AUTO-WARE AUTOMATION

Version 1.0

Group Members:

- ***18124525*** *– Smit Patel*
- ***18103500*** *– Arya Shah*
- ***18103490*** *– Shivam Patel*

SOFTWARE REQUIREMENT SPECIFIACTION (SRS)

1. Introduction

"Auto-ware Automation" is to avail a digital platform to various service stations and facilitate them to increase customer engagement and to benefit them in handling the business

1.1 Purpose

The manual approach followed by certain service stations that have certain drawbacks and that impedes their business. First and foremost, there is no track record of the customers rather it is only dependent on their own memory. Another drawback of such convectional approach is that customer retention also becomes difficult as there is no communication between the customer and service provider. Finding out the statistical data manually is also time consuming and difficult and without that further contemplation on devising new plans or strategies is not possible. The proposed system is made keeping the interest of the service stations having the enough skills similar to that of an authorized service point but do not have any digital support or have and alliance/establishment by the vehicle manufacturer brand. Hence certain features are incorporated in system like track of each service and user details, and automated management system to increase efficiency and automated intimations to their customers and also provides statistical reports. Moreover, on customer side the customer gets the intimations related to service and can also view the track record of the services of his own vehicle. Thus, this harmonizes the relation of the customer with the service persons and their work.

1.2 Product Scope

This system projects to the domain of the vehicle service providers and their customers. To increase communication between them and to increase the efficiency of work on day-to-day basis.

1.3 Definitions, Acronyms, and Abbreviations

SRS – Software Requirements Specification

End users – The people who will be actually using the system

QR code: Quick Response code (A QR code is a type of matrix barcode which contains information attached to the product/service or person).

IEEE standard: Institute of Electrical and Electronics Engineers standard

The SRS is organized into two main sections. The first is The Overall Description & the second is the Specific Requirements. The Overall Description will describe the requirements of the *Auto-ware Automation* from a general high-level perspective. The Specific Requirements section will describe in detail the requirements of the system.

2. Overall Description:

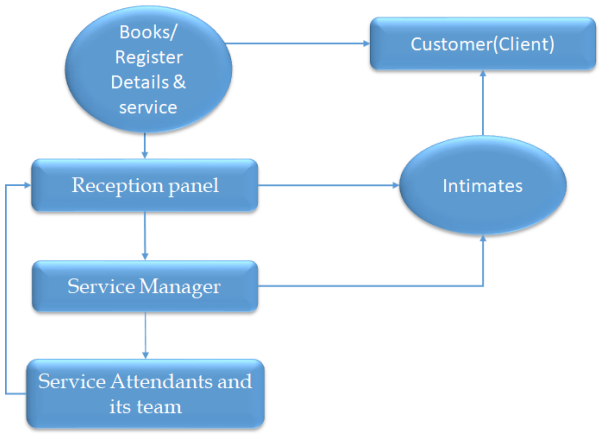
2.1 Product Perspective

The Auto-ware Automation is a replacement to the conventional/manual approach which was carried out by the service stations for management and administration. It the digitalization of the processes involved at a service station like administration, management, Audits, Customer communications, etc. The system should also increase the communication with the respective service station and the customer.

2.2 Product Functions:

- On customer side:
  - ✓ The app would let customer, intimate about the services and view previous history of the services and its details
  - ✓ It will also intimate about future services and also book services.
- On Service station side:
  - ✓ System will automatically manage its services persons.
  - ✓ It will trigger intimations to the customers about and bills and next service.
  - ✓ System will be able to view service history of all the customers
  - ✓ System will be able to register new customers, their vehicles and their services and create job-cards(receipt).
  - ✓ The service persons will be able to modify the job-cards if new components (spare parts) are added.
  - ✓ System can also fetch out various statistical reports such services carried out at various time spans, customer retention rate, total profit booked based on the time span and view rating reports.

