|  |
| --- |
| DUYTAN UNIVERSITY |
| Test Plan |
| The purpose of this test plan is to test the feasibility of the system and to check the system to have two quality attributes is the ability to use and performance. |

Contents

[I. INTRODUCTION 4](#_Toc343465471)

[1. Goal 4](#_Toc343465472)

[2. Object Test Plan 4](#_Toc343465473)

[3. Scope 4](#_Toc343465474)

[i. In Scope 4](#_Toc343465475)

[ii. Out of Scope 5](#_Toc343465476)

[4. Quality Objective 5](#_Toc343465477)

[i. Primary Objective 5](#_Toc343465478)

[ii. Secondary 5](#_Toc343465479)

[5. Roles and Responsibilities 5](#_Toc343465480)

[i. Developer 6](#_Toc343465481)

[ii. Adopter 6](#_Toc343465482)

[iii. Testing Process Management Team 6](#_Toc343465483)

[6. Assumptions for Test Execution 6](#_Toc343465484)

[II. TEST METHODOLOGY 8](#_Toc343465485)

[1. Usability Testing 8](#_Toc343465486)

[2. Unit Testing 8](#_Toc343465487)

[3. Integration Test 8](#_Toc343465488)

[4. Acceptance Test 8](#_Toc343465489)

[5. Final release Testing 9](#_Toc343465490)

[6. Testing completeness Criteria 9](#_Toc343465491)

[7. Test Levels 9](#_Toc343465492)

[i. Build Test 9](#_Toc343465493)

[ii. Bug Regression 10](#_Toc343465494)

[iii. Bug Triage 10](#_Toc343465495)

[iv. Suspension Criteria and Resumption Requirements 10](#_Toc343465496)

[v. Test Completeness 11](#_Toc343465497)

[8. Test schedule 12](#_Toc343465498)

[III. TEST DELIVERABLES 12](#_Toc343465499)

[1. Deliverables Matrix 12](#_Toc343465500)

[2. Documents 12](#_Toc343465501)

[i. Test Approach Document 12](#_Toc343465502)

[ii. Test Plan 13](#_Toc343465503)

[iii. Test Schedule 13](#_Toc343465504)

[iv. Test Specification 13](#_Toc343465505)

[3. Reports 13](#_Toc343465506)

[IV. TEST STRAGEGIES 14](#_Toc343465507)

[V. Approve 14](#_Toc343465508)

# INTRODUCTION

Methods of test documentation describes the appropriate strategies, processes, work processes and methods used to plan, organize, implement and test software project management system with the functions of the website.

This document describes the plan to build a website online exam solve. It has the following objectives:

* Identify the relationship between use cases.
* Identify existing project information and functions should be checked.
* List the inspection requirements proposed (senior).
* Recommend and describe the functions used.

## Goal

The goal of a project is to test and debugging of the program during its implementation, in order to find the problem.

The objective of the test project is cost-effective to identify and communicate as potential problems with the project as possible and iterate development team until the error is determined to be removed.

This goal is consistent with the objectives of the project development team to provide high quality, it is free of bugs.

## Object Test Plan

This test plan for the development of functions to support the following objectives:

* Identify operational requirements for the preparation and implementation of the system, the user acceptance testing.
* Communicate with all parties responsible for system testing strategy
* Determine the distribution and the responsible parties.
* Communicate with all parties responsible for various dependencies and risks.

## Scope

### In Scope

The purpose of this test plan is to test the feasibility of the system and to check the system to have two quality attributes is the ability to use and performance.

In planning this experiment, we have assumed that unit testing (using techniques such as Black check box for source code) for all interface modules to be completed before We tested the system using this test plan.

In unit testing, each developer will test the basic functionality and quality attributes in the unit test cases.

In integration testing, integration testing interface between the modules and the relationship between the use cases based on the business processes and unit test cases.  
In the system test, system test checks twice by repeated plans for the development of the system.

Test Plan identifies the unit, integration, system, regression testing approach. Scope of inspection includes:

* Testing of all functional, performance, functionality, and security use case requirements listed in the use case document.
* Quality requirements and appropriate data system.
* End-to-end testing and interface testing of all system interacts with the system

### Out of Scope

The following are considered out of scope for the system and test range:

* The functional requirements for testing external application systems for users.
* Testing and disaster recovery plans to continue.

