Software Quality Assurance Plan (SQAP)

Project Name: MindFold

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Revision History

| Date | Update(s) | Version | Author |
| --- | --- | --- | --- |
| 2024-10-02 | Created initial draft with title page and TOC. | 0.0.1 | William |
| 2024-10-03 | Added stubs, Introduction, and Section 1 | 0.1.0 | William |
| 2024-10-04 | Completed Section 2 and SQA Activities | 0.2.0 | Willliam |

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8. **Introduction**

The Software Quality Assurance Plan (SQAP) for the MindFolds app outlines the procedures and processes to ensure the app meets high-quality standards throughout its development and release phases. MindFolds is a microlearning platform designed to provide ultra-short, interactive lessons based on users' interests, using AI to suggest content that helps users learn in bite-sized, engaging ways. This SQAP is meant to ensure that the development, design, and deployment of MindFolds adhere to the requirements and quality standards needed for a successful learning app.

1. **Definitions and Acronyms**

**SQA**: Software Quality Assurance

A set of activities to ensure that the software development process and final product meet the required quality standards.

**SQAP**: Software Quality Assurance Plan

This document outlines the quality processes and procedures followed during the development of the MindFolds app.

**UI/UX**: User Interface/User Experience

The design and interaction elements of the MindFolds app, focusing on how users navigate and interact with the content.

**CM**: Configuration Management

A system for controlling changes to the project, including code, documents, and version tracking in GitHub.

**AI**: Artificial Intelligence

The system within the MindFolds app automatically suggests relevant learning modules based on user interactions and learning preferences.

**MindFolds**: The microlearning app for quick and interactive learning

A platform designed to provide bite-sized, AI-suggested lessons tailored to user interests and learning styles.

1. **Reference Documents**

IEEE Standard 730-2014 for Software Quality Assurance Processes

ISO/IEC/IEEE 12207:2008 - Systems and Software Engineering – Software Life Cycle Processes

Contract between **Stylden Software Solutions** and **Bright Education Group** for the development of the MindFolds app

#### **4. Software Quality Assurance**

##### **4.1 Purpose and Scope**

The purpose of this Software Quality Assurance Plan is to ensure that the **MindFolds** app adheres to quality standards throughout its development lifecycle. The scope covers all aspects of the app's design, development, testing, and deployment, including:

* Ensuring smooth AI-driven content suggestion systems.
* Providing a seamless and intuitive user interface (UI/UX) for learning.
* Maintaining performance standards to ensure fast and responsive lesson delivery.
* Ensuring the app’s infrastructure supports future growth and scalability.

This plan applies to all teams working on the development of MindFolds, including software engineers, testers, designers, and product managers.

##### **4.2 Organizational Responsibilities**

* **Quality Assurance Team**: Responsible for creating and overseeing the testing process to ensure that all features of MindFolds meet the established requirements.
* **Development Team**: Responsible for implementing features, resolving bugs, and ensuring that the app's functionality aligns with the specifications.
* **Product Manager**: Oversees the overall progress and ensures that the product vision for MindFolds is adhered to.
* **Test Engineers**: Perform thorough testing (including UI, performance, and security testing) and report issues back to the development team.

##### **4.3 Tools**

* **GitHub**: Used for version control and maintaining the codebase.
* **Jira**: Task tracking and bug reporting tool for managing development workflows.
* **Selenium**: Used for automated UI testing.
* **Postman**: Tool for testing APIs used by the MindFolds app.
* **Jenkins**: Continuous integration tool to ensure code quality during updates.

##### **4.4 Standards, Practices, and Conventions**

* **Code Standards**: Adheres to **JavaScript**, **HTML5**, and **Swift** coding standards for iOS app development.
* **Design Practices**: Follows **Material Design Guidelines** to ensure a consistent and responsive user experience.
* **Versioning**: The app follows semantic versioning for releases: **MAJOR.MINOR.BUGFIX** format.
* **Testing Practices**: Utilizes a **Test-Driven Development (TDD)** approach to ensure all features are testable and meet the criteria before integration.

##### **4.5 Resources**

* **Development Team**: 5 Developers
* **Quality Assurance Team**: 2 QA engineers
* **Test Environment**: Local servers using **Node.js** and **Xcode** for iOS testing.

#### **5. Software Quality Assurance Activities**

##### **5.1 Product Assurance**

This section ensures that the **MindFolds** app aligns with its established requirements. Key activities include:

* **Functional Testing**: Ensuring that all user stories and features are correctly implemented, including AI suggestions and lesson delivery.
* **User Interface Testing**: Verifying that the user interface is intuitive, responsive, and accessible to the target audience.
* **Performance Testing**: Ensuring that the app loads quickly, the AI algorithm processes user interests swiftly, and there are no delays in lesson delivery.

##### **5.2 Process Assurance**

This section ensures that the processes followed during MindFolds’ development adhere to best practices. Key activities include:

* **Adherence to Development Processes**: Ensuring that the team follows the agile methodology, with regular sprint reviews, retrospectives, and planning meetings.
* **Documentation**: All code changes, feature implementations, and testing procedures are properly documented and updated in the project’s CM library on GitHub.

#### **6. Contract Review**

The contract between Stylden Software Solutions and Bright Education Group specifies that the MindFolds app must meet performance, scalability, and security standards, while also delivering an interactive and gamified learning experience. Regular contract reviews will ensure that all milestones and deliverables are met.

#### **7. SQA Records**

* **Test Results**: Collected from manual and automated tests (including UI, functional, and performance tests).
* **Bug Reports**: Stored in Jira and linked to GitHub for resolution tracking.
* **Meeting Minutes**: Notes from sprint reviews and team meetings regarding quality assurance activities.
* **Final QA Summary**: A comprehensive summary of all quality assurance activities before the app's final release.