Software Requirements Specification (SRS) — AUTOCARE

Version: 1.0
Date: 2025-08-11
Prepared by: Onesmus Kirimi

1. Introduction

1.1 Purpose

The purpose of AUTOCARE is to provide a centralized booking, payment, and business management platform for after-care service providers. The system enables customers to book services online, receive confirmations, make payments (via M-Pesa), and receive service updates. Business owners and staff can manage bookings, payments, and performance through a dedicated dashboard.

1.2 Scope

AUTOCARE will serve as a multi-tenant platform that can be sold to multiple independent service providers. Supported services include:

- **Car Detailing (mobile/stationary)**
- **Car Wash**
- **Interior Cleaning**
- **Paint Protection**
- **Wheel Alignment**
- **Small Garage Repair Jobs**
- **Polishing & Waxing**
- **Wrapping**

The system will include:

- **Customer Portal – for booking, payment, and service history.**
- **Provider Portal – for owners and staff to manage business operations.**
- **Payment Integration – M-Pesa STK Push & C2B.**
- **Notification Services – SMS & email.**
- **Role Management – Owner vs Staff permissions.**

1.3 Definitions, Acronyms, and Abbreviations

- **Owner – Registered business owner.**

- **Staff – Employee assigned to handle bookings and perform services.**
- **Booking – A service request from a customer.**
- **Multi-tenancy – Multiple businesses using the same platform with separate data.**
- **C2B – Customer-to-Business payment.**

1.4 References

- **M-Pesa Daraja API documentation**
- **Africa's Talking SMS API**
- **SendGrid Email API**

---

2. Overall Description

2.1 Product Perspective

AUTOCARE will be a cloud-based web application accessible from mobile and desktop devices. The frontend will be built using Vite + React + Tailwind CSS, backend using Node.js (Express), and MySQL for database management.

2.2 Product Functions

- **Customer Functions:**
    - **Register/Login**
    - **Browse services**
    - **Book a service**
    - **Pay via M-Pesa**
    - **View booking history**
    - **Receive notifications (SMS/email)**
- **Business Owner Functions:**
    - **Register/Login**
    - **Manage services & pricing**
    - **View all bookings**
    - **Assign jobs to staff**
    - **View payment reports**
    - **Manage staff accounts**
- **Staff Functions:**

- **Login**
- **View assigned bookings**
- **Update job status (Accepted, In Progress, Completed)**

2.3 User Classes and Characteristics

- **Customer – May be new or returning, requires easy booking and payment.**
- **Owner – Manages services, staff, and finances.**
- **Staff – Executes services, updates job status.**

2.4 Operating Environment

- **Web browsers: Chrome, Edge, Firefox, Safari**
- **Internet connection required for bookings & payments**
- **Mobile-responsive design**

2.5 Design and Implementation Constraints

- **Must support multi-tenancy (data isolation)**
- **Must integrate with M-Pesa**
- **Must be mobile-friendly**

2.6 Assumptions and Dependencies

- **Customers have internet access**
- **M-Pesa integration is available in operating region**
- **SMS gateway provider is available**

---

3. System Features

3.1 Customer Module

- **Registration/Login (Email/Phone + Password)**
- **Service Browsing (filter by location, service type, mobile/stationary)**
- **Booking System (date, time, service type, location for mobile services)**
- **M-Pesa Payment integration**

- **Booking History**

3.2 Business Owner Module

- **Dashboard Overview (bookings, revenue, performance)**
- **Service Management (add/edit/delete services, set prices)**
- **Booking Management (view & confirm/reject bookings)**
- **Staff Management (add staff, assign jobs)**
- **Reports (financial, service performance)**

3.3 Staff Module

- **Assigned Jobs View**
- **Job Status Update (accepted, in-progress, completed)**

3.4 Notifications

- **SMS notifications via Africa's Talking**
- **Email notifications via SendGrid**

---

4. Non-Functional Requirements

- **Performance – Handle at least 1000 concurrent users.**
- **Security – JWT authentication, encrypted passwords.**
- **Scalability – Support onboarding of new providers without downtime.**
- **Usability – Simple UI, optimized for mobile.**

---

5. Database Design (Simplified ERD)

Tables:

- **users (id, name, email, phone, password, role, business_id)**
- **businesses (id, name, owner_id, location, type)**
- **services (id, business_id, name, description, price)**
- **bookings (id, service_id, customer_id, staff_id, date, time, status, payment_status)**
- **payments (id, booking_id, amount, method, transaction_id, date)**

- **staff_assignments (id, staff_id, booking_id)**

Customer / Owner / Staff

|

Web Browser

HTTPS

▼

Frontend (Vite + React + Tailwind)

| API Calls (JSON)

▼

Backend (Node.js + Express)

- Auth (JWT)

- Booking Mgmt

- Service Mgmt

- Payment Integration (M-Pesa)

- Notifications (SMS/Email)

|

MySQL Database

|

External Services

- M-Pesa API

- Africa's Talking SMS API

- SendGrid Email API