Hotel Management System

Software Quality Assurance (SQA) Plan 1.1

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Team Members:

Hala Ali Khan

Mahrukh

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1 Purpose

The purpose of this Software Quality Assurance (SQA) Plan is to ensure that all the requirements are fulfilled that are necessary for the production of high-quality end product and to establish the goals, processes, and responsibilities required to implement effective quality assurance functions for the Hotel Management System.

The Hotel Management System Software Quality Assurance Plan is based on the project activities and work products that provide the framework which is necessary to achieve software quality assurance throughout the project life cycle.

The Software Quality Assurance plan of the Hotel Management System establishes the goals, processes and responsibilities required to ensure the customer satisfaction, ease of use and customer convenience.

1.1 Scope

This plan covers SQA activities and processes throughout the requirement analysis, Design, Implementation, Testing and Maintenance phases of the Hotel Management System. This plan:

- Identifies the responsibilities of the project developer.
- Lists the tools, activities used throughout the project life cycle.
- Describes the SQA work products.
- Lists the reviews that are carried out during the process.
- Ensures software development standards are documented and followed.

1.2 Project Summary

Hotel Management Information System keeps record of hotel guests and has facilities for booking, making registrations, ordering food and generating of bills and entering room hotel rates etc. Manual systems have limitations, like space to store data and low working speed. Tasks like updating and deleting of the records, make registers paper consuming, untidy. Searching of person’s data in the manual register is very slow and. Therefore, Hotel Management System (HMS) has been developed to overcome the limitations of manual system. HMS software using hypertext markup language as front-end tool and Oracle database as backend. The developed software (HMS) is influential in computerizing the work related to hotel. The HMS software provides information about the services provided, including room, employee, food, bill, customer and charges details.

The aim of this project is to develop day to day record of customers, dining in and reserving hotel rooms. The system is designed for:

- Computerizing all details regarding customers and hotel.
- Computerizing reservation of tables and booking of rooms
- Handling the revenue of the hotel by keeping the record of billing
- Maintaining the record of the staff
- Displaying Menu items and pricing for customers

2 Reference Documents

The following documents were used or referenced in the development of this plan:

1. < Hotel Management System > Project Plan 1.0
2. < Hotel Management System > SQA Plan Report 1.0
3. < Hotel Management System > Software Requirement Specification Document 1.0
4. < Hotel Management System > SRS Inspection Report 1.0
5. < Hotel Management System > Software Design Document 1.0
6. < Hotel Management System > Test Plan Document 1.0
7. < SQA Plan Template IEEE >

3 Quality Goals and Expectations

Quality goals ensure management of data which is important for product quality and if the developed software compiles with the standard quality assurance. The quality measures for this project are as follows:

- **Functionality:**

The websites' ability to satisfy its main functional requirements makes it functional.

- **Reliability:**

The recoverability of the website to continue functioning under unusual circumstances or after a failure ensure its reliability.

- **Performance:**

The response and recovery time of the website in case of heavy traffic determines its performance.

- **Usability:**

It ensures the customer satisfaction and how easily the customer can understand the GUI of the website.

- **Security:**

It ensures that the valuable data of the customers and employees is secure and safe from cyber-attacks

4 Software Reviews

4.1.1 Purpose

This section identifies the number and type of reviews and engineering peer reviews that will be performed. It describes the artifact types to be reviewed as well as the format of the reviews that will be conducted. These reviews have been scheduled on the WBS and accounted for in project planning.

The purpose of the software review is to remove the defects in the final product by making the testing process time and cost effective.

The software reviews performed on the website are listed below:

4.1.2 Software Peer Reviews:

The author of the work product along with some other developers performs the software peer review to check the technical content and quality of the product. The purpose of the peer review is to ensure the quality of the end product by removing the defects which is done by 0another member of the team.

4.1.3 Software Management Review:

Management reviews are conducted by the management professionals. Management reviews uncover plan consistency and variances and evaluate work status.

4.1.4 Software Audit Review:

A software audit review is a sort of software review in which one or more auditors who are not members of the software development organization examine a software process to ensure that it complies with requirements. Software auditing also ensures that testing and quality assurance remain on track.

