Style Guidelines for Final Year Project ReportsSmartWebCraft

Quality Assurance Plan

Assignment No. 01

BSc. (Hons.)BS in Software Engineering

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Quality Assurance Plan

SmartWebCraft

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Submission Date: 16 March 2024

Note: Task performed by each member has been mentioned in the format [FA21-BSE-XXX] before the start of the work.

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Project Manager’s Signature

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## Introduction:

The Quality Assurance Plan for SmartWebCraft aims to ensure the delivery of a high-quality web development platform that empowers programmers to create applications with ease and efficiency. By integrating advanced technologies such as Artificial Intelligence (AI) and machine learning, SmartWebCraft sets out to revolutionize web development by offering intuitive drag-and-drop functionality, seamless integration with Bootstrap 5 & Tailwind CSS, and intelligent suggestions for UI design.

## Purpose

The purpose of this Quality Assurance Plan is to ensure the quality of the SmartWebCraft project by implementing effective strategies, procedures, and responsibilities throughout the development lifecycle.

## Scope

This Quality Assurance Plan applies to the SmartWebCraft project, encompassing all activities related to quality assurance, including testing, reviews, audits, and process management.

## Definitions, Acronyms, and Abbreviations

|  |  |  |
| --- | --- | --- |
| Abbreviations | Acronyms | Description |
| AI | Artificial Intelligence |  |
| UI | User Interface |  |
| PHP | Hypertext Preprocessor |  |
| MongoDB | NoSQL database program |  |
| CSS | Cascading Style Sheets |  |
| HTML | Hypertext Markup Language |  |
| SWC | SmartWebCraft | System to be developed |
| SEPA | Software Engineering Process Authority | Leading executing tasks |

## References

1. **Documentation Plan:** Outlines the documentation requirements for the project.
2. **Measurement Plan:** Define metrics & measurements for the project.
3. **Test Plan:** Details the testing approach and procedures.
4. **Software Development Plan:** Provides an overview of the project's development process.
5. **Problem Resolution Plan:** Describes procedures for identifying and resolving issues.
6. **Configuration Management Plan:** Outlines configuration management processes.
7. **Subcontractor Management Plan:** Defines procedures for managing subcontractors.
8. **Risk Management Plan:** Defines procedures for managing subcontractors.

## Overview

This document identifies the organization and procedures to be used to perform activities related to SmartWebCraft quality assurance program.

This Quality Assurance Plan outlines the approach, tasks, and responsibilities for ensuring the quality of the SmartWebCraft project, aiming to deliver a user-friendly, responsive, and reliable web development platform.

# Reference Document

## General Documents

1. MIL-STD-498, Software Development and Documentation
2. MIL-STD-973, Configuration Management
3. MIL-STD-1521, Technical Reviews and Audits for Systems, Equipment’s, and Computer Software
4. SPAWARSYSCEN SAN DIEGO CA Software Quality Assurance Process, Version 1.4, 9/4/97
5. SPAWARSYSCEN SAN DIEGO CA Software Quality Assurance Plan Template, Version 1.2, 8/20/97

## Technical Documents

1. SPAWARSYSCEN SAN DIEGO CA Software Engineering Process Policy, Draft, SPAWARSYSCEN SAN DIEGO CA INST zzzz.1, 11/1/96
2. SPAWARSYSCEN SAN DIEGO CA Software Quality Assurance Policy, Version 1.0, 12/10/96
3. SmartWebCraft Program Plan, 16/03/2024, SWC001\_P0

## Project Documents

1. SmartWebCraft Software Development Plan, 16/03/2024, SWC001\_P1
2. SmartWebCraft Software Configuration Management Plan, 16/03/2024, SWC001\_P2
3. SmartWebCraft Computer Resources Life Cycle Management Plan, 16/03/2024, SWC001\_P3

## Standard Documents

1. IEEE Standard for Software Quality Assurance Plans, IEEE-Std-730-1989, 17 August 1989
2. IEEE Guide for Software Quality Assurance Planning, IEEE-std-730.1-1995, 12 December 1995
3. CMU/SEI-94-HB-01, Carnegie-Mellon University Software Engineering Institute, A Software Process Framework for the SEI Capability Maturity Model (CMM), September 1994
4. CMU/SEI-93-TR-24, Capability Maturity Model for Software, Version 1.1, February 1993
5. IEEE Std 1298/A3563.1, Software Quality Management System

# Management

## Organization

Quality assurance for the SmartWebCraft project will be overseen by the Software Engineering Process Authority (SEPA), which comprises experienced professionals responsible for ensuring adherence to established processes and standards. The product evaluation will involve joint customer and developer reviews, supported by an independent test team.

