><b>6. Data Security:</b></p> <ul style="list-style-type: none"> <li>• <b>Pass:</b> Student profile data is securely stored.</li> <li>• <b>Fail:</b> Unauthorized users can access and modify profiles.</li> </ul> <p><b>7. Profile update:</b></p> <ul style="list-style-type: none"> <li>• <b>Pass:</b> changes the student profile accurately reflect in the system, with no data loss.</li> <li>• <b>Fail:</b> Data is lost or corrupted during profile update.</li> </ul> <p><b>8. Job location:</b></p> <ul style="list-style-type: none"> <li>• <b>Pass:</b> the job location is accurately specified, including city, state and country, remote work option.</li> <li>• <b>Fail:</b> Misleading information regarding the job location</li> </ul>

Suspension Criteria	<p><b>1. Incomplete information:</b> Temporarily the profiles until all required information is provided. Ensure that profile are only processed with complete and accurate data.</p> <p><b>2. Duplicate profiles:</b> Suspend additional profiles created by the same student and request clarification. Avoid processing of multiple duplicate profiles, ensuring data consistency.</p> <p><b>3. Misleading Information:</b> Temporarily suspend a job posting. If it contains misleading or inaccurate information regarding the job title, duties, requirements or benefits. Ensure transparency and accuracy in job description to attract qualified candidates.</p> <p><b>4. Lack of company information:</b> Temporarily suspend a job posting. If it lacks of overview of the hiring company, its values, culture and mission which can make the job less attractive to candidate. Enhance the appeal of the job opportunity by providing insights into the hiring company.</p> <p><b>5. Unauthorized access:</b> Temporarily suspend the assessment if unauthorized individuals gain access to the assessment or assessment materials. Protect the security and confidentiality of the assessment content.</p> <p><b>6. Incomplete submissions:</b> Temporarily suspend the assessment. If candidate submit incomplete responses or fail to meet the minimum requirement for completion. Ensure that assessment results are based on complete and valid responses.</p>
Test Environment	<p>The testing environment includes the following:</p> <p><b>Operating System</b> : Windows</p> <p><b>Browsers</b> : Chrome, Firefox, Safari etc</p> <p><b>Mobile Platforms</b> : Android and iOS</p> <p><b>Database</b> : Firebase</p>
Test Deliverables	<p><b>Test plan:</b> A comprehensive document that outline the testing approach, objectives, scope, schedule, resources and acceptance criteria for the training and placement application.</p> <p><b>Test cases:</b> Detailed test scenario that specify the steps to be executed, expected result and criteria for pass/fail for various aspects of the system such as student profile creation, application processing and job listing.</p> <p><b>Testing Review:</b> A document confirming the review and approval of the test planning, test execution and reporting.</p>
Testing Tasks	<p><b>Task-1 Student profile creation, Update testing</b></p> <p>Verify the student can create profile with accurate information and that validation works as expected. Test the ability to update and edit student profiles, ensuring that changes are solved correctly.</p> <p><b>Task-2 Application processing testing</b></p> <p>Test the application submission and processing. Ensuring the application are correctly associated with job postings.</p> <p><b>Task-3 Posting Expiration and removal testing</b></p> <p>Verify the job posting automatically expires and are removed from the system as scheduled.</p>

