RMIT
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RMIT UNIVERSITY VIETNAM

School of Science, Engineering and Technology

Department of Information Technology

EEET2578 / ISYS2092 – Semester 2 of 2024

SOFTWARE QUALITY ASSURANCE AND TESTING

TEST MANAGEMENT PLAN

Company name: The Tangerine Company

Company client: His Excellency Dr Ngo Tuan Phong

Test planning department:

- Mr Tran Minh Nhat – s3926629 (head)
- Mr Tran Tan Phat – s3836612 (deputy)
- Mr Dang Vinh Luan
- Mr Pham Nguyen Minh Dang

Location: Ho Chi Minh City, Vietnam

We declare that in submitting all work for this assessment we have read, understood and agree to the content and expectations of the Assessment declaration.

SEPTEMBER 2024

2024 Test Plan for RTI International's Tangerine Product Series

1. **Introduction**

- Project Name: The Tangerine Product Series
- Version: v1.0-2024
- Document Purpose:
    - The scope, approach, resources, and schedule of the Tangerine product series' testing activities are presented in this document.
    - This document identifies the test items, features to be tested, testing duties, responsible personnel, and any risks that necessitate contingency planning.

2. **Test Objectives**

- Verify the functionality and quality of Tangerine and its components
    - These includes Tangerine, Tangerine: Class, Tangerine: Tutor and its related accompaniments.
- Guarantee that Android devices (v2.3 or newer) are compatible.
    - Confirm that the product satisfies all functional and non-functional specifications.
- Guarantee the security of data that is stored locally and transmitted over the internet.
- Guarantee the system's efficacy and usability in low-resource environments.

3. **Scope of Testing**

- In-Scope:
    - Functional testing of classroom observations, surveys, and EGRA and EGMA assessments.
    - Performance testing is conducted under a variety of network and device conditions.
    - Data storage and synchronization security testing.
    - Testing for compatibility with Android devices that are operating version 2.3 or higher.
- Out-of-Scope:
    - RTI does not offer integration with third-party analytics tools.

- o Testing of hardware that is not in accordance with the prescribed specifications of the device.

4. **Test Items**

- Core components of the Tangerine product series, including:
    - o EGRA/EGMA assessments
    - o Built-in timers for precise measurement
    - o Surveys and classroom observations
    - o Data export to CSV
    - o Data synchronization (offline/online scenarios)

5. **Test Approach**

- Test Levels:
    - o Unit Testing: Individual module testing of the product (e.g., timers, data collection components).
    - o Integration Testing: Testing interactions between different modules.
    - o System Testing: End-to-end testing of the Tangerine products.
    - o User Acceptance Testing (UAT): Testing against real-world scenarios from RTI's user base.
- Testing Types:
    - o Functional Testing: Guaranteeing that the fundamental features function as anticipated.
    - o Regression Testing: Ensuring that modifications do not affect extant functionalities.
    - o Performance Testing: Evaluating the stability of the application in low-resource and high-stress environments.
    - o Security Testing: Evaluating encryption and data protection mechanisms to protect the users.
    - o Usability Testing: Assessing the user experience on various devices to ensure good customer comments.

6. **Test Environment**

- Hardware:
  - Varying screen resolutions, processors, and RAM are supported on devices that are running Android 2.3 or higher.
- Software:
  - Android operating system (versions 2.3 and later)
  - Katalon (automated testing), Espresso, OWASP (security testing), and JMeter (performance testing) are the testing instruments.
- Test Data:
  - Produced test data for a variety of assessments and surveys in a variety of languages.

7. **Test Schedule**

Assumed that week 1 is used for the recruitment and preparation...

Activity	Start Date	End Date	Responsible
Test Planning	5/7/2024	12/7/2024	Test Lead
Test Case Design	12/7/2024	16/7/2024	Test Engineers
Unit Testing	17/7/2024	29/7/2024	Development Team
Integration Testing	30/7/2024	5/8/2024	QA Team
System Testing	10/8/2024	15/8/2024	QA Team
User Acceptance Testing	19/8/2024	26/8/2024	QA Team
Regression Testing	27/8/2024	1/9/2024	QA Team
Test Closure	5/9/2024	12/9/2024	Test Lead

8. **Test Deliverables**

- Test Plan document
- Test Cases (covering functionality, performance, security, and usability)

- Automated Test Scripts (for regression and performance testing)
- Test Results and Defect Reports
- Test Summary Report

9. Roles and Responsibilities

Role	Responsibilities	Person/Team
Test Manager	Planning, strategy, and oversight	Team 2
Test Engineers	Writing, executing, and documenting test cases	Team 2
Developers	Fixing defects, supporting testing	Team 2
Business Analyst	Clarifying requirements	Team 2
Project Manager	Overall governance	Tangerine Supervisor

10. Entry and Exit Criteria

- Entry Criteria:
    - Requirements finalized.
    - Test environment set up.
    - Test data created.
    - All created Test Cases must be approved by the test manager
- Exit Criteria:
    - All tests executed.
    - No high-priority defects remaining.
    - The product meets all of the requirement according to the test.

11. Risk Management

- Risks:
    - Compatibility issues on older devices.
    - Data leakage risks in insecure network environments.

         ○   Delays in testing due to device unavailability.

- Mitigation Strategies:
    - Expand testing to cover a wide range of OSes.
    - Implement strong encryption and data protection measures.
    - Plan ahead for resource allocation and backup devices.

12. Defect Management

- Defect Logging Tool: Jira/Qality
- Defect Life Cycle:
    - Report → Triage → Fix → Retest → Close

13. **Test Tools**

Test Management Tool: Jira/Qality (for task management and defect tracking)
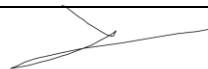
Automation Tool: Katalon

Performance Testing Tool: JMeter

Security Testing Tool: OWASP

14. **Test Metrics and Reporting**

- Metrics:
    - Test Case Execution Progress
    - Defect Density (Function that has the most defects)
    - Test Coverage
    - Defect Turnaround Time (Optional)
- Reporting Frequency:
    - Weekly status updates and a Test Summary Report at the end.

15. Approval

Name	Role	Signature	Date

Tran Minh Nhat	Test Manager		September 18, 2024
	Project Lead		September 20, 2024