Rabbeshly Station

Software Requirements Specification

V1.0

1/Mars/2024

Sanad AlArousi Lead Software Engineer

Prepared for
ITSE311—Software Requirements Analysis
Lecturer: Fatima Ben Lashihar
Fall 2023

Table of Contents

1. INTRODUCTION	1
1.1 Purpose	1
1.2 Scope	
1.3 Definitions, Acronyms, and Abbreviations	
1.4 References	
1.5 Overview	
2. GENERAL DESCRIPTION	
2.1 Product Perspective	
2.2 Product Functions	
2.3 USER CHARACTERISTICS	
2.4 GENERAL CONSTRAINTS	
2.5 Assumptions and Dependencies	
3. SPECIFIC REQUIREMENTS	
3.1 External Interface Requirements	3
3.1.1 User Interfaces	
3.1.2 Hardware Interfaces	
3.1.3 Software Interfaces	
3.1.4 Communications Interfaces	
3.2 Functional Requirements	
3.2.1 < Functional Requirement or Feature #1>	
3.2.2 < Functional Requirement or Feature #2>	
3.3 USE CASES	
3.3.1 Use Case #1	
3.3.2 Use Case #2	
3.4 CLASSES / OBJECTS	
3.4.1 < Class / Object #1>	
3.4.2 < Class / Object #2>	
3.5 Non-Functional Requirements	
3.5.1 Performance	
3.5.2 Reliability	
3.5.3 Availability	
3.5.4 Security	
3.5.6 Portability	
3.5.6 Portability	
3.7 Design Constraints.	
3.8 Logical Database Requirements.	
3.9 OTHER REQUIREMENTS	
4. ANALYSIS MODELS	4
4.1 Sequence Diagrams	
4.3 DATA FLOW DIAGRAMS (DFD)	
4.2 State-Transition Diagrams (STD)	
5. CHANGE MANAGEMENT PROCESS	5
A. APPENDICES	5
A 1 Appendix 1	_
A.1 Appendix 1	5

This comprehensive system acts as both an Enterprise Resource Planning (ERP) platform and a marketplace, catering to various sectors of the Libyan car industry and its users. It offers a diverse range of services that benefit various stakeholders, including everyday drivers, mechanics, shop owners, scrapyards, and even the government

Products/Scope:

- **1.1 <u>Car Station:</u>** A platform for users to manage their car information and share their passion for cars. This includes:
 - **1.1.1 Car Profile:** Store car details and receive personalized maintenance reminders.
 - **1.1.2 Suggestions and tips:** for the <owners> car to help preserve the cars value condition, such as: 'Regular Maintenance reminders'.
 - **1.1.3 Car-Station Feed:** Share and discuss car-related news and experiences
- **1.2 Shop Station:** A point-of-sale (POS) system for shops to manage their business operations, including:
 - **1.2.1 Shop Profile:** Increase online presence and sales through an online store.
 - **1.2.2 A.I-driven Assistant:** Optimize sales, purchases, and inventory through data-driven insights.
 - **1.2.3** Online/On-site Management tools: Manage sales data, employee accounts, inventory, sales performance, and more.
- **1.3 Workshop Station:** An ERP and POS system to manage workshop workflow, including:
 - **1.3.1 Workshop Profile:** Showcase workshop expertise and work history to attract customers.
 - **1.3.2 A.I-driven Assistant:** Improve decision-making for parts per-ordering, avoiding unsuitable repairs, and increasing profitability.
 - **1.3.3** Online/On-site Management tools: Streamline workflow by managing repairs, providing customer estimates, tracking employee performance, and more.
- **1.4** <u>Marketplace:</u> A customization feed showcasing cars, workshops, scrapyards, and advertisements, allowing users to buy, sell, and promote products and services.

- 1.5 **Service Station:** The central hub connecting all services, allowing:
 - 1.5.1 **Car owners:** Find nearby workshops based on specialization, previous work, or similar repairs.
 - 1.5.2 **Businesses:** Connect workshops with nearby shops and scrapyards for parts procurement.
 - 1.5.3 **Web scrapping:** Gather data on similar items from external platforms like Facebook and eBay.
- 1.6 **Data Station:** A central data repository for managing:
 - **1.**6.1 **Basic data:** Manage business, car, and customer data.
 - **1.6.2 AI data:** Gain insights through AI analysis.
 - **1.6.3 Statistical data:** Analyze market trends and competitor behavior.
 - **1.6.4 Web scrapped data:** Gather data on similar items from external platforms like Facebook and eBay.
 - **1.6.5 Government access:** Provide authorized entities with data access for regulatory purposes.

