

Verification and Validation Report: Sayyara

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1 Revision History

Table 1: Revision History

Date	Developer(s)	Change
February 22, 2023	Arkin Modi	Add Automated Testing Section
March 3, 2023	Joy Xiao	Add Tests Evaluations for Legal and Cultural Requirements
March 4, 2023	Leon So	Add Introduction

2 Symbols, Abbreviations and Acronyms

symbol	description
CD	Continuous Deployment
CI	Continuous Integration
PWA	Progressive Web Application
SRS	Software Requirements Specification
T	Test
VnV	Verification and Validation

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3 Introduction

3.1 Project Summary

Sayyara is a Progressive Web Application (PWA) which acts as a single platform for independent auto repair shops and vehicle owners. This platform allows independent auto repair shops and vehicle owners to interact in various ways. Using Sayyara, vehicle owners can search for auto repair shops and services based on a variety of search filters; request quotes for service; book, view, and manage service appointments. On the application, auto repair shop owners have full shop management capabilities such as: adding and managing a list of employees; managing a list of service types and corresponding service appointment availabilities; managing store information such as location, hours of operation, and contact information. Auto repair shop owners and employees will be able to manage quotes, service appointments, and work orders from a single application.

3.2 Purpose of Document

This document outlines the validation and verification process for the application, Sayyara, and a detailed summary of results for the planned tests defined in the [VnV Plan](#).

3.3 Scope of Testing

As defined in the [VnV Plan](#), the tests reported aim to verify and validate functional and nonfunctional requirements listed in the [SRS](#).

In addition, the testing reported in this document aims to validate that the application provides adequate usability and to verify that system is in a functional state for the end users. The testing and validation will aid in ensuring that the product fulfills the system requirements, intended use, and goals of stakeholders.

4 Functional Requirements Evaluation

5 Nonfunctional Requirements Evaluation

5.1 Usability

5.2 Performance

5.3 Cultural Requirements

1. NFRT-CR1-1

How test will be performed: The testers will go through end to end tests for the entire program and will confirm that any texts or images are not offensive.

Results: Passed. Manually tested to verify that there are no offensive images or text.

2. NFRT-CR2-1

How test will be performed: The testers will go through end-to-end tests for the entire program and will confirm that the text displayed is in English.

Results: Passed. Checked that everything is written in English in the implementation, documentation, and anything visible to the user.

5.4 Legal Requirements

1. NFRT-LR1-1

How test will be performed: The testers will go through the source code of the project and project documents to determine if any open source resources were used and check that appropriate credits and/or copyright licenses are used.

Results: Passed. Checked the MIT License requirements and that the project adhered to all the requirements.

6 Unit Testing

7 Changes Due to Testing

[This section should highlight how feedback from the users and from the supervisor (when one exists) shaped the final product. In particular the feedback from the Rev 0 demo to the supervisor (or to potential users) should be highlighted. —SS]

8 Automated Testing

All automated testing was carried out by Jest, a JavaScript testing framework. Each module has its own corresponding test file located within the “test” folder. The “test” folder has the same structure as the “src” folder, creating a one-to-one mapping of a module and its corresponding test. For example, the module “src/server/services/userService.ts” has its tests located in “test/server/services/userService.ts”. There are two Jest test runs, with the only difference being whether the testing environment is connected to a real database or not (i.e., whether the database needs to be seeded or mocked in each test case). As part of the CI/CD pipeline, the full test suite is run and information regarding pass/fail and code coverage is reported on every pull request to the main branch and to every push to the main branch.

9 Trace to Requirements

10 Trace to Modules

11 Code Coverage Metrics

12 Appendix

12.1 Reflection

The information in this section will be used to evaluate the team members on the graduate attribute of Reflection. Please answer the following question:

1. In what ways was the Verification and Validation (VnV) Plan different from the activities that were actually conducted for VnV? If there were differences, what changes required the modification in the plan? Why did these changes occur? Would you be able to anticipate these changes in future projects? If there weren't any differences, how was your team able to clearly predict a feasible amount of effort and the right tasks needed to build the evidence that demonstrates the required quality? (It is expected that most teams will have had to deviate from their original VnV Plan.)