	<p><b>Task-4 Student profile management testing</b></p> <p>Test the ability of administrator to manage student profiles, update information and deactivated/activated profile.</p> <p><b>Task-5 job posting management &amp; reporting and analytics testing</b></p> <p>Ensure administrator can manage job posting, edit detailed and remove expired postings and also verify that administrators can access and generate accurate report on placement and activities.</p> <p><b>Task-6 Communication and notification testing</b></p> <p>Ensure that communication and notification are sent and received correctly.</p> <p><b>Task-7 Security and access control testing</b></p> <p>Verify the security features, including user authentication, authorization and protection against security vulnerabilities.</p> <p><b>Task-8 Placement process testing</b></p> <p>Test the placement process, including matching students with job posting, interview scheduling and final placement decisions.</p> <p><b>Task-9 Search and filter functionality testing</b></p> <p>Test the search and filter option for students, allowing employers to find suitable candidates easily.</p> <p><b>Task-10 User authentication and access control testing</b></p> <p>Confirm that administrators can log in securely and that their roles are correctly enforced.</p>
Staff & Training	<p><b>Testing Team:</b> 1. Shraddha Gaidhani</p> <p>2. Kalyani Bangar</p> <p>3. Ashwini Salunke</p> <p>4. Aditya Dhakane</p>
Responsibilities	<p><b>QA Lead:</b> 1. Aditya Dhakane</p> <p>2. Ashwini Salunke</p>
	<p><b>QA Engineers:</b> 1. Shraddha Gaidhani</p> <p>2. Kalyani Bangar</p>
Schedule	Testing is planned to 05/08/2023 on and 25/10/2023 on
Risk and Mitigation	<p><b>1. Data Security Breach</b></p> <ul style="list-style-type: none"> <li>• Description: Unauthorized access, hacking, or data breaches can expose sensitive student and employer information.</li> <li>• Mitigation: Implement strong encryption and access controls, Regularly update security measures, Educate users on security best practices.</li> </ul> <p><b>2. Incomplete or Inaccurate Student Profiles</b></p> <ul style="list-style-type: none"> <li>• Description: Incomplete or inaccurate student profiles can lead to mismatches in job placements.</li> <li>• Mitigation Implement validation checks for mandatory fields in</li> </ul>

	<p>student profiles. Provide user-friendly interfaces to encourage accurate data entry. Offer guidance to students during profile creation.</p> <p><b>3. Technical Compatibility Issues</b></p> <ul style="list-style-type: none"> <li>• Description: Compatibility issues on various devices, browsers, and operating systems can result in a poor user experience.</li> <li>• Mitigation: Perform thorough compatibility testing to ensure the system works seamlessly across different platforms and configurations. Use responsive design techniques for mobile devices.</li> </ul> <p><b>4. User Acceptance</b></p> <ul style="list-style-type: none"> <li>• Description: Users (students, employers, administrators) may resist using the system due to its complexity or lack of user-friendliness.</li> <li>• Mitigation: Conduct user acceptance testing (UAT) and gather feedback from users during system development. Continuously refine the user interface based on user feedback.</li> </ul> <p><b>5. Lack of Timely Communication</b></p> <ul style="list-style-type: none"> <li>• Description: Delays in communication between students, employers, and administrators can hinder the placement process.</li> <li>• Mitigation: Implement automated notifications and reminders for important events (e.g., interview invitations, deadlines). Use a centralized communication system for effective messaging.</li> </ul> <p><b>6. Data Loss</b></p> <ul style="list-style-type: none"> <li>• Description: Accidental data loss can result from system errors or user mistakes.</li> <li>• Mitigation: Implement robust backup and data recovery solutions to ensure that data can be restored in the event of loss or corruption.</li> </ul> <p><b>7. Technical Errors</b></p> <ul style="list-style-type: none"> <li>• Description: Technical errors in the system can negatively impact the user experience.</li> <li>• Mitigation Regularly monitor and review system logs for errors. Implement automated testing procedures to catch technical issues before they impact users.</li> </ul>
Approvals	Test Plan Approval: Mr. S. H. Sangale
	Test Execution Approval: Prof. G. B. Katkade

## 8.0.2 Test Cases

Test case id	Test description	Test input	Expected result	Actual result	status
TC-01	Verify a new student registration	Student's name, email, password, contact details	Student is registered successfully	Student registration successful	Pass
TC-02	Check student login process	Valid student credentials (email, password)	Student is logged in successfully	Student logged in successfully	Pass
TC-03	Check invalid login attempt	Invalid student credentials (email, password)	System displays an error message	Error message displayed as expected	Pass
TC-04	Test the submission of an application	Valid application details	Application is successfully submitted	Application submitted successfully	Pass
TC-05	Check incomplete application submission	Incomplete application details	System prompts the user to complete missing information	User prompted to complete missing information	Pass
TC-06	Verify job listing functionality	Access job listing page	Job listings are displayed correctly	Job listings displayed as expected	Pass
TC-07	Check filtering of job listings Job	Apply filters (e.g., location, industry)	Job listings are filtered as per the criteria	Job listings filtered correctly	Pass
TC-08	Confirm student placement	Confirm placement request	Student placement is confirmed	Placement request confirmed successfully	Pass
TC-09	Check placement confirmation status	View placement status	Confirmation status is displayed	Confirmation status displayed correctly	Pass
TC-10	Attempt login with incorrect credentials	Invalid student credentials (email, wrong password)	System should deny access and display an error message	Error message displayed as expected, login failed	Fail
TC-11	Attempt to submit an incomplete application	Incomplete application details	System should prompt the user to complete missing information	User prompted to complete missing info, application submission failed	Fail

