Software Testing Plan

1. Introduction

This document presents the Software Testing Plan for the Placement Management System (PMS).The objective of this plan is to define the testing activities required to verify and validate that the system meets all specified functional and non-functional requirements described in the Software Requirements Specification (SRS).

Testing ensures that the Placement Management System operates correctly, securely, and efficiently for both students and placement administrators. It also helps in identifying defects at early stages, improving software quality, and ensuring user satisfaction before deployment.

2. Test Strategy

Unit Testing:
Individual components such as user registration, login authentication, eligibility checking, and job application modules will be tested independently to ensure correct logic and functionality.

Integration Testing:
Integration testing will verify proper interaction between different modules, including frontend interfaces, backend services, and the database. This ensures smooth data flow and correct API communication.
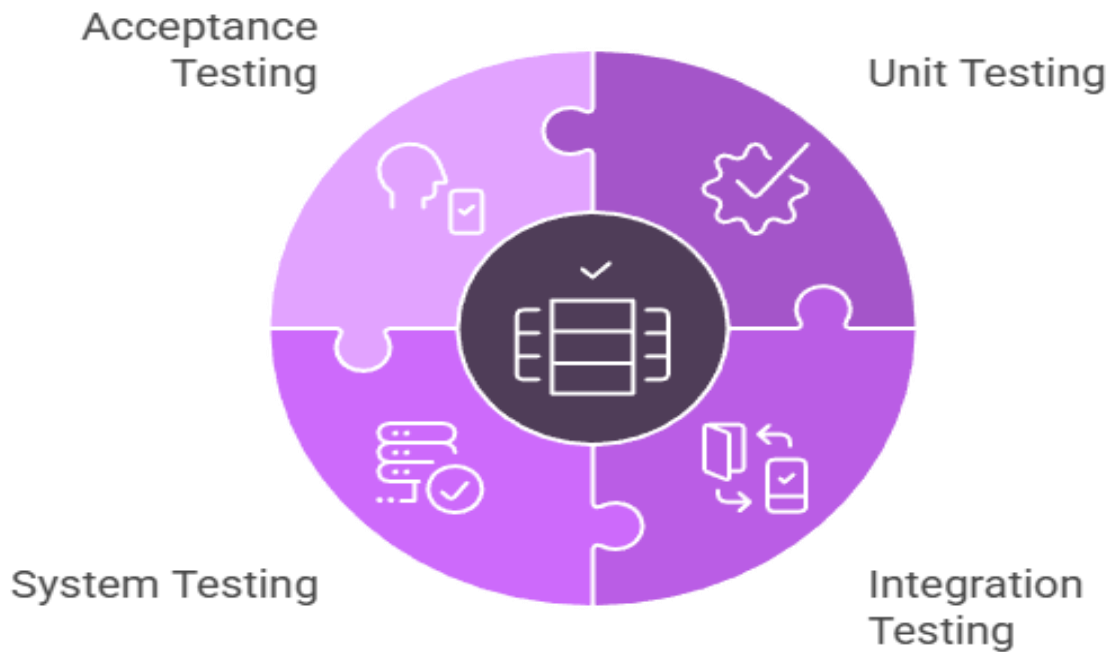
System Testing:
System testing will be conducted on the complete PMS to validate all system features such as job posting, application tracking, interview scheduling, and notification services against the specified requirements.

Acceptance Testing:
Acceptance testing will be performed by students and placement administrators to ensure the system meets real-world usage expectations and institutional requirements before final approval.

Comprehensive Testing Strategy

Acceptance Testing

Unit Testing

System Testing

Integration Testing

3. Test Environment

Hardware Requirements: Desktop and laptop computers, as well as mobile devices with internet connectivity.

Software Requirements:

- Operating System: Windows, Linux, or macOS
- Web Browser: Google Chrome, Mozilla Firefox, or Microsoft Edge
- Backend: Node.js with Express framework
- Database: MongoDB

Test Data: Sample student profiles, company details, job and internship postings, resumes, interview schedules, and offer records will be used for testing purposes.

4. Test Cases

Test cases will be prepared for all major functionalities of the Placement Management System. Each test case will include:

- Test case identification number
- Description of the test scenario
- Input data
- Expected output
- Actual output
- Pass/Fail status

These test cases ensure proper validation of user authentication, profile management, job applications, eligibility checks, interview scheduling, and placement status updates.

5. Defect Management

A structured defect management process will be followed to handle issues identified during testing.

- All defects will be logged with details such as defect ID, description, severity, and status.
- Defects will be classified as critical, major, or minor based on their impact.
- The development team will fix reported defects, after which retesting will be performed.
- A defect will be closed only after successful verification and confirmation.