D7 Auto Service Center Web-App

**Test Plan**

**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Version | Author | Description |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Approvers List**

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Role | Approver / Reviewer | Approval / Review Date |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Reference Document**

|  |  |  |
| --- | --- | --- |
| Version | Date | Document Name |
|  |  |  |
|  |  |  |

**TABLE CONTENTS**

[1. INTRODUCTION 4](#_Toc144573358)

[1.1. Purpose 4](#_Toc144573359)

[1.2. Project Overview 4](#_Toc144573360)

[1.3. Audience 5](#_Toc144573361)

[2. TEST STRATEGY 6](#_Toc144573362)

[2.1. Test Objectives 6](#_Toc144573363)

[2.2. Test Assumptions 6](#_Toc144573364)

[2.3. Test Principles 6](#_Toc144573365)

[2.4. Data Approach 6](#_Toc144573366)

[2.5. Scope and Levels of Testing 6](#_Toc144573367)

[2.5.1. Exploratory 6](#_Toc144573368)

[2.5.2. Functional Test 6](#_Toc144573369)

[2.5.3. User Acceptance Test (UAT) 8](#_Toc144573370)

[2.6. Test Effort Estimate 8](#_Toc144573371)

[3. EXECUTION STRATEGY 9](#_Toc144573372)

[3.1. Entry and Exit Criteria 9](#_Toc144573373)

[3.2. Test Cycles 11](#_Toc144573374)

[3.3. Validation and Defect Management 11](#_Toc144573375)

[3.4. Test Metrics 11](#_Toc144573376)

[3.5. Defect tracking & Reporting 11](#_Toc144573377)

[4. TEST MANAGEMENT PROCESS 12](#_Toc144573378)

[4.1. Test Management Tool 12](#_Toc144573379)

[4.2. Test Design Process 12](#_Toc144573380)

[4.3. Test Execution Process 12](#_Toc144573381)

[4.4. Test Risks and Mitigation Factors 12](#_Toc144573382)

[4.5. Communications Plan and Team Roster 12](#_Toc144573383)

[4.6. Role Expectations 12](#_Toc144573384)

[4.6.1. Project Management 12](#_Toc144573385)

[4.6.2. Test Planning (Test Lead) 12](#_Toc144573386)

[4.6.3. Test Team 12](#_Toc144573387)

[4.6.4. Test Lead 12](#_Toc144573388)

[4.6.5. Development Team 12](#_Toc144573389)

[5. TEST ENVIRONMENT 14](#_Toc144573390)

[6. APPROVALS 15](#_Toc144573391)

# INTRODUCTION

## Purpose

Plan for testing: Set the foundations for testing. Define the basics of the project (scope, dates, and goals) and set up a good testing environment. This includes deciding how to start and end tests, making accurate test cases, laying out jobs, making schedules, and making the data plans.

Execution Strategy: Plan for how the tests will be done. Describe how problems are found, written down, and reported, as well as the steps to fix them. This shows how important it is to handle problems well.

Strategy for Testing: Sets up the basics for testing. We'll outline the most important parts of the project (scope, dates, and goals) and set up a solid testing environment. This means making rules for how tests should start and end, making precise test cases, outlining jobs, making schedules, and putting data strategies into place.

Test Management: Set up the process of testing. Define the team's roles and how they will communicate, escalate, and deal with risks. With this structure, testing is kept organized and flexible.

By including the Test Strategy, the Execution Strategy, and the Test Management, our plan makes sure that we test [Module/System Name] in [Project Name] well. We want to make sure the project is good and reliable while also meeting the project's larger goals.

## Project Overview

The goal of the "D7 Auto Service Center Web-App" project is to create a management tool for the auto repair business D7 Auto Service Center, which specializes in vehicle maintenance and repair. The project was initiated to assist D7 with their challenges in keeping up with how they could convince customers to use their services. The project's goal is to enhance their existing advertising methods by adding an online presence platform. The Elite Four group of BSIT-MI students from Asia Pacific College made this project for their PBL (Project Based Learning) course.

## Audience

The Project team members are appointed with tasks to perform based on their roles and responsibilities which are shown in this documentation, The project team is also tasked with providing unbiased input and recommendations which can help improve the quality of the system.

