**Alpha Test Phase:**

RFID-Based Library Management System

Bulldogs Book Express

**Prepared by:**

Project Manager - Angeles, Lorenz

QA Lead – Roxas, Marcus Christopher

Developer – Agorilla, Edriane Joelle

09/11/2023 | VERSION 0

**Table of Contents**

[1.0 Alpha Test Executive Summary 2](#_Toc145494643)

[2.0 Test Phases 2](#_Toc145494644)

[3.0 Schedule 2](#_Toc145494645)

[4.0 Results Measurement 3](#_Toc145494646)

[5.0 Test Budget 3](#_Toc145494647)

[6.0 Test Overview 3](#_Toc145494648)

[6.1 Product Details 3](#_Toc145494649)

[6.2 Test Details 3](#_Toc145494650)

[6.3 Test Stages and Phases 4](#_Toc145494651)

[7.0 Stakeholders 6](#_Toc145494652)

[7.1 Customer Validation 6](#_Toc145494653)

[7.2 Product Team 6](#_Toc145494654)

[8.0 Test Objectives 7](#_Toc145494655)

[8.1 Test Requirements 7](#_Toc145494656)

[8.2 OS Segmentations 8](#_Toc145494657)

[8.3 Test Cases and Activities: 8](#_Toc145494658)

[8.4 Additional Product Topics 9](#_Toc145494659)

[8.5 Bug Reports 10](#_Toc145494660)

1.0 Alpha Test Executive Summary

|  |  |
| --- | --- |
| **Product Name** | **Bulldogs Book Express RFID-Based Library Management System** |
| Product Description | The RFID-Based Library Management System Kiosk offers an intuitive self-service experience, utilizing cutting-edge RFID technology to streamline borrowing and returning processes. Its user-friendly interface ensures accessibility for all patrons, revolutionizing library operations for an efficient and enjoyable experience. |
| Test Codename | BBX |
| Test Objective | The primary test objective is to verify the accurate and reliable performance of the RFID-Based Library Management System Kiosk, encompassing tasks such as item transactions, database integration, usability, security, and error handling. The goal is to certify that the kiosk meets or exceeds specified requirements, providing a robust and user-friendly solution for library patrons. |

2.0 Test Phases

|  |  |
| --- | --- |
| **Preparation** | Define objectives and scope. Create necessary test data. Set up environment. Review test cases. Assign roles. |
| **Testing** | Execute cases for borrowing, returning, and inventory. Validate database updates. Assess UI, error handling, security. Conduct performance tests. |
| **Closure** | Document and report results. Log and prioritize defects. Evaluate objectives. Prepare Test Summary Report. Review lessons learned. |

3.0 Schedule

|  |  |  |
| --- | --- | --- |
| **Day** | **Period** | **Activity** |
| 1 | Preparation | Define test objectives and scope. Create or gather test data. Set up the test environment. |
|  |  | Review and finalize test cases and scripts. Assign roles and responsibilities. |
| 2 | Preparation | Address and retest any identified defects from previous testing phases. |
| 3 | Testing | Execute test cases for borrowing processes. Validate database integration. |
| 4 | Testing | Execute test cases for returning processes. |
| 4 | Testing | Assess user interface for accessibility and ease of use. |
| 5 | Testing | Test error handling and recovery mechanisms. |
| 5 | Testing | Conduct security testing. |
| 9 | Testing | Execute performance tests under various loads. |
| 9 | Closure | Document and report test results. Log and prioritize defects. |
| 10 | Closure | Evaluate if all test objectives have been met. Prepare Test Summary Report. |
| 15 | Closure | Conduct a review meeting to discuss lessons learned and improvements. |
| 20 | Preparation | Address and retest any identified defects. Prepare for User Acceptance Testing (UAT). |
| 13 | Testing | Conduct User Acceptance Testing (UAT). |
| 14 | Testing | Conduct User Acceptance Testing (UAT). |
| 15 | Closure | Document and report UAT results. Log and prioritize any UAT defects. |
| 16 | Closure | Evaluate if UAT objectives have been met. Prepare the final Test Summary Report. |

