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**IS213: Software Project Management**

**G4T6**

**Project Test Plan**

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# **Introduction**

## **Purpose**

This plan describes the testing approach and overall framework of the final bidding product as issued by SMU IS213 (Software Project Management) module’s project guidelines. This document includes:

* Test strategies
* Test deliverables
* Execution strategies and
* Role expectations

## **Project Overview**

Please refer to the Wikipedia page under <https://wiki.smu.edu.sg/is212/Project> for further details.

As per project requirements, we are to redesign SMU’s BOSS System with modified features as per the functional requirements listed under <https://wiki.smu.edu.sg/is212/Project>. Like SMU’s BOSS System, the system is to function as a web application to enable students to bid for their classes using an e-dollar (e$) currency provided by the school every time Round 1 is opened.

For the purpose of clarity, it will be referred to as “Product G4T6” for the remainder of this report.

## **1.3 Intended audience**

The intended audience for this document is only to the following people:

* Project Team Members (stated in the introduction) who are to perform tasks specified in this document and to provide input, constructive opinions and recommendations on this document
* The Project Manager for testing activities, reviews, performance tracking, approvals and for accountability of results.
* External stakeholders of this project such as school Professors, Teaching Assistants and Instructors, who assist in the assessment evaluation and the quality of the project/product.

# 2. **Test Strategy**

## **2.1 Test Strategies**

The objective of the test is to verify that the functionality of Product G4T6 works according to the functional requirements and specifications.

This test will execute and verify the automated test cases and manual test cases, identify, fix and retest all severity defects should one be found due to the execution of the test.

The final product of the test includes the following:

* A finalized Product G4T6 ready for deployment
* A set of stable manual test cases for functional test execution should any intended audience member wish to conduct a test for their own personal verification
* A set of stable automated test cases for functional test execution should any intended audience member wish to conduct a test for their own personal verification

## **2.2 Test Principles**

* Testing will be focused on meeting the functional requirements as stated in on the Wikipedia page listed in 1.2
* There will be common, consistent procedures for all supporting testing activities
* Testing processes will be well defined, yet flexible, with the ability to change as needed
* Testing activities will build upon previous stages to avoid redundancy and duplication, as well as to reduce effort
* Testing environment and data will emulate a production environment as much as possible
* Testing will be a repeatable, quantifiable, and measurable activity
* Testing will be divided into distinct phases, each with clearly defined objectives and goals
* There will be an entrance and exit criteria for each testcase

## **2.3 Categorical Testing**

There are two types of tests. They have been segregated accordingly:

### **2.3.1 Manual Test**

**Purpose:** The purpose of this test is to ensure that the UI and website is comprehensive enough to be used by a human user. This is also to ensure that the user is able to receive all necessary information and that the functionalities of Product G4T6 work as intended as perceived from a front-end user.

## **2.3.2 Automated Test**

**Purpose:** Automated tests are performed using scripts to ensure that application to application communication through an API is fully functional as stated by the functional requirements under the Wikipedia page under 1.2.

# **3. Test Deliverables**

The following table illustrates all deliverables required before (S.No 1,2,3) and deliverables on a regular basis .

|  |  |  |
| --- | --- | --- |
| S.No. | Name | Author |
| 1 | Test Plan | Project Manager |
| 2 | Manual Test Cases | Pair Programmers |
| 3 | Automatic Test Cases | Pair Programmers |
| 4 | Daily/Weekly Status Report | Pair Programmers |

# **4. Execution Strategy**

## **4.1 Entry and Exit Criteria**

* The entry criteria refer to the desirable conditions in order to start test execution. The entry criteria in this situation refers to the:
  + Migration of code to the AWS Cloud Deployment Server
  + Bug fixes made at the end of every cycle prior to testing
* The exit criteria are the desirable conditions that need to be met in order to pass the test.
* Entry and exit criteria are flexible
* If the exit criteria are not met, the team will assess the risk, identify mitigation actions, provide recommendations and propose changes to the Project Manager in order to reschedule if required

|  |  |  |
| --- | --- | --- |
| Exit Criteria | Completed | Remarks |
| 100% of manual test cases executable |  |  |
| 80% of manual test cases pass |  |  |
| 100% of automated test scripts executed |  |  |
| 80% pass rates of automated test scripts |  |  |
| All expected and actual results are captured and documented with the test cases |  |  |
| No more than 3 “critical impact” severity bugs/defects for each test case category |  |  |

## **4.2 Test Cycles**

* There will be two cycles for functional testing. Each cycle will involve the testing of both manual test cases and automated test scripts
* The objective of the first cycle is to identify any blocking, critical defects and most of the high defects
* The objective of the second cycle is to identify remaining high and medium defects, remove the work arounds from the first cycle and obtain intended results

## **4.3 Validation and Defect Management**

It is the responsibility of the tester to:

* Identify the defects/bugs
* Link them to the corresponding script
* Assign an initial severity and status
* Retest and close the defect.

It is the responsibility of the Product Manager to:

* Review the severity of the defects/bugs
* Communicate with pair programmers (testers) whether the test can continue or should be halt considering the severity of these defects/bugs

|  |  |
| --- | --- |
| Severity | Description |
| Low Impact (1 points) | Unimportant. Typo error or small user interface alignment issues. |
| High Impact (5 points) | The system runs. However, some non-critical functionalities are not working. |
| Critical Impact (10 points) | The system is down or is un-usable after a short period of time. We must fix the bugs to continue. |

|  |  |
| --- | --- |
| Points in Iteration | Action |
| Points < 10 | Use the planned debugging time in the iteration. |
| Points >= 10 | Stop current development and resolve the bug immediately. Project Manager reschedules the project. |

# **5. Role Expectations**

## **5.2.1 Project Manager**

The Project Manager:

* Acknowledge the completion of a round of testing
* Facilitate defect communications with the rest of the team through the Bug Metrics document
* Review testing deliverables (test plan, cases and scripts) to provide feedback
* To aim to fix any bugs found in accordance with the allocated schedule time and to reschedule if necessary

## **5.2.2 Pair Programmers**

* Ensure entrance criteria are used as input before the start the execution
* Develop test plan and guidelines to create the test case, expected results and execution scripts
* Provide guidelines on how to manage defects
* Updates the Bug Metrics document