## Quality Objective

### Primary Objective

A key objective of the test system applications are: to ensure that the system meets the requirements, including the requirements for data quality and suitable for each request and response quality use case scenarios and maintain product quality. At the end of the project development cycle, the user will see that the project has met or exceeded all their expectations as detailed in the request.

Any changes, additions or deletions to the requirements document, the function will be the technical documentation, technical or design and test at the highest level of quality in the rest of the time allowed the project and the ability of the test group.

### Secondary

The secondary objective of testing the application system will be: to identify and expose all of the issues and associated risks, communicate all known issues to the project team, and ensure that all both issues are addressed in an appropriate matter before release. As a target, this test requires careful and methodical The first application to ensure all areas of the system is carefully considered, and the results all issues (bugs) found handled appropriately

## Roles and Responsibilities

Roles and responsibilities may vary based on the actual agreement. Functions listed

The following is the testing phase.

### Developer

* Construction of the system / application
* Develop use cases and requirements to coordinate with the adopted child
* Perform unit, system, integration and regression testing
* Support user acceptance testing

### Adopter

* Contribute to developing use case requirements, through the review.
* Contribute to the development and implementation of test script development through review.
* Carry out full user acceptance, regression, and test end-to-end, this including identification of test scenarios, develop test scripts, perform script and report test results.

### Testing Process Management Team

* Monitoring and inspection and integrity management support testing activities
* Coordinate the activities of the Cancer Center add more as appropriate to the scope of testing.

## Assumptions for Test Execution

Here are a minimum number of assumptions (black) have been completed with a BFA. BFA can be used if appropriate for the specific project. Assumptions can also be added to that theory to fit the project.

For user acceptance testing, the development team completed unit, system and integration testing and meet all the requirements "(including quality requirements) based on Request requirements traceability matrix.

The acceptance test will be conducted by end users.

The use cases have been developed by the child for user acceptance testing. Use cases are approved lead inspection.

The test scenarios are developed and approved.

Test Team will support and guidance appropriate to adopt a child and developers to inspect

Depends largely be reported immediately after kicking off test meeting.

Limit test execution.

Here are a minimum number of assumptions (black) followed by limited BFA (red). BFA can be used if appropriate for the specific project. New restrictions can also be added that the project to fit the theory.

The adopted child should clearly understand the testing procedures and record a defect or enhancement. Check Process Management Team will be arranged over the phone with the development and adoption training and resolve any issues related test.

The developer will support continuous testing activities based on the priority of the test script must be approved by the Lead check test before implementation.

The test scenario, test environment and dependencies should be resolved in the time trial meetings in the presence of a small and medium-sized enterprises and the list of requirements must be submitted within 3 days of the meeting.

The developer cannot perform user acceptance and end to end test scenarios.

After debugging, developers can conduct their internal testing, but no results from that test can be recorded / reported.

The adopted son is responsible for determining dependencies between the test script and the clear requirement to set up the test environment.

Bugs: Any errors or defects caused by software / hardware applications or to incident. It is also included in the request and does not meet the job requirements, process or function.

Any change or modify the existing system work better and the process (1).

An error or defect caused the software / application or hardware problem (2).

In case (1) and (2) is not included in the requirements can be classified as a raise.

Strengthening can be added as a new request after appropriate changes

# TEST METHODOLOGY

## Usability Testing

Development will typically create a prototype inactive user interface component to evaluate the proposed design. Usability test can be coordinated by the test, but the real test must be carried out by non-testing (as close to the end user as well). The inspection will look at the findings and provide the project team with the evaluation of the impact of these changes will be in the testing process and the project as a whole.

## Unit Testing

Unit test cases should be developed before the start of implementation of the use case. Before the integration of subsystems developed into a current system, all written unit tests should be made to the target use case and the written form of the results should be integrated.

Test Objective: To ensure that the basic functional requirements and data field testing is completed successfully.

## Integration Test

Some modules are reasonably related will be tested together to ensure integrated and consistent with the requirements. Integration testing will be carried out continuously when the developers check in code.

Integration testing will focus on testing the interfaces between code units, components, and subsystems. The errors found during integration testing …

A defect that can be assigned to a member for analysis, however, the repair is usually assigned to the author of the code modules include defects. Once the defect has been found and fixed, the integration test should be repeated. Once the integration testing has been completed, the test will become part of the regression test suite.

## Acceptance Test

Acceptance testing will be done in incremental versions prior to full product delivery to customers. For each incremental release, a subset of a complete list of end-to-end tests will be used to ensure that we include all of the functions and requirements of the nature of the script that must be satisfied for this version added.