4.0 Results Measurement

|  |  |
| --- | --- |
| **Feedback Type** | **Objectives** |
| Solicited Test | Gather proactive feedback through NPS and CSAT |
| User Acceptance | Ensure the kiosk meets end-users’ expectations in terms of usability and functionality. |
| Regression Testing | Ensure new changes do not negatively impact existing functionality |

5.0 Test Budget

|  |  |  |
| --- | --- | --- |
| **Devices** | **Note** | **Estimated Price** |
| RFID Kiosk Unit | Main testing unit for all functionalities. | ₱22,000.00 |
| RFID Tags (Set of 50) | Used for testing item borrowing and returns. | ₱1,500.00 |
| Touchscreen Monitor | Ensures proper functionality of the UI. | ₱12,000.00 |
| Test Library Items | Various items to simulate real library inventory. | ₱0.00 |
| Barcode Scanner | Used for comparison and validation. | ₱1,000.00 |
| Laptop/Desktop (for QA) | Required for test planning and documentation. | ₱0.00 |
| Testing Tools & Software | Test management, automation, security tools. | ₱0.00 |
| Miscellaneous | Various accessories for setup and connectivity. | ₱5,000.00 |

6.0 Test Overview

## 6.1 Product Details

|  |  |
| --- | --- |
| **Product Name** | **Bulldogs Book Express** |
| Product Description | The RFID-Based Library Management System Kiosk offers an intuitive self-service experience, utilizing cutting-edge RFID technology to streamline borrowing and returning processes |
| Product URL |  |
| Est. Product Release Date | TBD |

## 6.2 Test Details

|  |  |  |
| --- | --- | --- |
| **Test Codename** | **BBX** | **Internal Testing Phase** |
| Total Test Period | 16 days | The period during which we will be conducting quality testing of the product and offering feedback. |

## 6.3 Test Stages and Phases

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Stage/Phase** | **Start Date** | **Duration** | **Test Cases** | **Hardware Testing** | **Total** |
| Functional Testing | 10/16/23 | 2 Days | Borrowing/Returning Functionality  Evaluate Touchscreen Responsiveness  Test Unauthorized Access Attempt  Database Integration | RFID Scanner  Touchscreen Interface | **3** |
| Usability Testing | 10/18/23 | 2 Days | Evaluate UI Clarity  Test Navigational Ease  Assess the clarity of error messages | Buttons and Controls  Display Screen | **3** |
| Security Testing | 10/18/23 | 7 Days | Test Unauthorized Access Attempt  Validate Data Protection Measures  Assess resistance to common Security Threats  Secure handling of sensitive information | Alarm Systems  RFID Reader/Scanner | **4** |
| Error Handling Testing | 10/20/23 | 3 Days |  | N/A |  |
| Integration Testing | 10/20/23 | 3 Days | Test response to invalid card scan  Check system behavior during network outages  Simulate hardware malfunctions  Verify handling of unexpected user inputs | RFID Reader/Scanner Integration | 4 |
| Performance Testing | 10/21/23 | 3 Days | Response Time for borrowing and returning books  Test system performance under peak user load  Verify responsiveness during simultaneous user interactions  Network Stability | RFID Response Time  Screen Responsiveness  Network Speed | 4 |
| Reliability Testing | 10/25/23 | 7 Days | Test RFID reader reliability across various tags  Assess touch screen interface durability  Check system’s uptime under continuous usage  Evaluate system stability during extended testing periods | RFID Reliability  Touch Screen Reliability | 4 |
| Compatibility Testing | 10/25/23 | 2 Days | Compatibility with different RFID tag formats  Assess compatibility with common Library item formats | RFID Compatibility with Different Tags | 2 |
| Compliance Testing | 10/28/23 | 3 Days | Compliance with data protection regulations  Assess compliance with safety and security protocols  Check alignment with relevant legal and regulatory requirements | N/A | 3 |
| Maintenance Testing | 11/04/23 | 2 Days | Test accessibility for maintenance tasks  Verify ease of component replacement  Assess system behavior after software updates  Check if maintenance activities affect system performance | Ease of Component Replacement | 4 |

