MEKELLE UNVIERSITY



**EITM**

# **SCHOOL OF COMPUTING**

## **DEPARTMENT OF SOFTWARE ENGINEERING**

**TEST PLAN OF**

**STUDENT REGISTRATION SYSTEM**

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**TEST PLANNING AND CONTROL**

**1.1 TEST PLANNING**

**1.1.1 OBJECTIVE:**

The objective of the test planning phase is to define the testing strategies, processes, and resources required to validate the functionality and performance of the **Student Registration System**. This phase ensures that all functional and non-functional requirements specified in the SRS document are adequately tested and meet quality standards before deployment.

**1.1.2 COMPONENTS OF A TEST PLAN:**

1. **Scope of Testing:**
   * Validate all functional requirements, including course registration, payment integration, and session management.
   * Verify non-functional requirements like scalability, reliability, and security.
2. **Test Objectives:**
   * Ensure that students can register for courses successfully.
   * Confirm secure and accurate payment processing.
   * Verify session management reliability during high traffic.
3. **Test Environment:**
   * Use a staging environment replicating the production setup.
   * Technologies: Laravel, MySQL, and API Gateway with necessary middleware and microservices.
4. **Test Deliverables:**
   * Test cases and scripts for functional, performance, and security testing.
   * Test execution reports and logs.
5. **Roles and Responsibilities:**
   * **Test Manager:** Oversee planning, execution, and reporting.
   * **Testers:** Create and execute test cases.
   * **Developers:** Support defect resolution.

**1.1.3 TOOLS FOR TEST PLANNING:**

* **Test Management:** JIRA or TestRail for managing test cases and tracking progress.
* **Automation Tools:** Selenium for functional testing and JMeter for load testing.
* **Version Control:** GitHub for managing test scripts and code.

**1.2 TEST CONTROL**

**1.2.1 OBJECTIVES:**

The objective of test control is to monitor and manage testing activities to ensure they align with the test plan. Adjustments are made to address deviations and ensure the system meets the defined requirements and quality benchmarks.

**1.2.2 ACTIVITIES:**

1. **Progress Monitoring:**
   * Track test case execution status.
   * Monitor defect resolution rates and timelines.
2. **Risk Management:**
   * Identify potential risks like delayed defect fixes or system instability.
   * Develop contingency plans for critical issues.
3. **Change Management:**
   * Manage updates to test cases due to changes in requirements.
4. **Communication:**
   * Regular updates to stakeholders through status reports.

**1.2.3 TOOLS FOR TEST CONTROL:**

* **Progress Tracking:** JIRA dashboards or TestRail analytics.
* **Communication:** Slack or Microsoft Teams for team collaboration.
* **Defect Tracking:** JIRA for logging and managing bugs.

**1.2.4 DELIVERABLES:**

1. **Testing Metrics:**
   * Pass/Fail rates for test cases.
   * Defect density and resolution times.
   * Performance benchmarks.
2. **Test Reports:**
   * Detailed reports summarizing executed tests, results, and identified issues.
3. **Updated Test Cases:**
   * Revised test scripts based on defect fixes or requirement changes.
4. **Final Test Summary:**
   * Comprehensive documentation of testing outcomes to inform deployment readiness.