Final acceptance test before the final release will use the entire test procedure.

The client or other external users will be determined and responsible acceptance. Test scenarios and test cases are made will be determined by BFA Team development and client before each iteration. The official does not need to be done before final delivery if the customer wishes to growth. Quality assurance manager will be assigned the task of finding a defect group member. Once the error has been found and fixed, the test must be repeated.

## Final release Testing

Suppose important bug be resolved in the course of repeated testing during the final test release cycle, bug fixes will be focused on the small and trivial errors (levels 3 and 4). The test will continue to verify the stability of the process through application regression testing (fault current is known, as well as existing test cases).

## Testing completeness Criteria

Release for production can only occur after successful completion of test applications during all phases and milestones earlier discussed above.

The target event is important to put the issue / application (built) into production after it has been proven that the application has reached a level of stability to meet or exceed expectations customer in accordance with the requirements, functions Spec.

## Test Levels

### Build Test

#### Level 1 – Build Acceptance Tests

Build Acceptance Tests should take less than 2-3 hours to complete (15 minutes in typical). These test cases simply ensure that the application can be built and installed successfully. Other related test cases ensure that adopters received the proper Development Release Document plus other build related information (drop point, etc.). The objective is to determine if further testing is possible. If any Level 1 test case fails, the build is returned to developers un-tested.

#### Level 2: Smoke Test

Every bug that was “Open” during the previous build, but marked as “Fixed, Needs Re-Testing” for the current build under test, will need to be regressed, or re-tested. Once the smoke test is completed, all resolved bugs need to be regressed. It should take between 5 minutes to 1 hour to regress most bugs.

#### Level 3: Critical Path Tests

Critical Path test cases are targeted on features and functionality that the user will see and use every day.

Critical Path test cases must pass by the end of every 2-3 Build Test Cycles. They do not need to be tested every drop, but must be tested at least once per milestone. Thus, the Critical Path test cases must all be executed at least once during the Iteration cycle, and once during the Final Release cycle.

#### Level 4: Standard Tests

Test Cases that need to be run at least once during the entire test cycle for this release. These cases are run once, not repeated as are the test cases in previous levels. Functional Testing and Detailed Design Testing (Functional Spec and Design Spec Test Cases, respectively). These can be tested multiple times for each Milestone Test Cycle (Iteration, Final Release, etc.).

Standard test cases usually include Installation, GUI, and other test areas.

#### Level 5: Suggested Test

These are Test Cases that would be nice to execute, but may be omitted due to time constraints.

Most Performance and Stress Test Cases are BFA of Suggested test cases (although some should be considered standard test cases). Other BFA of suggested test cases include Network, and Load testing.

### Bug Regression

Bug Regression will be a central tenant throughout all testing phases.

All bugs that are resolved as “Fixed, Needs Re-Testing” will be regressed when testing team is notified of the new drop containing the fixes. The Test Lead will be responsible for tracking and reporting to development and product management the status of regression testing.

### Bug Triage

Bug Triages will be held throughout all phases of the development cycle. Bug triages will be the responsibility of the Test Lead. Triages will be held on a regular basis with the time frame being determined by the bug find rate and project schedules.

Thus, it would be typical to hold few triages during the Planning phase, then maybe one triage per week during the Design phase, BFA twice per week during the latter stages of the Development phase. Then, the Stabilization phase should see a substantial reduction in the number of new bugs found, thus a few triages per week would be the maximum (to deal with status on existing bugs).

### Suspension Criteria and Resumption Requirements

This section should be defined to list criteria’s and resumption requirements should certain degree and pre-defined levels of test objectives and goals are not met.

Please see BFA below:

* Testing will be suspended on the affected software module when Smoke Test (Level 1) or Critical Path (Level 2) test case bugs are discovered after the 2nd iteration.
* Testing will be suspended if there is critical scope change that impacts the Critical Path

A bug report should be filed by Development team. After fixing the bug, Development team will follow the drop criteria (described above) to provide its latest drop for additional Testing. At that time, adopters will regress the bug, and if passes, continue testing the module.