- System Flow Diagram:



2.3 User Classes and Characteristics

Service Manager: To view reports and view management.
Service Persons: To edit Job card details and intimate about service completion
Reception Panel: To register the user, vehicle and service details
Customer: To view or track services and its details.

Educational level of Auto-ware Automation mobile application – Low
Experience of Auto-ware Automation mobile application – None
Technical Expertise – Little

2.4 Operating Environment:

This application is designed to work on android devices only and will require internet connection to operate as well as camera to detect QR code.

2.5 User Documentation:

The necessary user guide will be prevalent in the application help section itself and will be updated on every application update with necessary user instructions. The user manual will meet the IEC/IEEE 82079 legal standard.

2.6 Assumptions and Dependencies

- QR code generator and scanner to transfer the registration details.
- The service station owner can mail customer, will be able to send notification to customer for upcoming service.

3. External Interfaces

The application will be used on an android device running on android version 6.0 or above.

3.1 User Interfaces

The User Interface Screens are described in table 1.

Table 1: Auto-ware Automation User Interface Screens:

Screen Name	Description
Login	Log into the application as a user or service station owner and persons.
Sign Up	Sign up for the customers and Service station owners and its persons
Forgot Password	Reset your password using a onetime password (OTP).
Registration Activities	Entering details of customer, vehicle and service. (using QR code)
Viewing Services (for service manager and customer.)	To view service track record of the vehicles (pending/processing/completed).
Reports	To view the reports.
View Job-cards	To display the details of the service and customer including the bill and the components.
Manage component items	To edit, add, delete spare-parts and other service related components
Notifications	Intimation to be viewed on registered email and phone number.

3.2 Software Interfaces

The application shall interface with a Firebase/SQLite database and will communicate with camera to capture QR code and supporting libraries to generate and read QR code as well. Internet connection is required to send and receive email and notifications.

3.3 Hardware Interfaces

The system shall run on any device running on Android 6.0 or newer, having minimum ram of 256 MB and storage space required will be at least 35 MBs and must have an integrated camera.

3.4 Communication Interfaces

The system must communicate with customers emails and SMS's for which certain library support is required (android.net library and android.telephony library).

4. System Requirements

4.1 Functional Requirements

1. Login / Registration
   1.1. The application shall store the customer's personal data.
   1.2. The application shall store the customer's first name.
   1.3. The application shall store the customer's last name.
   1.4. The application shall store the customer's email and phone for further communication.
   1.5. The application shall store the customer's vehicle profile.
   1.6. The application shall store the customer's service details like-service type, category, pricing, car condition etc.
   1.7. Service owner/manager must be able to add/edit/delete/view service persons
   1.8. Service persons must be able to trigger email and SMS for bills and further service notification.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

Performance requirements define acceptable response times for system functionality.

- The load time for user interface screens shall take no longer than two seconds.
- The login information shall be verified within five seconds.
- Reading and Generating QR code would take no longer than 10 seconds.
- The records and reports must be fetched and stored in less than 10-15 seconds.

5.2 Safety Requirements

The application user must use the authentic copy of android and must avoid harmful application installation from unknown sources on the device for the safety of the user information or mobile encryption is also another alternative. Maintaining the confidentiality of customer's credentials is a mandatory policy, violations of the policy might result to suspension of the account, legal proceedings could be carried out if accused (for owners/not for customers).

5.3 Security Requirements

The for security of the application the transactions of data will be performed under SSL certifications. The information stored in firebase would be secured by firebase security parameters such as Firebase Authentication and Authorization.

5.4 Software Qualities and Attributes

The application works less on local database and more on firebase hence efficiency is higher ensuring availability, correctness. This application is meant to run on all the types of android devices (Portability). QR codes are incorporated for information exchange instead to filling forms online (the conventional approach) to ensure security and speed of work. To deliver consistent maintainability, reliability and reusability updates will be patched to the application based on the reviews, ratings and security concerns.