## Tasks

Quality assurance tasks for the SmartWebCraft project will be integrated into the development lifecycle, synchronized with major and minor project milestones. These tasks will include:

|  |  |
| --- | --- |
| **Task** | **Details** |
| Joint Review | Regular reviews involving stakeholders to assess progress and quality. |
| Process Audits | Periodic evaluations to ensure compliance with defined processes and standards. |
| Process Reviews | Ongoing assessment and improvement of development processes based on feedback and lessons learned. |
| Customer Audits | Engaging customers to gather feedback and ensure alignment with expectations. |

## Responsibilities

|  |  |
| --- | --- |
| **Role** | **Responsibility** |
| Program Management | (1) Establishing a quality program by committing the project to implement the SPAWARSYSCEN SAN DIEGO CA Software Engineering Process Policy and the SQA Policy.  (2) Reviewing and approving the SmartWebCraft SQAP.  (3) Resolving and following-up on any quality issues raised by SQA.  (4) Identifying an individual or group independent from the project to audit and report on the project’s SQA function.  (5) Identifying the quality factors to be implemented in the system and software. |
| Project Management | (1) Implementing the quality program in accordance with the SPAWARSYSCEN SAN DIEGO CA Software Engineering Process Policy and the SQA Policy.  (2) Identifying the SQA activities to be performed by SQA.  (3) Reviewing and approving the SmartWebCraft SQAP.  (4) Identifying and funding an individual or group independent from the project to perform the SQA functions.  (5) Resolving and following-up on any quality issues raised by SQA.  (6) Identifying and ensuring the quality factors to be implemented in the system and software.  (7) Identifying, developing and maintaining planning documents such as the Program Management Plan, SDP, SCMP, Test Plans, and this SQAP. |
| Software Development | (1) Reviewing and commenting on the SmartWebCraft SQAP.  (2) Implementing the quality program in accordance with this SQAP.  (3) Resolving and following-up on any quality issues raised by SQA related to software design and development.  (4) Identifying, implementing, and evaluating the quality factors to be implemented in the software.  (5) Implementing the software design/development practices, processes, and procedures as defined in the SmartWebCraft SDP and other program/project planning documents. |
| Testing Team | 1) Reviewing and commenting on the SmartWebCraft SQAP.  (2) Implementing the quality program in accordance with this SQAP.  (3) Resolving and following-up on any quality issues raised by SQA related to software test.  (4) Verifying the quality factors are implemented in the system, specifically software.  (5) Implementing the software test practices, processes, and procedures as defined in the SmartWebCraft SDP and other program/project planning documents. |
| Logistics | (1) Reviewing and commenting on the SmartWebCraft SQAP.  (2) Implementing the quality program in accordance with this SQAP. |
| Configuration Management | (1) Reviewing and commenting on the SmartWebCraft SQAP.  (2) Implementing the quality program in accordance with this SQAP.  (3) Resolving and following-up on any quality issues raised by SQA related to software CM.  (4) Ensuring the quality factors are implemented in the software related to software CM.  (5) Implementing the software CM practices, processes, and procedures as defined in the SmartWebCraft SDP and other program/project planning documents. |
| Verification & Validation Team | (1) Reviewing and commenting on the [project name] SQAP.  (2) Implementing the quality program in accordance with the SmartWebCraft SQAP.  (3) Resolving and following-up on any quality issues raised by SQA.  (4) Verifying the quality factors are implemented in the system (hardware and software).  (5) Implementing the practices, processes, and procedures as defined for IV&V in the SmartWebCraft SDP and other program/project planning documents. |
| Software Engineering Process Office (SEPO) | (1) Keeping the SPAWARSYSCEN SAN DIEGO CA Software Engineering Process Policy and SQA Policy current.  (2) Maintaining the SQA process document and SQAP template.  (3) Ensuring SQA training availability, either by vendor or SEPO.  (4) Aiding in software process engineering and software process improvement. |
| Software Engineering Process Authority (SEPA) | 1. Responsible for implementing quality assurance tasks within their respective areas, including testing, code reviews, and adherence to coding standards. |