1.2. Audience segments:

- 1.2.1. **Owners:** Car, shop, workshop, and scrapyard owners.
- 1.2.2. **Workers:** Mechanics and other workers in shops, workshops, and scrapyards.
- **1.2.3. Businesses:** Shops, workshops, and government entities.
- 1.2.4. **Others:** Individuals passionate about cars.
- 1.2.5. **B2B Solution seekers:** Businesses looking for solutions to optimize their operations.

1.3 Not Station-like:

1.3.1. Not station-like functionalities:

- 1.3.1.1 Transfer of ownership and vehicle registration
- 1.3.1.2 The system won't handle car-related loans
- 1.3.1.3 The system won't provide car insurance
- 1.3.1.4 Social media features beyond the car-centric feed: While the Car-Station feed allows sharing car-related content, features like friend requests, or non-car-related content wouldn't be part of the system.
- 1.3.1.5 Car delivery or repair services: The system would connect users with workshops, but wouldn't offer car delivery, towing, or on-site repair services.

1.3.2. Not station-like entities:

- 1.3.2.1 **Non-car-related businesses:** This system focuses on the car industry. Entities like restaurants, grocery stores, or other non-car-related businesses wouldn't be included in the marketplace or other functionalities.
- 1.3.2.2 **Private individuals selling personal items:** While individuals can sell carrelated products in the marketplace, selling non-car-related personal items wouldn't be supported.
- 1.3.2.3 **Non-Libyan entities:** The system is currently targeted toward users and businesses in Libya. International users or businesses wouldn't be included in the initial scope, but would be added in future expansion.

1.3.3. Not station-like audience:

- **1.3.3.1 Individuals under 18:** The system requires users to be legal adults to register and utilize its services.
- 1.3.3.2 **Individuals without an internet connection or compatible device:** The system relies on internet access and mobile devices, so individuals without these wouldn't be part of the target audience.
 - 1.3.3.3 **Individuals not interested in cars:** The system focuses on the car industry, so individuals with no interest in cars wouldn't be a primary target audience.

1.4 Overview

- 1.4.1 **Car Station:** A user-centric platform for managing car information, connecting with other car enthusiasts, and receiving personalized maintenance reminders.
- 1.4.2 **Shop Station:** A point-of-sale (POS) system for shops to manage sales, inventory, and online presence, boosting their reach and efficiency.
- 1.4.3 **Workshop Station:** An integrated ERP and POS system for workshops, enabling efficient workflow management, improved customer service, and optimized parts procurement.
- 1.4.4 **Marketplace:** A customizable feed showcasing cars, workshops, scrapyards, and advertisements, facilitating buying and selling of car-related products and services.
- 1.4.5 **Service Station:** The central hub connecting all stations, empowering car owners to find suitable workshops based on specialization, previous work, or similar repairs, and enabling workshops to source parts efficiently.
- 1.4.6 **Data Station:** A central repository for storing and managing all system data, providing insights through AI analysis, statistical data, and web scraping to empower informed decision-making.

2.0 General Description

2.0.1 Market Conditions:

- 2.0.1.1 **Internet Penetration:** Increasing internet access (reaching 70% of the population in Libya) fosters the adoption of software solutions to meet evolving needs.
- 2.0.1.2 **Business Landscape:** While many businesses use social media (e.g., Facebook) and location services (e.g., Google Maps), they often lack the tools to fully leverage the potential of the internet.

2.0.2 Technology Gap:

- 2.0.2.1 **Uninformed Customers:** Limited knowledge about technology makes finding suitable software solutions challenging.
- 2.0.2.2 **IT Professional Opportunity:** This lack of awareness creates a market gap for readily accessible and affordable software solutions, with the car industry being a prime example.

2.0.3 Market Needs:

- 2.0.3.1 **Workshop Management:** Existing solutions lack functionality for managing customer car repairs, hindering efficient workflow and customer service.
- 2.0.3.2 **Shop Management:** Current practices, such as relying on social media for sales and marketing, are not sustainable for long-term growth.

2.0.4 Manual processes and limited technology usage create several challenges:

- 2.0.4.1 Inefficient workshop operations Limited sales and marketing reach for shops have both lead to intangible losses in sales and customer base
- 2.0.4.2 Difficulty in managing financial records leading to
- 2.0.4.2 Lack of transparency and traceability in repair processes

Proposed Solution: Rabbeshly Station:)

- Combines point-of-sale functionality with supply chain management features.
- **Streamlined workflows:** Simplifies workshop operations and customer interactions.
- Enhanced sales and marketing: Offers online presence and customer engagement tools.
- **Improved data management:** Facilitates efficient record-keeping and financial management.