1. **Project Manager** – in charge of planning and going over the project schedule, as well as the project documentation and testing tasks. They keep track of how well tests are doing based on jobs that have been given to them, approve documents, and are responsible for the project's results.
2. **Business Analyst** – in charge of gathering and refining requirements, assisting in planning, and designing testing activities, and acting as the communication bridge between stakeholders and the testing team. They also maintain documentation against business requirements, manage defects and modifications.
3. **Testing Team –** responsible for executing tests and assessing the software or system to identify issues and ensure its quality and functionality.
4. **Technical Team** - make environment and test plan and deliverables align with the design, provides the testing environment, and adheres to the established procedures for problem modification.

The stakeholders may have representatives to take part in testing, including User Acceptance Testing (UAT), to confirm that the system meets business requirements and also offer clarifications to the testing team if necessary and assess the test results.

# TEST STRATEGY

## Test Objectives

## Test Assumptions

**Key Assumptions**

1. All the necessary documentation will be provided to help the testing team be familiarized with the system.
2. The testing team will be provided with appropriate testing software and tools.
3. The development team will allot time for regular meetings with the testing team.
4. The system is ready for testing.

**General**

1. Delays might occur during testing.
2. The testing team is considering doing performance testing.
3. All the defects would come along with a snapshot JPEG format.
4. The Test Team assumes all necessary inputs required during Test design and execution will be supported by the Development team.
5. Test case design activities will be performed by the test team.
6. The same will be informed to test team prior to start of Defect fix cycles.
7. The project manager will review and sign-off all Test cases prepared by the Test Team prior to the start of Test execution.
8. Any defect fixes planned will be shared with the Test Team prior to applying the fixes on the Test environment.
9. The Project Manager will review and sign off all test deliverables.
10. The project will provide test planning, test design and test execution support.
11. The test team will manage the testing effort with close coordination with the dev team.
12. Project team has the knowledge and experience necessary, or has received adequate training in the system, the project, and the testing processes.
13. The testing environment might experience some downtime during the test due to outages or defective fixes.

## Test Principles

## Data Approach

The primary objective of the data approach within the test plan is to ensure the correct and secure operation of the web application while managing data associated with auto service center operations. Pre-loaded data will be available for functional testing, and this approach entails gaining a comprehensive understanding of the data encompassed by the web application, including customer information, reservation details, vehicle records, and user interactions. Furthermore, it involves the identification of key data entities, their associated attributes, and their relationships within the application's data structure.

## Scope and Levels of Testing

### Exploratory

### Functional Test

**PURPOSE:** Functional Testing will be performed to check and verify the different features of the D7 Auto Service Center Web-App. This testing will be conducted by providing inputs to the system and validating the output from the systems.

**SCOPE:** The scope of the functional testing for D7 Auto Service Center Web-App are based on the functional requirements outlined in the project documentation and different features of the system, including but not limited to:

1. Registration
2. Login
3. Reservation System
4. Support Tab
5. Chat System
6. System Administration

The scope also includes browser and device compatibility testing to ensure optimal user experience.

**TESTERS:** Testing Team.

**METHOD:** The test will be performed according to the functional requirements outlined in the project documentation for D7 Auto Service Center Web-App.

TIMING: After exploratory test is completed.

**TEST ACCEPTANCE CRITERIA:**

1. All the features and functionalities that were outlined in the system documentation, including the product backlog and use case have been successfully implemented according to the given requirements.
2. Development is done including the unit testing that have been done and passed.
3. Test strategy and planning must be accepted and signed by the necessary personnel.
4. There are no significant problems or flaws present in the application prior to its release.
5. The hosting of the system has been hosted without significant issues or disruptions.

**TEST DELIVERABLES:**

List of test deliverables under the Functional Testing, including but not limited to:

1. Test Plan
2. Test Case
3. Test Data
4. Test Environment
5. Test Execution Logs (daily/weekly status report)
6. Defect Reports
7. Test Summary Report
8. Test Closure report

**MILESTONE LIST**

Following are the milestone lists in functional testing, including but not limited to:

1. Completion of Test Planning
2. Setting up testing tools and testing environments
3. Executing the functional testing
4. Creation of User Acceptance Testing (UAT).
5. Test Completion
6. Test Review and Approval
7. Test Closure

### User Acceptance Test (UAT)

**The User Acceptance Test (UAT)** is a crucial step that checks to see if the system matches business theory. It gives the end users their last chance to look over the system carefully before it goes live, making sure it meets their practical needs well.

**Testers**: End users, including people from the L1, L2, and L3 user groups, do the UAT.

**Method:** The UAT is a joint process that considers the unique knowledge of business users about their specific needs and how the system meets them. The test team makes UAT test cases based on what End Users (Levels 1, 2, and 3) and Business Analysts tell them. This method allows for thorough validation that sometimes goes beyond scripted situations to meet the needs of different businesses.

