American International University- Bangladesh (AIUB)

Department of Computer Science

Software Quality and Testing[C]

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Developing a Test Plan for Student Registration System for a University

Group name: 'Defect69'

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STUDENT REGISTRATION SYSTEM TEST PLAN

1. Test Plan Identifier:

Master test plan for American International University - Bangladesh student registration system. (AIUB_SRS-MTP01.01)

2. Reference:

The following references have been used in the preparation of the Test plan document for the student registration system:

- IEEE Format 829 for Standard software test plan documentation.
- Sample test plan document.

3. Introduction:

The main purpose of the test plan for the student registration system of American International University-Bangladesh is to discuss the testing details of the robust web-based system for online course registration. The software project test plan also describes the objective, scope and approach of the software testing effort for the student registration system project.

This plan will address only the items and elements that are related to the online registration process. The primary focus of this plan is to ensure that the new system application provides the same level of information and details as requested by the CIO. This test plan covers the test scenario of features (Course management, Section management, Student management, Faculty management, Online course registration system), testing techniques which is used to test the Student Registration System, pass/fail criteria for each item that will be tested.
The project will have three levels of testing, Unit, System/Integration and Acceptance. The details for each level are addressed in the approach section and will be further defined in the level specific plans.

4. Test Item:
- Requirements - Students, Faculty, Administrator.
- Database, Database Connectivity -White Box Testing.
- User Input Validation -White Box Testing.
- Login, Login Validation -Black Box Testing.
- Student Course Registration- Black Box Testing.
- Course Add/Drop - Black Box Testing.
- Encryption - Black Box Testing.

5. Software Risk Issues:
- Handling larger number of student at the same time.
- Reliability.
- Failure handling.
- Backup and recovery process.

6. Features to be tested:

The following is a list of the areas to be focused on during testing of the application.

Student:
- Registration
- Login
- Logout
- Edit profile
- Display courses, results and faculty
- Academic year selection
- Add course
- Choose section
- Remove course
- Added course view
- Change password

Advisor:
- Add course
- Remove course
- Change password

Administrator:
- Login
- Add new course
- Delete existing course
- Edit course description
- Open new section
- Close a section
- Make or edit course list
- Adjust number of credits
- Change password

System:
- Display the scheduled
- Display section details

- Identify the number of students
- Interface to the Registration system and databases

7. Features not to be tested:

- Manage faculty information
- Manage student admission
- Register two course at same time
- Section reached maximum number
- Display grade
- Adding course is not visible until prerequisites aren't completed
- Adding same course in two different section.

8. Approach:

8.1 Testing Levels:

The testing for the Registration System project will consist of Unit, System/Integration (combined) and Acceptance test levels. It is hoped that there will be at least one full time independent test person for system/integration testing. However, with the budget constraints and time line established. Most testing will be done by the test manager with the development team's participation.

Unit Testing will be done by the developer and will be approved by the development team leader. Proof of unit testing (test case list, sample output, data printouts, and defect information) must be provided by the programmer to the team leader before unit testing will be accepted and passed on to the test person. All unit test information will also be provided to the test person.

System/Integration Testing will be performed by the test manager and development team leader with assistance from the individual developers as required. No specific test tools are available for this project. Programs will enter into System/Integration test after all critical defects have been corrected. A program may have up to two Major defects as long as they do not impede testing of the program (I.E. there is a work around for the error).

Acceptance Testing will be performed by the actual end users with the assistance of the test manager and development team leader. Programs will enter into Acceptance test after all critical and major defects have been corrected. Prior to final completion of acceptance testing all open critical and major defects MUST be corrected and verified by the CIO. A limited number of distributors will participate in the initial acceptance test process. Once acceptance test is complete, user will be added as their ability to generate the registration data which is verified and checked against their required data. This will require careful coordination of the control tables for the production system to avoid posting test data into the system.