4.2 Review Schedule

Supervisors and the review team examine all deliverables produced throughout each phase of Hotel Management System development. At the end of each phase, the review team inspects each artifact and provides comments on the software prototype as well as ideas for any modifications or additions to the requirements specification. The inspectors will evaluate the requirement definition, architectural design, and implementation artifacts before submitting a formal report based on their findings. The review leader determines the timetable for examining each artifact and the date/time for submitting their inspection/review report.

REVIEW SCHEDULE

S.NO	Date/Time	SQA Tasks	In Charge	Description	Output
1	26 June, 2022/ 2:00 AM	– Evaluate project planning, tracking and oversight processes	Hala	– Software Specification Review – Estimation, Master Schedule and Project Plan Review	SQA Plan report
2	20 July, 2022/ 1:00 PM	– Review requirement analysis	Hala	– Review the software requirement specification document	SRS Inspection/Audit Report
3	2 August, 2022/ 4:00 AM	– Review and Evaluate Software Design	Hala	– Review the Design document	DDR Report
4	10 February, 2022/ 3:00 PM	– Testing and Evaluating Source Code	Mahrukh	– Review the software test planning and procedures	Test Plan Report

5	1 March, 2022/ 8:00 PM	– Review Quality of each process	Mahrukh	– Process Audit/Inspection: Final Release – Review and ensure standards for each process	SQA Plan Report

4.2.1 Artifact 1

In reference [1], the Software Plan Document of Hotel Management System for which schedule No.1 review procedures will be followed. The SQA Plan Report for software planning document is also referred in reference [2].

4.2.2 Artifact 2

In reference [3], the Software Requirement Specification document of Hotel Management System is referred for which schedule No.1 and 2 review procedures will be followed. The inspection report for SRS document is also referred in reference [4] along with its checklists.

5 Test

Software Testing is responsible for verifying, implementing the software test practices, processes, and procedures as defined in Hotel Management System requirement and design documents. Software testing assures the quality of software and validates the other phases of software like specification, design, code generation etc.

5.1 Purpose

This section defines the types of testing and the scope of testing activities for this software development. Testing shall include both developmental testing as well as acceptance level testing. Since our software is a website so all the tests mentioned here are basically for a web-based application. For each type, the scope of testing is defined as well as the responsible parties.

5.2 Functionality Testing

5.2.1 Scope

This type of testing covers all the software specifications. It covers the technical functionalities but nonfunctional Testing includes Performance, Reliability, Security, Scalability, and Usability. The topmost priority for the success of a website is that its functionality across web pages, forms, database connection, and call-to-action forms should all work seamlessly.

5.2.2 Testing Description

Validations across all field, default value checking, along with cookies testing should be taken up to deliver great user experience all along the website. Optimizing websites for search engines and HTML/CSS validations should be taken up. Various form filling options should be checked and tested to ensure the forms are easy to fill and navigate. Functional testing can be done by following the mentioned steps: Understand user needs and pain points, create a test plan, write a test case, execute test case and measure results and perform regression testing.

5.2.3 Responsible Party

The developers and the testers shall be doing the functional testing by using UFT. Unified Functional Testing (UFT), Tricentis Tosca, SOAP UI and selenium tools.

5.3 Web Usability Testing

5.3.1 Scope

Today's customers need smooth sailing all along the website and web apps to ensure the users get a great user experience while navigating all along. Our website should be easy to navigate, popups and messages should be clear with tooltips if needed, and the website should be consistent enough to attract and retain the visitor. Content all along the different pages of the website should be clear, concise, and meaningful to entertain visitors.

5.3.2 Testing Description

Usability testing is the practice of testing how easy a design is to use with a group of representative users. It will involve observing users as they attempt to complete tasks and can be done for different types of designs. It can be conducted repeatedly, from early development until a product's release. In a usability-testing session, a researcher (called a "facilitator" or a "moderator") will ask a participant to perform tasks, usually using one or more specific user interfaces. While the participant completes each task, the researcher observes the participant's behavior and listens for feedback testing.

