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SYSTEM TEST PLAN

UniPath

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# INTRODUCTION

The primary purpose of the System Test Plan document is to establish a common understanding among the "UniPath" project stakeholders about the scope, objectives, and approach to performing the system testing. In addition, the document covers such topics as environmental needs, testing entry/exit criteria, test schedule, roles and responsibilities, and risks and contingencies.

# 1. TESTING SCOPE

The testing scope includes two perspectives - the functional scope and technical scope. This document is mainly for testing this semester.

The functional scope includes the following modules of the “UniPath” system:

* Account Management
* Buy/Sell Products

The technical scope includes the following architectural components:

* Web server
* Application server
* Database server
* Middleware messaging

# 2. TESTING OBJECTIVES

The primary focus of this System Test Plan is functional testing with the objective to evaluate the system implementation stability. The non-functional testing requires some special tooling to monitor performance characteristics, which is not available on this project.

The basis for developing functional tests and evaluating the system functionality includes the following sources:

## Business Requirements Document (BRD)

## User Stories (functional requirements)

## Requirements Composition Table (supplementary requirements)

## *2.1 Features to be tested*

Account Management Module

* Account Authentication.
* View Account summary after successful authentication.
* Customer Support functionality

Buy/Sell Products Module

* Browse Products
* Upload Products

In addition to the above core features, testing will cover crosscutting concerns applicable to the context of individual core features, see the Requirements Composition Table for reference.

## *2.2 Features not to be tested*

As mentioned above, system performance will not be tested for the lack of required tools. Also, usability and security will not be tested as well.

# 3. TEST PROCESS DEFINITION

## *3.1 Test Process Phases*

The test process consists of five phases, which include test planning, design, preparation, execution, and reporting. Each phase has a few tasks as defined below:

* Test Planning
* Define scope and objectives of testing
* Define roles and responsibilities
* Define testing approach
* Test Design
* Identify test ideas, define an approach to designing test cases
* Develop test case specifications
* Measure test coverage
* Determine requirements for test data
* Test Preparation
* Setup a test environment
* Provision test data
* Install the software in the test environment
* Test Execution
* Execute all test cases
* Find and report software defects
* Evaluate system stability
* Validate all target features
* Test Reporting
* Summarize and report the test execution results
* Report defect metrics
* Evaluate the test exit criteria
* Create a test completion report, submit for stakeholder approval
* Obtain stakeholder signoff on system testing

## *3.2 Testing Tasks and Deliverables*

Each phase in the test process is further defined in terms of tasks and deliverables as shown in the table below.

|  |  |  |
| --- | --- | --- |
| **Process Phase** | **Tasks** | **Deliverables** |
| Test Planning | * Define the scope, objectives, and approach to system testing | System Test Plan document |
| Test Design | * Detail the approach to system testing * Specify required test data * Design test-case specifications * Setup a test management system | * Test Design Specification * Test-Case Specifications * Test Management System HPQC |
| Test Preparation | * Setup the test environment * Migrate the system into the test environment * Provision test data * Setup a defect tracking system | * The system under test is up and running in the test environment * Test data available in the QA environment * Defect Tracking System is ready for the test cycle |
| Test Execution | * Test the system and find and report defects | * Defect reports reported in the defect tracking system * The system has been completely tested * Test Summary Report produced and approved |
| Test Reporting | * Produce defect metrics * Report test execution progress * Produce a test completion report | * Test Summary Report * Defect metrics * Test execution status reports |

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# 4. APPROACH TO SYSTEM TESTING

## *4.1 Approach to Functional Testing*

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The overall approach to functional testing will be based on the Black-box method:

* Test cases will be designed using some formal black-box techniques such as boundary-value analysis, equivalent-class partitioning, cause-effect graphing, decision tables, and state-transition testing, where applicable.
* Test execution will be conducted manually, from the user perspective and based on formal test case specifications.

The test execution results will be captured and reported in test execution logs.

# 5. ENTRY/EXIT CRITERIA

# This section defines both Entry and Exit Criteria for test execution and is intended to establish a common understanding about the conditions when the test execution can start and when it can stop.

## *5.1 Entry Criteria*

The test Entry Criteria includes the following items:

* The application build is produced and deployed to the test environment
* The system test plan is produced and approved
* The test environment is ready for testing
* Test Designs and test case specifications are completed

## *5.2 Exit Criteria:*

The test Exit Criteria includes the following items:

* All functional requirements are covered by test cases
* All test cases have been executed
* No defects of critical and high severity remain open
* The project manager and key project stakeholders should agree
* The data to evaluate and the conclusion of that evaluation is presented in a Test Completion report

# 6. SYSTEM TEST ENVIRONMENT

# The test data was prepared with a dozen entries in a csv file inculcating some valid inputs and some invalid inputs for testing. The Test Environment should be available to start test execution. It includes a laptop with IntelliJ and MySQL database, and internet browsers (Chrome, Firefox, Internet Explorer and Safari) to access the application. The test is performed using a local environment setup.

# 7. ROLES AND RESPONSIBILITIES

The project roles involved in system testing include the following:

|  |  |
| --- | --- |
| **Project Role** | **Role Responsibilities** |
| Project Manager | Responsible for the overall project timelines, review and approval of the System Test Plan, escalation of issues. |
| QA Environment Manager | Responsible for procurement and support of the QA environment. |
| Developers | Responsible for producing a working software build, build migration to the QA environment, communicating release notes, investigating and fixing software defects. |
| Test Manager | Responsible for developing a System Test Plan document, planning the testing tasks, maintaining the test repository in HPQC tool, coordinating test execution, producing a Test Completion Report. |
| QA Lead | Responsible for developing test cases, overseeing test execution, conducting defect review calls, providing test execution metrics and reports. |
| Testers | Responsible for developing and executing test cases, reporting defects and re-testing defect fixes. |

# 8. TEST CYCLES AND SCHEDULE

System testing will be executed in three cycles:

* Cycle 1 - focuses on testing the Account Management Module.
* Cycle 2 - focuses on testing the Buy/Sell Products Module.

See the timelines of the testing cycles in the project plan.

# 9. RISKS AND CONTINGENCIES

* A lack of testing resources can result in more time needed to complete test case specifications.
* Changes to the implementation scope or existing functional requirements can impact the test execution schedule.
* Too many defects can delay the completion of test execution.
* Instability of the test environment can impact the test execution schedule.