Requirements Document
Petrol Station Digitization
Prepared for Ali's Oil

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Revision History

Name	Date	Reason for Changes	Version
Draft	Jan. 29, 2019	Initial Drafting	0.8
2nd Draft	Feb. 3, 2019	Refining Requirements	0.9
Final	Feb. 5, 2019	Revisions	1.0

1. Introduction

1.1 Purpose

This requirements document (version 1.0) has been written for the Petrol Station Digitization project at Ali's Oil in Sahiwal, Pakistan. The project scope encompasses systems used while logging transaction data, tracking inventory, managing customer debts, and performing quantitative analysis on data at the Ali's Oil petrol station and convenience store.

1.2 Project Scope

The software solution system for the Petrol Station Digitization project primarily acts as secure and remotely accessible ledgers covering transaction, inventory, and customer data for Ali's Oil. The solution system addresses issues regarding data security, data accessibility, task automation and income/expense traceability to improve company privacy, managerial support, employee productivity, and theft investigation within the currently implemented system, respectively. These effects of the solution system on the problem domain meets the overall client objective of increasing profits and decreasing expenses.

1.3 Glossary

Term	Description
Ali's Oil	A petrol station, convenience store, and provider of basic automotive maintenance in Sahiwal, Pakistan. There is also a restaurant and hotel attached which pays rent monthly.
Employee	A person employed at Ali's Oil (excludes the Manager)
Inventory	All products owned by Ali's Oil available for immediate sale
Manager	The administrator of the solution system
Pakistan State Oil	State-owned corporation that sets nationwide prices on petroleum products
Product	Referring to a specific type of item sold by Ali's Oil
Transaction	Referring to any method of cash flow in the company
Unit	A single quantity of a product sold at Ali's Oil
User	An employee or manager

1.4 References

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1.5 Overview

This requirements document consists of five sections, each with varying numbers of subsections providing further detail into covered topics. Section 1 contains an outline of the Petrol Station Digitization project and its scope, as well as a glossary of terms and references list. Section 2 elaborates on the problem domain with system features, user information, system environment factors and constraints on development. System features and their respective requirements are covered in Section 3, while Section 4 addresses user interface and software interface requirements. Performance requirements, security requirements and software quality attributes of the new system are outlined in Section 5.

2. Overall Description

2.1 Product Perspective

The system described in this document is being developed to replace the existing finance and inventory management system at Ali's Oil. Currently, Ali's Oil's finances and inventory are being tracked with an entirely paper-based system. Each transaction is manually recorded into a table in a notebook, all inventory is counted manually, and all business calculations are computed by

hand. The new solution system will allow Ali's Oil to improve their efficiency by automatically tracking inventory, transactions and fuel prices.

As there are currently no electronic systems in place at Ali's Oil, the solution system will not interface with any other internal systems. Any updates made to the solution system, including adding new inventory or changing the price of an item, will be performed manually by employees. The only external system that the solution system will interact with is the Government of Pakistan Oil and Gas Regulatory Authority to receive updates on the price of fuel.

2.2 Product Features

The features of the new system include inventory management, metric reporting, cash flow management, and customer debt management.

Inventory Management
Information about any product sold at Ali's Oil, including the quantity of the product currently in stock, is tracked by the solution system. The system notifies users when the quantity of a product drops below a user-configurable threshold.

Metric Reporting
The solution system generates reports on Ali's Oil's sales, inventory, customers, and business expenses.

Cash Flow Management
The new system keeps a record of all transactions processed and all funds present at Ali's Oil.

Customer Debt Management
The new system helps employees keep track of customer debt by keeping a record of the customer's contact information, amount owed, and history of transactions.

2.3 User Classes and Characteristics

Users of the system include the manager and the employees of Ali's Oil. Users have limited technical knowledge and minimal experience working with computers.

Manager
The manager has access to all features of the new system and uses it to do the following:

- Monitor transactions and verify daily totals

- Track inventory and receive a notification when stock is low
- Manually add new inventory to the system and update inventory prices
- Remotely view financial reports on customer debts, sales, the value of all stock, and other expenses

Employee

The employee's use of the new system is limited to the following:

- Processing customer transactions
- Adjusting customer debt
- Filling out a cash register report at the end of his or her shift

Each employee is only able to access aspects of the system granted to them by the manager. Unless given specific access by the manager, the employee cannot view reports on the system that contain long-term financial information or information about other employees.

2.4 Operating Environment

The system runs on common laptops and personal computers and allows remote access for the manager.

2.5 Design and Implementation Constraints

Budget: The project budget is equivalent to $500 USD.

Data retention: The system is capable of storing five years' worth of financial data.

Language: The system is implemented in Urdu since not every employee is fluent in English.

Software capability: The system operates on Windows operating systems.

Training time: An unfamiliar user is able to learn to use the system within one hour of introduction to the system.

2.6 Assumptions and Dependencies

Price retrieval: This project depends on the Government of Pakistan Oil and Gas Regulatory Authority providing fuel price changes for the system to retrieve.