5.3.3 Responsible Party

Usability experts with the user-experience of web-based application come up with a usability test strategy based on the type of users, demographics, key business scenarios, etc. The team will identify a set of appropriate users, draft survey questions and help the targeted users complete the survey.

5.4 Interface Testing

5.4.1 Scope

It is focused on examining visual and structural parts of our software i.e., parts the user would be concerned with, rather than the internal logic of the software including the available rooms,

reserving room. UI Testing covers the gamut of visual indicators and graphic-based icons – toolbars, fonts, menus, text boxes, radio buttons, checkboxes, colors, and more.

5.4.2 Testing Description

It is important to test whether all interactions between the app server and the webserver run smoothly. Effectively, compatibility of the software, hardware, network and the database should be tested to check if all the interactions work unified. Interface testing can be done by using selenium tool as selenium automates web browser Interaction, where test scripts are written to perform different user actions on the web application UI. This makes Selenium apt for UI Testing along with cross browser testing since it can perform the same tests on different browsers and browser versions

5.5 Website Compatibility Testing

5.5.1 Scope

The compatibility of the website across different browsers, operating systems, and mobile browsing options should be taken into consideration. Browser compatibility testing using cross browser automated web application testing tools should be taken up.

5.5.2 Testing Description

Cross browser compatibility testing is a non-functional form of testing, which emphasizes on availing your website's basic features and functionality to users on different browser-OS combinations, devices, and assistive tools. It is essential to run the browser compatibility tests to check if the web app performs well across browsers such as IE, Chrome, Firefox, Safari, Opera, etc. and also should also be compatible across operating systems such as Windows, Mac, Linux, etc.

5.5.3 Responsible Party

Given below is a list of all cross-browser compatibility testing tools available online for testing websites on multiple browsers.1) TestComplete 2) LambdaTest 3) CrossBrowserTesting.

5.6 Performance Testing

5.6.1 Scope

Today’s effective performance testing helps to get a first-hand information about the website’s scalability and its performance stability with any third-party products such as servers and middleware if any.

5.6.2 Testing Description

The other most important factor for your websites and web applications is that they should deliver flawless performance even under loads. Effective web load testing and web stress testing should be taken up by next-gen performance testing provider to ensure your websites deliver great user experience even when numerous users access the same page.

5.6.3 Responsible Party

Performance testing must also be part of the developer testing process, early in the development cycle.

6 Problem Reporting and Corrective Action

This section defines the problem reporting process and corrective action procedure to be used by Cinemax Theatre systems.

Problem Name	Problem Description	Corrective Actions Necessary
Necessary information about the problem that the program is supposed to solve has been left out of the requirements document or is incomplete.	As we are developing online Hotel Management system, that system must show List of available rooms to the customer so they can easily search for the rooms.	We added this option “List of available Rooms” for customer ease.
Login form issues	Problem we encountered was our little inexperience with programming language PHP and MySQL.	We watched YouTube videos to learn how to connect database with website to store login data
Database Connectivity	We used wamp server with port 80 which lead us to connectivity issues.	We switched to xamp server and used port 8080 instead of port 80 which enabled the connection.

7 Tools, Techniques and Methodologies

SQ personnel will require access to the following:

Tool Name	Version	Purpose
Microsoft Office tools (i.e., Word, Excel, and PowerPoint)	Office 13	Used for the general documentation.

VS Code	10	It helps to achieve the performance requirements and to make the front end of the website.
Microsoft SQL Server	12.1. 0.1	Database web sites with Microsoft SQL Server are built to give quick, dependable, and scalable data storage. It is expert in website building that requires big amounts of data, data management, data processing, reporting/exporting, and work flow management.
Microsoft Access	2019	The user will use this tool to access the database and to execute queries
Star UML	5.0.1	We used this tool to generate our system's use case, sequence, activity, and class diagrams. It is essentially a software design tool that aids us in the visual modelling and component creation of our website.

8 Configuration Management

Revision History:

Version	**Date**	**Change Log**
1.0	12 March 2022	

1.1	17 June 2022	We have enhanced our Login/ Signup page by embedding recommender system. Customer will be asked about their taste before signing up their account, then they will be shown the items of their interest.