7.0 Stakeholders

## 7.1 Customer Validation

|  |  |  |
| --- | --- | --- |
| **Name** | **Role** | **Responsibilities** |
| Lorenz Angeles | Test Manager | oversees planning, execution, and reporting of tests, manages the team, tracks progress, and ensures resources are in place. They also handle defect management and ensure compliance with testing standards. |
| Marcus Christopher Roxas | Tester Lead | plans, designs, and coordinates test, manages defects, guides the team, tracks progress, and ensures resources are available. They also maintain documentation and follow testing standards. |

The designated team is accountable for the successful execution of this test within the project.

## 7.2 Product Team

|  |  |  |
| --- | --- | --- |
| **Name** | **Role** | **Email Address** |
| Lorenz Angeles | Project Manager | angeleslr@students.nu-fairview.edu.ph |
| Marcus Christopher Roxas | Quality Assurance Lead | roxasmd@students.nu-fairview.edu.ph |
| Edriane Joelle Agorilla | Developer | agorillaeq@students.nu-fairview.edu.ph |

Team members will be given access to the platform and will receive regular reports and updates on project status.

8.0 Test Objectives

## 8.1 Test Requirements

|  |  |
| --- | --- |
| **Requirement** | **Testing Phase** |
| The RFID kiosk must accurately scan and identify items. | Functional Testing |
| The kiosk's user interface should be intuitive and accessible. | Usability Testing |
| The system must handle simultaneous user interactions without errors. | Performance Testing |
| The kiosk should be resistant to common security threats. | Security Testing |
| Integration with the library's database should be seamless. | Integration Testing |
| The kiosk should provide clear error messages for user guidance. | Error Handling Testing |
| The system should allow easy software updates and maintenance. | Maintenance Testing |
| The kiosk should have a responsive touch screen interface. | Usability Testing |
| The system must comply with relevant data protection regulations. | Compliance Testing |
| The kiosk should be compatible with common library item formats | Compatibility Testing |
| The system must provide accurate real-time inventory information. | Functional Testing |
| The kiosk should have a backup power supply for uninterrupted service. | Reliability Testing |
| The system should support multiple languages for user convenience. | Usability Testing |
| The kiosk must generate detailed transaction logs for auditing purposes. | Functional Testing |
| The system should have an intuitive user authentication process. | Usability Testing |

To be eligible for this test, all testers must meet the following fundamental prerequisites:

## 8.2 OS Segmentations

Testing will be grouped into the following operating systems:

|  |  |  |
| --- | --- | --- |
| Segment | Requirement | Builds |
| Windows | Windows 10 or later | All |
| macOS | n/a (web compatibility only) | All |
| iOS | n/a (web compatibility only) | All |
| Android | n/a (web compatibility only) | All |