TC-12	Apply an invalid job listing filter	Apply a filter that doesn't match any job listings	System should not filter job listings and display all available listings	Job listings not filtered correctly, filter failed	Fail
TC-13	Attempt to confirm a placement request without prior confirmation	Try to confirm a placement request that hasn't been confirmed	System should reject the request and provide an error message	Error message displayed as expected, confirmation failed	Fail
TC-14	Attempt to register with an email that's already in use	Use an email that is already registered in the system	System should identify the duplicate email and display an error message	Error message displayed as expected, registration failed	Fail
TC-15	Verify system response to an invalid email format during student registration	Student's name: John Doe. Email: johndoe (at) example.com (Invalid format) Password: secure123. Contact details: (provide valid contact details)	The system should identify the email format as invalid. An error message should be displayed indicating that the email format is incorrect. Student registration should not proceed.	Error message displayed as expected, student registration failed	Fail

### 8.0.3 Defect Report

Defect Report for training and placement application	
Parameter	Details
ID	DR-001
Project Name	Training and Placement application
Product Name	Training and Placement application
Release Version	1.1.0
Module	Student module
Detected Build Version	2.1.0
Summary	The "Submit Application" button within the student module of the Training and Placement System is malfunctioning. It fails to save application details and does not provide a confirmation message upon submission. This high-severity issue affects the ability of students to successfully submit their applications for placement. The defect is reported under ICRPT-TP-001 and assigned to Ashwini Salunke. The current status is "Open," with a priority of "High." The defect was reported on 2023-10-23, and the target fix date is 2023-10-30. The actual fix date is pending.
Description	In the Training and Placement System student module, the "Submit



	Application" button is not functioning as expected. Upon clicking the button, it fails to save the application details and does not display the anticipated confirmation message. This high-severity defect, identified as ICRPT-TP-001 and reported by Shraddha Gaidhani, is currently open and assigned to Kalyani Bangar. It was reported on 2023-10-23, with a high priority for resolution by the target fix date of 2023-10-30. The actual fix date is pending. This defect affects the system's critical functionality, hindering students from successfully submitting their placement applications.
Steps to Replicate	1. Log in to the training and placement system as a student.
	2. Navigate to the "Application" section.
	3. Fill out the required application details.
	4. Click on the "Submit Application" button.
Actual Result	After clicking "Submit Application" there is no confirmation message, and the application details are not saved. It appears as if nothing has happened.
Expected Result	After clicking "Submit Application" the system should save the application details and display a confirmation message, indicating that the application has been successfully submitted.
Attachments	Screenshots
Remark	None
Defect Severity	High
Defect Priority	Medium
Reported By	Ashwini A. Salunke
Assigned to	Aditya A. Dhakane
Status	Open
Fixed Build Version	N/A

## 9.0 Skill Developed / Learning outcome of this Micro-Project:

### Technical Skills:

1. Understand the concept of malicious websites.
2. Prepare Test- Cases.
3. Knowledge of software tools

### Soft Skills:

1. Leadership and decision making.
2. Working in team.
3. Time management.
4. Presentation and writing skills.

## 10.0 Applications of Micro Project:

1. Education institutions: These application help educational institutions manage job placement services for their students, enhancing the employability of students.
2. Government initiatives: Government agencies can utilize training and placement application to provide job placement services and match job seekers with employers.
3. Startups and small Businesses: Smaller companies may benefit from these platform as cost-effective solutions for finding and recruiting talent.

4. Global employment: Some platforms have a global reach, connecting job seekers with opportunities worldwide facilitating international career development.
5. Diversity and inclusion: Application can be tailored to promote diversity and inclusion by offering equal opportunities to candidate from various background.

**11.0 Name of Group Members:**

Enrollment No.	Roll No.	Seat No.	Name of Students	Student Signature
2100780078	08		Bangar Kalyani Hemant	
2100780086	15		Dhakane Aditya Arun	
2100780090	19		Gaidhani Shraddha Punjaram	
2100780128	45		Salunke Ashwini Ashok	

Approved by: Signature of Guide: \_\_\_\_\_  
Name of Guide: Mr. S. H. Sangale

Date :     /     /2023