**Timing**: The User Acceptance Test is done after the Exploratory and Functional Testing phases have been finished successfully. Its completion is a key step, because the product cannot go to final release until it passes UAT.

**During the User Acceptance Testing phase**: we want to make sure that the system not only meets functional requirements but is also in line with complex business logic. This will allow end users to use the system with trust and efficiency.

**TEST DELIVERABLES:**

List of test deliverables under the Functional Testing, including but not limited to:

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Deliverable Name** | **Author** | **Reviewer** |
| 1. | UAT Test Cases | Test Team | Business Analyst’s Sign off |
| 2 | UAT Test Plan | Test Team | Business Analyst’s Sign off |
| 3 | Test Data | Test Team | Business Analyst’s Sign off |
| 4 | Test Environment | Test Team | Test Lead |
| 5 | Test Logs and Reports | Test TeamT | Business Analyst’s Sign off |
| 6 | Defect Reports | Test Team | Business Analyst’s Sign off |
| 7 | UAT Test Summary Report | Test Team | Business Analyst’s Sign off |

## Test Effort Estimate

# EXECUTION STRATEGY

## Entry and Exit Criteria

The following entry criteria are the desirable conditions to be able the testing team to start the testing activities according to the phases:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Phase: | Entry Criteria: | Test Team: | Technical team: | Notes: |
| **Requirement Analysis** | Documentation Requirements of the system encompassing both functional and non-functional requirements. |  |  |  |
| Documentation for Design and Analysis |  |  |  |
| User stories and acceptance criteria document |  |  |  |
| **Test Planning and Control** | Requirement Analysis |  |  |  |
| Document assessing the feasibility of test automation |  |  |  |
| Requirements traceability matrix (RTM) |  |  |  |
| **Test Case Development** | Requirements document |  |  |  |
| RTM |  |  |  |
| Test Plan |  |  |  |
| Analysis Report for automation |  |  |  |
| **Test Environment Setup** | Plan for environment setup plan |  |  |  |
| Source Codes and system design documentation |  |  |  |
| **Test Execution** | Test data |  |  |  |
| Working testing Environment |  |  |  |
| Requirements Traceability Matrix (RTM), test plan, and test scripts are ready and accessible. |  |  |  |
| **Test Closure** | Results of testing |  |  |  |
| Completed Testing |  |  |  |
| Logs for defects |  |  |  |

The following exit criteria are the desirable conditions that need to be met in order to proceed with the implementations of the system:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Phase: | Exit Criteria: | Test Team: | Technical team: | Notes: |
| **Requirement Analysis** | Signed Requirements Traceability Matrix (RTM) |  |  |  |
| **Test Planning and Control** | Approved test plan strategy |  |  |  |
| **Test Case Development** | Test cases and automation scripts have been thoroughly reviewed and approved. |  |  |  |
| Test data has also undergone review and approval. |  |  |  |
| **Test Environment Setup** | Completed Test Data that has already setup |  |  |  |
| Testing environment established in accordance with the specified criteria. |  |  |  |
| **Test Execution** | All the planned tests have been executed according to the requirements. |  |  |  |
| Defects logged |  |  |  |
| **Test Closure** | Test closure report signed off by clients. |  |  |  |

***Note: mark the necessary criteria if met accordingly.***

Entry and exit criteria are flexible standards which if they aren't met, the testing team evaluates the risks, suggests solutions, and informs the project manager and the development team’s representative for a final decision on whether to proceed or not.

## Test Cycles

## Validation and Defect Management

During our tests, we want to make sure everything works as it should. Our test plans will be followed by the testers. But sometimes they find things that we did not expect. Business Analysts help with the second round of testing because they know a lot about how things should work. If we find something new, we will make a note of it and change our plans.

We will use a tool called HP ALM to keep track of these problems. Our Technical Team will check it every day and might ask the person in charge of bugs for more information. They will also try to fix the issues.

Everyone does the following:

* **Testing Team:** They identify problems, make sure they are linked to the right test, and check to see if they have been fixed.
* **Development Lead:** They decide how important the problems are, talk to the Technical Team about how to fix them, and make sure testing goes well.
* **Technical Team:** They look at HP ALM every day, seek more information if they need it, fix the problems, and let the Defect Manager know when they are done.

By doing these things, we make sure that any problems we find are fixed the right way. This ensures that the method works well for everyone.