## 8.3 Test Cases and Activities:

Test Cases and Activities utilizes an approach to gather insights on prioritized features of the product. This approach lays topics out as a map of the product. Cases are created on key features of the product. Issues encountered during testing are filed. Through analysis, actionable and insightful recommendations are provided in reports and weekly meeting.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Topic | Description | Activity | Size | Weight | OS |
| Phase 1 | | | | | |
|  | Browse System Catalog | * Search for books in the catalog * Sort catalog * Click book information | Medium | 1.5 |  |
|  | Scan books for borrowing at kiosk | * Scan book to kiosk * Scan ID to kiosk * Verify checkout information | Large | 2.0 |  |
|  | Scan books for returning at kiosk | * Scan book to kiosk * Scan ID to kiosk * Verify return status * Verify book returned status | Large | 2.0 |  |
|  | View account status in app | * Open app * Click account status * Verify account status | Medium | 1.5 |  |
|  | Checkbook due dates in app | * Open app * Click due dates * Verify due dates | Medium | 1.5 |  |
|  | Provide feedback in the app | * Open app * Click provide feedback * Write feedback * Verify feedback acceptance | Small | 1.0 |  |
|  | Receive notifications from app | * Open app * Check notifications tab |  |  |  |
| Phase 2 | | | | | |
|  | Add new books in the catalog | * Access staff page * Add books to the catalog * Verify new addition | Large | 2.0 |  |
|  | Remove Books from the catalog | * Access staff page * Remove books from the catalog * Verify removal of book | Large | 2.0 |  |
|  | Process check-outs and returns through the RFID scanner |  |  |  |  |
|  | Manage user accounts | * Access staff page * Check user accounts * Check user details | Large | 1.75 |  |
|  | Generate reports on book availability | * Access staff page * Book availability logs * Generate book availability report | Large | 1.75 |  |
|  | Generate reports on due dates and fines | * Access staff page * Check due date and fine logs * Generate due date and fines report | Large | 1.75 |  |

## 8.4 Additional Product Topics

These are not specifically covered in Test Activities but are used for categorization of reports and establishing common terms between stakeholder groups.

|  |  |  |
| --- | --- | --- |
| Topics | Details | Weight |
| Database | Issues related to database performance or accuracy | 2.0 |
| User Interface | The design elements of the application and their related usability | 2.0 |
| App performance | peed and responsiveness related to application functionality | 1.5 |
| Text | Grammar, spelling, and other text elements in the application | 1.0 |
| Privacy | Systems regarding front-end access to security, personal identifying information, etc. | 2.0 |
| Legal | Items regarding legal, legal statements, and California law compliance | 2.0 |
| Other | Other areas of the product not covered by the above topics | 1.0 |

## 8.5 Bug Reports

Testers will be expected to report detailed accounts of any negative issues they experience as Bug Reports. Once filtered by the Customer Validation team, existing Bug Reports are available to other testers in order to collaborate and collect additional details.

Bug Report Fields:

|  |  |
| --- | --- |
| Name | Description |
| Summary |  |
| Steps to Reproduce |  |
| Test Platform |  |
| File Attachments |  |
| Topic |  |
| Severity |  |
| Status |  |
| Closure Reason |  |
| Client Resolution |  |
| Reproduction |  |
| Blocking issue |  |
| Comments |  |

Bug Report Field: Severity

|  |  |  |
| --- | --- | --- |
| **Label** | **Description** | **Weight** |
| Critical | Defect causes failure of essential operation of the system. A problem with a major Topic that exhibits itself frequently. A workaround may exist, but its use is not feasible for normal use. Item is affecting other items or systems not directly related to the test. |  |
| Major | Defect causes failure of noncritical aspects of the system, within a primary Topic. A problem with non-primary Topic that exhibits itself frequently |  |
| Minor | Nonessential operations are disrupted. A satisfactory or easy workaround exists to an otherwise Major severity. Problem is noncritical and not easily duplicated or does not reoccur often. |  |
| Trivial | No significant impact on operations. Defect does not impact performance. |  |

Suggestions:

Suggestions collect ideas or requests based on the live product experience. Suggestions are collaborative in nature, allowing the tester team to drive discussion toward popular Suggestions.

Suggestion Fields:

|  |  |
| --- | --- |
| **Name** | **Description** |
| Summary |  |
| Description |  |
| File Attachments |  |
| Topic |  |
| Status |  |
| Closure Reason |  |
| Client Resolution |  |
| Comments |  |

Sample Bug:

|  |  |
| --- | --- |
| **Name** | **Description** |
| Summary | Cataloging errors |
| Steps to Reproduce | Simultaneous inputs in catalog |
| Test Platform | Library System |
| File Attachments |  |
| Topic |  |
| Severity | Major |
| Status | Sent to Client |
| Closure Reason | Support Request |
| Client Resolution | Tester Reproduced |
| Reproduction |  |
| Blocking issue | Network instability |
| Comments |  |