8.2 Testing Tools:

The following tools will be used for testing:

	Tool	Version
Test Management	Rational RequisitePro Rational Unified Process	TBD
Test Design	Rational Rose	TBD
Defect Tracking	Rational ClearQuest	TBD
Functional Testing	Rational Robot	TBD
Performance Testing	Rational Visual Quantify	TBD
Test Coverage Monitor or Profiler	Rational Visual PureCoverage	TBD
Other Test Tools	Rational Purify Rational TestFactory	TBD
Project Management	Microsoft Project Microsoft Word Microsoft Excel	TBD
DBMS tools	TBD	TBD

8.3 Project task:

Below are the test related tasks for testing the Registration System:

8.3.1   Plan Test
- Identify Requirements for Test
- Assess Risk
- Develop Test Strategy
- Identify Test Resources
- Generate Test Plan

8.3.2   Design Test
- Develop Test Suite
- Identify and Describe Test Cases
- Identify and Structure Test Scripts

8.3.3 Implement Test
- Setup Test Environment
- Record or Program Test Scripts

8.3.4 Execute Test
- Execute Test Script
- Evaluate Execution of Test
- Log Defects

8.3.5 Evaluate Test
- Analyze Defects
- Create Test Evaluation Report

8.4 Meetings:

Our team will meet once every two weeks to evaluate progress to date and to identify defects and problems as early as possible. Our test team leader will meet with development and the project manager once every two weeks as well. These two meetings will be scheduled on different weeks. Additional meetings can be called as required for emergency situations.

8.5 Measures and Metrics:

During the unit testing process following information would be gathered from the development team.
- Defects by module and severity.
- Defect Origin (Requirement, Design, Code)
- Time spent on defect resolution by defect, for Critical & Major only. All Minor defects can be totaled together.

The following information will be collected from our test team during all testing phases. This information will be provided on a biweekly basis to the test manager and to the project team.

- Defects by module and severity.
- Defect Origin (Requirement, Design, Code)
- Time spent on defect investigation by defect, for Critical & Major only. All Minor defects can be totaled together.
- Number of times a program submitted to test team as ready for test.
- Defects located at higher levels that should have been caught at lower levels of testing.

9. ITEM PASS/FAIL CRITERIA

The test process will be completed once the initial set of user have successfully registration data for a period of one semester and the new data balances with the old data received in parallel. When the administration is satisfied that the data is registered correctly. The initial set of user will be set to active and all parallel stopped for those accounts. At this point the next set of users will begin the parallel process, if not already doing so. Only the initial set of users must pass the data comparison test to complete the testing, at that point the application is considered live. All

additional activations will be on an as ready basis. When a user is ready, and their data is verified, they will then also be activated.

10. Test Deliverable:

There are three different delivery phases of software development lifecycle.

- Before Testing.
- During Testing.
- After Testing.

10.1 Before Testing -
- Maintaining Test Plan Document.
- Maintaining Test Cases Documents.

10.2 During Testing-
- Test Suite (Test suite will define all the test scripts which are associated with each test cases)
- Simulations.
- Test Data Analysis.

10.3 After Testing-
- Test Logs
- Defect Report
- Test Procedure guideline
- Release Note

10.3.1 Test Logs:
It is planned to use RequisitePro to identify the test cases and to track the status of test cases. The test result will be summarized as untested, passed, conditional pass, or failed. It is the responsibilities of tester to update the status of RequisitePro. This tools will support following attributes for each test cases.
- Test Status
- Build Number
- Test Prepared By
- Testing date
- Testing Short Notes

10.3.2 Defect Report:
Rational ClearQuest will be used for logging and tracking individual defects.

11 Remaining Test Tasks:

There may not be any test task remaining. Though some confirmation should be done after words:

- Bug fix analysis
- Connecting software testing to real time
- Learning priorities
- Define turnover procedures for each level

12 Environmental needs:

Student registration system contains huge amount of data and that will be an online software based product which should be a well-defined storage for the software. To store huge amount of data and at a time to provide server availability for the registration of the students there need a 24hrs online server. Students Registration system needs aces to data from AIUB official website and Access to the database also required.

13 Staffing and training needs:

It is preferred that we will assign at least one full time tester for the system/integration and acceptance testing phases of the project. If a separate test person is not available the project manager/test manager will assume this role.

14 Responsibilities

	TM	PM	Dev. Team	Test Team	Client
Acceptance test Documentation & Execution	X	X		X	X
System/Integration test Documentation & Exec.	X		X	X	
System Design Reviews	X	X	X	X	X
Detail Design Reviews	X	X	X	X	
Test procedures and rules	X	X	X	X	
Screen & Report prototype reviews			X	X	X
Change Control and regression testing	X	X	X	X	X

The project manager/test manager is responsible for all test plans and documentation.

15 Risk Planning:

- Schedule Risk
- Financial Risk
- Operational Risk
- Technical Risk
- External Risk
- Misunderstanding of the original requirements.