### Test Completeness

Testing will be considered complete when the following conditions have been met:

#### Standard Conditions

* When Adopters and Developers, agree that testing is complete, the app is stable, and agree that the application meets functional requirements.
* Script execution of all test cases in all areas has passed.
* Automated test cases have in all areas have passed.
* All priority 1 and 2 bugs have been resolved and closed.
* NCI approves the test completion
* Each test area has been signed off as completed by the Test Lead.
* 50% of all resolved severity 1 and 2 bugs have been successfully re-regressed as final validation.
* Ad hoc testing in all areas has been completed.

#### Bug Reporting & Triage Conditions

Please add Bug reporting and triage conditions that will be submitted and evaluated to measure the current status.

* Bug find rate indicates a decreasing trend prior to Zero Bug Rate (no new Sev. 1/2/3 bugs found).
* Bug find rate remains at 0 new bugs found (Severity 1/2/3) despite a constant test effort across 3 or more days.
* Bug severity distribution has changed to a steady decrease in Sev.1 and 2 bugs discovered.
* No ‘Must Fix’ bugs remaining prior despite sustained testing.

## Test schedule

A test schedule includes the testing steps or tasks, the target start and end dates, and responsibilities. It should also describe how the test will be reviewed, tracked, and approved.

|  |  |  |  |
| --- | --- | --- | --- |
| **Test step** | **Start date** | **End date** | **Responsibility** |
| Test Plan | 12/2/2012 | 12/6/2012 |  |
| System Test | 12/2/2012 | 12/4/2012 |  |
| Document Test | 12/5/2012 | 12/6/2012 |  |

# TEST DELIVERABLES

## Deliverables Matrix

* Below is the list of artifacts that are process driven and should be produced during the testing lifecycle…
* This matrix should be updated routinely throughout the project development cycle in you project specific Test Plan.

|  |
| --- |
| Deliverable |
| Document |
| Test Approach   * Test Plan |
| * Test Schedule |
| * Test Specifications |
| Test Case / Bug Write-Ups |
| Test Cases / Results |
| Test Coverage Reports |
| ….. |
| Report |
| Test results report |
| Test Final Report – Sign-Off |

## Documents

### Test Approach Document

When this document is completed, the Test Lead will distribute it to the Product Manager, Development Lead, User Representative, Program Manager, and others as needed for review and sign-off.

### Test Plan

The purpose of the Test Plan document is to:

* + Specify the approach that Testing will use to test the product, and the deliverables (extract from the Test Approach).
  + Break the product down into distinct areas and identify features of the product that are to be tested.
  + Specify the procedures to be used for testing sign-off and product release.
  + Indicate the tools used to test the product.
  + List the resource and scheduling plans.
  + Indicate the contact persons responsible for various areas of the project.
  + Identify risks and contingency plans that may impact the testing of the product.
  + Specify bug management procedures for the project.
  + Specify criteria for acceptance of development drops to testing (of builds).

### Test Schedule

The Test Schedule is the responsibility of the Test Lead (or Department Scheduler, if one exists) and will be based on information from the Project Scheduler (done by Product Manager). The project specific Test Schedule may be done in MS Project.

### Test Specification

A Test Specification document is derived from the Test Plan as well as the Requirements, Functional Spec, and Design Spec documents. It provides specifications for the construction of Test Cases and includes lists of test case areas and test objectives for each of the components to be tested as identified in the project’s Test Plan.

## Reports

The Test Lead will be responsible for writing and disseminating the following reports to appropriate project personnel as required.

#### Test status reports

A weekly or bi-weekly status report will be provided by the Test Lead to project personnel. This report will summarize weekly testing activities, issues, risks, bug counts, test case coverage, and other relevant metrics.

#### Phase Completion Reports

When each phase of testing is completed, the Test Lead will distribute a Phase Completion Report to the Product manager, Development Lead, and Program Manager for review and sign-off.

The document must contain the following metrics:

* + Total Test Cases, Number Executed, Number Passes / Fails, Number Yet to Execute
  + Breakdown of Bugs by Severity / Priority MatrixD
  + Discussion of Unresolved Risks
  + Discussion of Schedule Progress, etc…

#### Test Final Report – Sign-Off

A Final Test Report will be issued by the Test Lead. It will certify as to the extent to which testing has actually completed (test case coverage report suggested), and an assessment of the product’s readiness for Release to Production.

# TEST STRAGEGIES

1. Architecture Review
2. Detailed Design Reviews
3. Code Reviews
4. Issue List and Defect Tracking

# Approve

**Prepared By** Mac Van Anh

This document requires the following approvals

**Approved By** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]

**Approval Date** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_