### 1. Test Plan Document

**Test Lead:** Shreetama Das

**QA Team:** Sumana Manna, Esha Kundu, Jyoti

**Objectives:**

1.Validate new login workflow

2.Execute regression suite for all existing modules

3.Validate the Library Management UI workflows including Library Card, Book Search.

**Scope of Testing:**

**Functional Testing**: Validates that all features and workflows of the Library Management System function as per the specified requirements, including user actions, form submissions, and search functionality.

**UI Testing:** Ensures the user interface elements such as layout, input fields, buttons, and messages are displayed correctly, are responsive, and provide a user-friendly experience across supported browsers.

**Test Environments:**

QA URL: <http://webapps.tekstac.com/SeleniumApp2/Library/Library.html>

**Tools:**

**Jira:** Used for logging, tracking, and managing defects throughout the testing lifecycle.

**Zephyr:** Integrated with Jira for creating, managing, and executing test cases.

**Excel:** Used for maintaining backup documentation of test cases, test data, and execution results when needed.

**Selenium**: For automating test cases.

**BBD Cucumber:** For behavioral data driven testing.

**TestNG:** Used for test execution and reporting.

**Eclipse:** Used for writing, debugging and executing automation test scripts.

**Github :** Used for collaborative code management through pull, push and commit.

**Risks:**

**Test data dependency:** Test execution may be impacted if required test data is unavailable, inconsistent, or not properly maintained, leading to false negatives or blocked test cases

.

**Delay in defect resolution:** Slow turnaround on fixing critical bugs can hinder testing progress, cause rework, and potentially delay the overall release schedule.

**Deliverables:**

**Test cases:** A comprehensive set of manual test cases covering all functional and UI aspects of the Library Management System. These are created and reviewed to ensure traceability to requirements and complete test coverage.

**Automation scripts:** Automation scripts developed using Selenium WebDriver to validate critical flows and reduce regression testing effort. These scripts ensure consistent, repeatable, and faster test execution.

**Bug reports:** Detailed defect reports logged in Jira with severity, steps to reproduce, screenshots, and environment details. These helps track and resolve issues during the QA cycle.

**Test execution reports**: Summarized reports showing the results of manual and automated test runs, including pass/fail counts, execution status, and defect linkage. Used for go/no-go release decisions.

**Product Backlog:** An evolving list of features, enhancements, and known defects maintained in collaboration with stakeholders. It reflects the current scope and priorities of the product.

**Sprint backlog:** A committed subset of the product backlog items selected for implementation and testing in the current sprint. It includes corresponding test tasks and objectives.

**Sprint Retrospective Notes:** Documented feedback and observations gathered at the end of each sprint to identify successes, challenges, and areas for improvement in the QA and development processes.

#### **Test Strategy Summary**

* **Manual Testing**: All new features and complex UI flows.
* **Automated Testing**: Regression test cases using Selenium WebDriver.
* **Defect Retesting**: Within 1 business day of defect fix.
* **Regression Testing**: After each successful defect fix deployment.

#### **Entry and Exit Criteria** (Critical for a Master Test Plan)

**Entry Criteria:**

* Approved business and UI requirement documents are available.
* QA environment is deployed and accessible.
* Test data is created and validated.
* Test cases are reviewed and approved.
* All required tools (Jira, Zephyr, Selenium, TestNG , Github etc.) are accessible to the QA team.

**Exit Criteria:**

* All planned test cases have been executed.
* All critical and high-severity defects are closed.
* Regression testing is complete with no major issues.
* Test execution report reviewed and signed off by stakeholders.
* Automation scripts executed and passed for all core flows.

#### **Assumptions and Dependencies**

* Development will provide testable builds on agreed timelines.
* Backend services (e.g., DB and APIs) are stable during QA.
* UI components will be browser-compatible as per spec.

#### **Test Metrics**

* 100% of test case execution completed
* 62.86% of test cases passed
* 37.14% of test cases failed
* Defect density : 3.25 bugs/module
* Test coverage : 100%