Below is the category that will be used to classify the defects that will be found during testing:

|  |  |
| --- | --- |
| **Severity** | **Impact** |
| 1 (Critical) | * This bug may cause the system to crash, may lead to data loss or even corrupt existing files. * This bug may render the system unusable which may damage the system. * Requires immediate attention and action. |
| 2 (High) | * This bug may have an impact on the overall performance of the system. * This may cause the system to have a downgrade in its quality or usability. * Requires immediate attention. |
| 3 (Medium) | * This bug has a moderate impact on the functionality of the system. * This bug may cause minor inconveniences to the user or may affect non-core functionalities. * Does not require immediate attention. |
| 4 (Low) | * There is an insufficient or unclear error message, which has minimum impact on system functionality. * Minor to no impact on user experience. |

## Test Metrics

## Defect tracking & Reporting

# TEST MANAGEMENT PROCESS

## Test Management Tool

## Test Design Process

## Test Execution Process

The testing team will utilize testing tools at different phases of the software testing life cycle. The mentioned testing tools serve to streamline various testing procedures, covering User Acceptance Testing, Functional Testing, Performance Testing, and other important activities within the field of software testing.

The main emphasis of the testing team will be on functional testing, which will be accomplished through using TestLink, a test management tool that is open source in nature. TestLink plays a crucial role in the organization of test plans, strategies, and executions. The system offers a centralized framework that facilitates collaboration across the entire software testing life cycle, streamlining progress monitoring and guaranteeing the quality of software testing activities.

Each member of the team will be provided with access to TestLink, enabling them to effectively generate, organize, and oversee test cases in accordance with the predetermined test plan. By utilizing this tool, the execution process of the software testing life cycle will be optimized, enabling the team to efficiently document outcomes and effectively monitor the advancement.

In addition, the testing team will utilize Selenium, a test automation tool that is open-source and well-suited for automating web applications. The team will utilize Selenium-IDE, an Integrated Development Environment (IDE) plugin that provides a Graphical User Interface (GUI) that is easy for users to navigate. This integrated development environment (IDE) functions seamlessly with popular web browsers such as Mozilla Firefox and Google Chrome, allowing for the tracking of user actions and input values. The utilization of Selenium-IDE can prove to be a valuable resource for the testing team in the process of verifying the alignment of specific functions with the project requirements.

This approach guarantees a thorough and effective software testing procedure by leveraging the capabilities of TestLink and Selenium-IDE to optimize test case management and automation.

## Test Risks and Mitigation Factors

## Communications Plan and Team Roster

## Role Expectations

### Project Management

### Test Planning (Test Lead)

### Test Team

The Test Team is responsible for evaluating the software to identify defects/ bugs. They will also verify if the software meets the requirements and ensure that it is fully functional. Below is the expected role of the test team:

* Review and understand project requirements thoroughly to create a test plan that covers all aspects of the software.
* Execute test cases, document test results, and report defects following the established test plan.
* Create test cases, test scripts, and test data that cover different scenarios and use cases.
* Log and track defects, communicate issues to the development team, and verify fixes.
* Maintain detailed documentation of test cases, test results, and any issues discovered.
* Develop a comprehensive test strategy and test plan that outlines the scope, objectives, resources, schedule, and deliverables.

### Test Lead

### Development Team

The Development Team is the representative of the D7 Auto Service Center Web-App who are working with the testing team. Their main responsibility is to facilitate communication and teamwork between the development and testing teams. The following are the functions of the representative of the development team:

* Evaluate testing deliverables created by the testing team and provide insights in a timely manner.
* Aid supports the project's development and testing processes.
* Help in validating the results of some testing if required by the testing team.
* Clarify any uncertainties or inquiries that the testing team may have with regard to the software's requirements or design. This makes sure the testing team understands what exactly must be validated.
* Provide test data and scenarios.
* Assist in setting up some testing environment that the testing team will be utilized.
* When the testing team determines defects (bugs) during testing, the representative of the development team can help the testing team understand the source of the issues and work with developers to prioritize and resolve them.

# TEST ENVIRONMENT

# APPROVALS

|  |  |
| --- | --- |
| Signature: |  |
| **Name:** |  |
| **Role:** |  |
|  |  |
| **Date:** |  |

|  |  |
| --- | --- |
| Signature: |  |
| **Name:** |  |
| **Role:** |  |
| **Date:** |  |

|  |  |
| --- | --- |
| Signature: |  |
| **Name:** |  |
| **Role:** |  |
|  |  |
| **Date:** |  |

|  |  |
| --- | --- |
| Signature: |  |
| **Name:** |  |
| **Role:** |  |
| **Date:** |  |