Test Plan

RajaMark

Version: 2.0.0
Date: 30/04/2024

1.0 Introduction

1.1 Purpose

The test plan supports the following objectives:

I. To detail the activities required to prepare for and conduct the system test.
II. To communicate with all responsible parties the tasks that they are to perform and the schedule to be followed in performing the tasks.
III. To define the sources of the information used to prepare the plan.

1.2 Scope

The scope of testing only covers black box functional testing for features developed in Rajaark for F001 until F014. The test plan only covers system level test, excluding unit test, static test, integration test, acceptance test, regression test, confirmation test as well as other types of tests not mentioned in this Test Plan. It would focus on meeting the requirements of the system and making sure that the system is fit for purpose.

1.3 References

The following IEEE standards have been referenced in the preparation of this document.

I. IEEE 829-2008 Standard for Software and System Test Documentation.

The following documents provide the test basis for this test design:

I. System Design Document

2.0 Details of Test Plan

2.1 Test Items

The following document(s) will provide the basis for defining the correct operation:

I. System Design Document

2.2 Test Traceability Matrix

The following table contains all the functions in RajaMark and its traceability.

- **Low Risk**: Functions with a low-risk designation are stable and well-understood, requiring minimal testing efforts to ensure basic correctness.
- **Medium Risk**: Medium-risk functions have moderate complexity and potential impact, necessitating comprehensive testing to address uncertainties and dependencies effectively.
- **High Risk**: High-risk functions are critical components with significant potential impact, demanding rigorous testing to identify and mitigate risks thoroughly and ensure system stability and reliability.

Table 2.2: Test Traceability Matrix

Function ID	Risk Level	Function Description
F001	Low	Register
F002	Low	Login
F003	Low	Logout
F004	Low	Forget Password
F005	Moderate	Manage Exam

F006	Moderate	View Exam
F007	High	Upload Sample Answer
F008	High	Upload Student Data
F009	Moderate	View Student Score
F010	Moderate	Generate Student Report
F011	High	Preprocess Image
F012	High	Extract Answer
F013	High	Compare Answer to Question
F014	Moderate	Calculate Exam Score
F015	Moderate	User Manual

2.3 Features To Be Tested

The following table contains the features to be tested based on the System Design Document. Listed together are the function ID and its corresponding functions and estimated risk level.

- **Low Risk**: Functions with a low-risk designation are stable and well-understood, requiring minimal testing efforts to ensure basic correctness.
- **Medium Risk**: Medium-risk functions have moderate complexity and potential impact, necessitating comprehensive testing to address uncertainties and dependencies effectively.
- **High Risk**: High-risk functions are critical components with significant potential impact, demanding rigorous testing to identify and mitigate risks thoroughly and ensure system stability and reliability.

Table 2.3: Features To Be Tested

Function ID	Function	Risk Level	Person In Charge
F001	Register	Low	Danial
F002	Login	Low	Danial
F003	Logout	Low	Surenthar
F004	Forget Password	Low	Surenthar
F005	Manage Exam	Moderate	Hendrick
F006	View Exam	Moderate	Hendrick
F007	Upload Sample Answer	High	Khiruba
F008	Upload Student Data	High	Khiruba
F009	View Student Score	Moderate	Nisya

F010	Generate Student Report	Moderate	Nisya
F011	Preprocess Image	High	Afiq
F012	Extract Answer	High	Afiq
F013	Compare Answer to Question	High	Iffah
F014	Calculate Exam Score	Moderate	Iffah
F015	User Manual	Moderate	Surenthar

Other aspects of the system that are not covered in this test plan includes, but is not limited to:

I. Operation Procedure
This test plan is for static, integration and system level test, operation procedure is not covered here.

II. Network Security
This test plan is designed for functional tests, security is not covered here.

III. Performance
This test plan is for functional testing. Hence, performance testing is not covered.

2.5 Approach

The test on RajaMark is a system level functional test that focuses only on the functional part of the system. Hence, the testing will be using a risk-based strategy. This test will also be a black-box test where test cases are derived using black box testing techniques such as:

I. Equivalence partitioning
II. Boundary value analysis
III. Decision table testing
IV. State transition
V. Use case testing
VI. GUI testing
VII. Error Guessing

2.6 Item Pass/Fail Criteria

The system must satisfy the following criteria in order to pass:

I. All test cases must be passed
II. No deadlock during operation

Other than that, all test items must fulfill its requirements as stated in the System Design Document.

2.7 Suspension Criteria and Resumption Requirements

Suspension Criteria:

- none

Resumption Requirement:

- none

2.8 Test Deliverables

The following documents will be generated by the system test group and will be delivered during the system testing.

Test documentation:

I. Test Plan
II. Test Case Specifications
III. Test Report

2.9 Entry Criteria

The following items are needed before the testing can begin:

I. System Design Document
II. Test Case Specification

2.10 Exit Criteria

The following items are needed before the testing can end:

I. All Test Deliverables in Section 2.8 Test Deliverables have been delivered to the client.
II. Test execution has been completed.
III. Open defect at the end of final iteration shall be:
    - Zero fatal defect,
    - Zero major defect
    - <= three minor defects.

- **Fatal Defect**: A fatal defect is a severe issue that completely prevents the software from functioning as intended or causes a critical failure, rendering the system unusable or causing data loss.
- **Major Defect**: A major defect is a significant issue that affects essential functionalities or performance, potentially impacting the user experience or violating key requirements but doesn't render the system completely unusable.
- **Minor Defect**: A minor defect is a relatively minor issue that doesn't significantly impact system functionality or performance but may cause inconvenience or minor deviations from expected behavior.

Approvals

Approved Date	Approved Version	Approver Role	Approver