1. **TEST PLAN**

**PROJECT NAME:** STUDENT MANAGEMENT APPLICATION.

**Test Engineer :** Thati Dinesh

**Date :** 4-01-2023.

**Prepared by :** Thati Dinesh

**Reviewed by :** Ganesh Ronanki.

1. **Test Objective**

* The objective of the test is to verify that the functionality of **“STUDENT MANAGEMENT APPLICATION** **for Adding Students, Displaying Students, Updating Student, Deleting Student”** and works according to the specification.
* Final Product of the test includes:
* Production ready Software.
* A set of stable Test Scripts that can be re-used for functional and User Acceptance Testing(UAT) Test Execution.

1. **Scope of Testing**

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| --- | --- | --- |
| Module Name | Applicable Roles | Description |
| Adding Students | Admin | Admin adds the students in database. |
| Displaying Students | Admin, User | Admin will be able to see the students in database |
| Updating Students | Admin | Admin can update the student details. |
| Deletion of Students | Admin | Admin can delete a student from database. |

1. Within Scope:

* Functional Testing.

1. Out of Scope:

* Non-Functional Testing like Stress and Performance.
* Automation Testing.

1. **Test Strategy**
2. Levels of Testing:

System Testing:

* It is end to end testing where testing environment is similar to production environment. We test the end feature and also we do not check the data flow of the application. Here we test whether the function of Adding Students, Displaying Students, Updating Student, Deleting Student are working fine as per expected conditions.

User Acceptance Testing:

* + Here, they use the software for the business for a particular time and checks whether the software can handle the real time scenarios. Completely done by the end user. Whether every user is able to access the following modules like Adding Students, Displaying Students, Updating Student, Deleting Student without any further allegations.

1. Types of Testing

Black Box Testing:

* + Technique of software which examines the functionality of software without out looking into internal structure or coding. Checks whether function of Adding Students, Displaying Students, Updating Student, Deleting Student are working as expected in the requirement.

Functional Testing:

* + Here, in this testing we the verify the functionality (Testing the application by the following modules like Adding Students, Displaying Students, Updating Student, Deleting Student to verify that they are giving the expected result as per requirement.)

Exploratory Testing:

* + We will explore the application in all possible ways and understand the flow of the application, preparing a test document and then testing the application. We test that application is functioning as per the Adding Students, Displaying Students, Updating Student, Deleting Student and their exact interfaces and functions with all possible conditions.

1. Test Design Techniques:

Boundary Value Analysis(BVA)

* + We are going to check the boundaries values of the minimum and maximum values.
  + (Minimum-1) (Minimum+1) and (Maximum value-1) (Maximum+1)

Equivalence Class Partitioning(ECP)

* Partition the data into various classes and we can select according to class then test. Whether are we able to search the names without errors.
* It reduces the number of test cases and saves time for testing

Error Guessing.

* Technique used to find bugs in a software application based on testers prior experience.
* In guessing errors when we don’t follow specific rules.
* Depends on Tester analytical skills and experience

1. Configuration Management Tool:

* Nil

1. Terminology:

* Test Plan
* Test Case
* Test Scenario
* Defect Log
* RTM-Requirements Traceability Matrix

1. Area planned for Automation

* Since automation testing is beyond scope, we have not planned any area for automation testing.

1. List of Automation Tools

* No automation tools are needed, because automation testing is beyond scope.

1. **Entry and Exit Criteria**
2. Entry Criteria

* The entry criteria are need to be done after the code implement is performed.
* Complete or Partially testable code is available.
* Requirements are defined and approved.
* Availability of sufficient Test data.
* Test cases are developed and reviewed.
* Test environment is ready.

1. Exit Criteria

* 100% test scripts executed.
* Pass rate is equal to 95%.
* No critical defects left.
* 95% of medium severity defects were closed.

1. **Test Deliverables**

* Before Testing
* During Testing
* After Testing

|  |  |  |
| --- | --- | --- |
| Before Testing | During Testing | After Testing |
| Test Plan Document | Test Data. | Test Results. |
| Test Case Document | RTM | Defect Reports. |
| Requirement Document |  | Test Reports. |
|  |  |  |

1. **Roles and Responsibilities**

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| --- | --- |
| Roles | Responsibilities |
| Team Lead | 1. Manage the whole Project. 2. Define Project direction |
| Test Engineer | 1. Write the test cases. 2. Execute the test cases. 3. Report the defects. 4. Identifying the test design techniques. 5. Identifying the severity of the defect. |
| Senior QA | 1. Taking in-charge of Quality assurance. 2. Confirms whether the testing process is meeting specified requirements. |

1. **Risks and mitigation**

 a) Risk and contingency

* + <Customer>will endeavor to meet prerequisites indicated by.
  + <Customer>will ensure a full set of suitable and protected test data is available.
  + <Tester>will indicate what is required and will verify suitability of test data.

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b) Risk and mitigation

* + Meet outstanding prerequisites.
  + Redefine test data.
  + Review test plan and modify components (that is, scripts)
  + Restore data and restart.

1. **Schedule**

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| --- | --- | --- | --- | --- |
| Task | Members | Estimate effort | Start Date | End Date |
| Create the test specification | Test Designer | 30 man-hour | 05-01-2023 | 10-01-2023 |
| Perform test execution | Tester Engineer | 18 man-hour | 11-01-2023 | 13-02-2023 |
| Test report | Tester Engineer | 12 man-hour | 14-01-2023 | 15-02-2023 |
| Test delivery | Team Lead | 12 man-hour | 16-01-2023 | 17-02-2023 |
| Total |  | 72 man-hour | 05-01-2022 | 17-01-2023 |

1. **Hiring and Training**

* Intern level --Minimum 6 months of experience in manual testing.
* Data Base Knowledge.
* 4 weeks of training should be given under the domain and application.
* Manual Testing
* Application

1. **Test Environment**

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| --- | --- | --- |
| No. | Resources | Descriptions |
| 1. | Server | Need a Database server. |
| 2. | Network | Setup a LAN Gigabit and 1 internet line with the speed at least 5 Mb/s |
| 3. | Computer | At least 2 computer run Windows 7, Ram 2GB, CPU 3.4GHZ,Eclipse, |
| 4. | MS Excel | Test case preparation, Test case execution, Defect management, Test reporting, Checklist of testing. |
| 5. | MS WORD | Requirement Document, Test Plan. |

1. **Assumptions:**

* Exploratory Testing would be carried out once the build is ready for testing
* Performance testing is not considered for this estimation.
* Test environment and preparation activities will be owned by Development Team.
* Development team will provide Defect fix plans based on the Defect meetings during each cycle to plan.

1. **Approval Information:**

* Team Lead: reviews the content of the Test Plan, Test Strategy and Test estimates signs off on it.
* Test Lead: Reviews the test cases, test conditions and Test data, test report
* The Names and Titles of all persons who must approve this plan.
* **Signature:**
* Name: Ganesh Ronanki
* Role: Team Lead.
* Date: 04-01-2023.

**13) Test Metrics**

* Passes Test Cases Percentage: **(No. of Passes Tc/No. of Executed Tc) \*100**
* Failed Test Cases Percentage:**(No. of Failed Tc/ No. of Executed Tc) \*100**
* Accepted Defect Percentage:**(No. of Accepted defects/Defects Reported) \*100**
* Defects Deferred Percentage: **(Defects Deferred/Defects Reported) \*100**