TEST PLAN FOR

CS Department ERP

ChangeLog

Version	Change Date	By	Description
version number	Date of Change	Name of person who made changes	Description of the changes made
001	15.12.2024	Pragya Pandey	Initial Draft

1. Introduction

The existing college ERP is supplemented with a new system which has features meant only for the Computer Science department to address the inefficiencies in the college ERP. It involves features such as: online applications of "No Objection Certificates" (NOCs), competitive programming profile integration for the students, as well as access to Faculty Development Program (FDP) information, all managed completely under the building blocks of the MERN stack to streamline its administrative and academic processes. This test report provides a brief overview of the testing activities carried out to ascertain the functionality, reliability, and user experience of the system.

1.1 Scope

1.1.1 In Scope

Features of the Project:

1. NOC Applications: Functional Requirement
    - Test the functionality of submitting, tracking, and managing NOC applications.
    - Validate data input fields and the approval process.
2. Competitive Programming Profiles: Functional Requirement
    - Verify accurate integration and display of competitive programming data for students.
3. FDP Information Access: Non-functional Requirement
    - Ensure timely and accurate display of FDP-related details.
4. User-Friendly Interface: Non-functional Requirement
    - Conduct usability testing to evaluate the intuitiveness and accessibility of the user interface.
5. Role-Based Access Control: Functional Requirement
    - Test access control for different user roles such as students, faculty, and administrators.
6. Cross-Platform Compatibility: Functional Requirement
    - Verify system performance on various devices and browsers.

1.1.2 Out of Scope

Out of Scope defines the features, functional or non-functional requirements of the software that will NOT be tested:

- Integration with external payment gateways.
- Real-time chat support for users.

1.2 Quality Objective

The objectives of the testing project include:

- Ensuring the application under test (AUT) conforms to functional and non-functional requirements.
- Meeting quality specifications defined by stakeholders.
- Identifying and resolving potential issues before deployment.

1.3 Roles And Responsibilities

- QA Analyst: Nilesh Verma
- Test Manager: Ms. Shreela Pareek
- Configuration Manager: Mrs. Neha Shukla
- Developers: Pragya Pandey, Pratul Pandey, Nishant
- Installation Team: Ms. Shreela Pareek, Pragya Pandey, Pratul Pandey, Nishant, Nilesh Verma

2. Test Methodology

2.1 Overview

We are using an iterative testing approach to make sure our project works well. This means we test it in small steps (a particular module), starting with checking if each part works on its own. Then, we see how different parts work together.
We keep testing as we make changes and add new things. This way, we make sure our project is always working well, even after modification.

2.2 Test Levels

We aim to test our project at the following levels:

1) Unit Testing: This is the lowest level of testing and focuses on individual components or functions within the software. Developers often perform unit tests to verify that specific parts of the code work correctly.

2) Integration Testing: This level of testing checks how different components or modules of the software work together. It ensures that integrated parts of the software function as intended.

3) System Testing: At this level, the entire system is tested. It verifies that the software meets its specified requirements and functions properly in its intended environment.

2.3 Test Completeness

Testing is deemed complete when:

- 100% test coverage
- All Manual & Automated Test cases executed
- All open bugs are fixed or will be fixed in the next release

3. Test Deliverables

Test Cases:

Test Case ID	Test Scenario	Test Steps	Expected Result	Status
TC001	Submit NOC Application	1. Log in as a student. 2. Fill and submit NOC form.	NOC application is submitted.	Passed
TC002	View Competitive Programming Profile	1. Log in as a student. 2. Navigate to profile section.	Profile data is displayed.	Passed
TC003	Role-Based Access Control	1. Log in with different roles. 2. Verify access permissions.	Access permissions are enforced.	Passed
TC004	FDP Information Display	1. Log in as a faculty member. 2. Access FDP section.	FDP information is displayed.	Passed
TC005	Cross-Platform Compatibility	1. Multiple users issue commands:	1. Open the system on multiple browsers/devices.	Passed

Boundary Value Analysis:

Boundary value

Test Case	Test Description	Input/Command	Expected Behavior
Test 1	Minimum Input Length	Single-character input in forms	System handles input gracefully.
Test 2	Maximum Input Length	Maximum allowed characters in forms	System processes input successfully.
Test 3	Empty Input	Submit without input	System displays appropriate error.
Test 4	Minimum Password Length	Password with minimum characters allowed	System accepts the input.
Test 5	Invalid Data Input	Invalid email format	System validates and shows error.
Test 6	Maximum Password Length	Password with maximum characters allowed	System accepts the input.
Test 7	Login Attempt Limit	Maximum consecutive failed login attempts	System locks the account.
Test 8	Date Range Validation	Earliest and latest dates allowed	System accepts valid date inputs only.
Test 9	Maximum File Upload Size	File with maximum size allowed (e.g., 5MB)	System uploads file successfully.
Test 10	Maximum System Memory Usage	System running with limited available memory	Voice assistance operates without memory-related issues

RTM:

Requirement Traceability Matrix

Test Case ID	Test Description	Test Steps	Expected Results	Actual Results
TC-001	Submit NOC Application	1. Log in as a student. 2. Submit NOC form.	NOC submitted successfully.	Matches expected results.
TC-002	Competitive Profile Access	1. Navigate to profile.	Profile displays correctly.	Matches expected results.
TC-003	Role-Based Access Control	1. Log in with different roles.	Permissions enforced.	Matches expected results.
TC-004	FDP Information Access	1. Log in as a faculty member.	FDP information is visible.	Matches expected results.

4. Resource & Environment Needs

4.1 Testing Tools

Manual testing methods are primarily used for this project.

4.2 Test Environment

Hardware and software requirements for testing include:

- Windows 10 or above.
- Minimum 4GB RAM.
- Minimum Intel Core i3 or equivalent.
- Latest versions of Chrome, Mozilla, or Edge.
- Node.js environment for backend testing.
- MongoDB installed for database operations.

5. Terms/Acronyms

TERM/ACRONYM	DEFINITION
VS Code	Visual Studio Code
MERN	MongoDB, Express, React, Node.js
NOC	No Objection Certificate
FDP	Faculty Development Program