3. System Features

3.1 Inventory Management

3.1.1 Description

Inventory consists of all products for sale in the convenience store and at the fuel pumps. The solution system aids in the management of inventory by maintaining a representation of this inventory on a per-product basis within the system itself. Users may manually interact with the system's inventory records when necessary.

3.1.2 Functional Requirements

FR-01:   Products within the system are uniquely identifiable.

FR-02:   The system allows for manual addition of products to its inventory.

FR-03:   The system allows for manual editing of product-specific information.

FR-04:   All products and product-specific information within the system are available for user reference.

FR-05:   The system automatically updates its recorded quantity of a product when a transaction attributed to a change in inventory is added to the system (see **FR-17**).

FR-06:   When a product quantity is updated to a value below a specified threshold, the system generates a notification (see **FR-29**).

FR-07:   The system automatically updates prices for fuel products (see **FR-28, FR-30**).

3.2 Metric Reporting

3.2.1 Description

The manager is able to manually generate reports about different aspects of the business. The manager is able to generate the report by selecting the report that they would like to view and use an interface element to tell the system to generate that report. Reports are

generated by the system through analysis of data within a timeframe specified by the manager. The types of reports that the manager is able to generate are shown in section 3.2.2 Functional Requirements.

3.2.2 Functional Requirements

Sales Reports

FR-08:   The system generates sales reports detailing the amount and value of products sold in a specified timeframe.

FR-09:   The system generates sales reports detailing profits over a specified timeframe.

FR-10:   The system generates sales reports detailing a transaction breakdown for a specified day.

Inventory Reports

FR-11:   The system generates inventory reports detailing all products in current inventory.

FR-12:   The system generates inventory reports detailing products in the inventory that have a quantity below a customizable threshold (see **FR-06**).

Customer Reports

FR-13:   The system generates customer reports detailing all customers with outstanding debt, with the date that debt was created and amount of debt.

FR-14:   The system generates customer reports detailing total outstanding debt for all customers.

Business Expense Reports

FR-15:   The system generates business expense reports detailing all business expenses within a specified timeframe, including employee payroll costs.

3.3 Cash Flow Management

3.3.1 Description

Cash flow pertains to all cash currently on store premises and the exchange of cash between Ali's Oil and external entities (e.g. customers, banks). The solution system aids the management of cash flow by maintaining records of individual transactions and total amounts.

3.3.2 Functional Requirements

FR-16   Transactions within the system are uniquely identifiable.

FR-17:   The system allows for manual addition of transactions.

FR-18:   The system provides the total amount of cash on site.

FR-19:   The system automatically adjusts its record of the total amount of cash on site after a transaction is added to the system.

FR-20:   The manager can manually adjust the system's record of cash on site.

3.4 Customer Debt Management

3.4.1 Description

If a customer requires a product that cannot be paid for immediately, the customer may pay for that product at a later date. The solution system aids in the management of customers who have accumulated debt.

3.4.2 Functional Requirements

FR-21:   Customers within the system are uniquely identifiable.

FR-22:   The system associates each customer with the respective contact information and total amount of debt accrued.

FR-23:   The system allows for manual addition of customers.

FR-24:   The system allows for manual editing of customer-specific information.

FR-25:   All customers and customer-specific information within the system are available for user reference.

4. External Interface Requirements

4.1 User Interfaces

4.1.1 Description

Employees may not have prior experience with software as all store records are currently hard copies. Integrating the new system will be minimally difficult.

4.1.2 Functional Requirements

FR-26:   The interface is designed in such a manner that employees are able to process transactions and debt adjustments (see **FR-22, FR-23, FR-24**) with initial training from the manager.

FR-27:   The manager has full access to system interface elements.

FR-28:   When fuel prices are updated in system inventory, (see **FR-07, FR-30**), a notification is created by the system.

FR-29:   The system notifies users when the low-quantity limit of a product is reached (a product's quantity goes below a specified limit).

4.2 Software Interfaces

4.2.1 Description

To retrieve fuel prices regulated by a government body, the system interfaces with an external website.

4.2.2 Functional Requirements

FR-30:   The system retrieves fuel prices from the Pakistan Oil and Gas website.

4.3 Communication Interfaces

4.3.1 Description

The system provides users with the ability to access system data while off store premises.

4.3.2 Functional Requirements

FR-31:   The system is remotely accessible through a computer network.

5. Other Non-Functional Requirements

5.1 Performance Requirements

5.1.1 Description

The system performs certain functional requirements within a specified time frame.

5.1.2 Functional Requirements

NFR-01:   The manager can remotely access the system within 10 minutes of attempted connection.

NFR-02:   The system updates funds after completed transactions in under 10 minutes (see **FR-19**).

NFR-03:   Product low-quantity notifications are generated within 10 minutes of the respective product quantity update (see **FR-06, FR-29**).

NFR-04:   Metric reports (sales reports, inventory reports, customer reports and business expense reports) should be generated in under 30 seconds.

5.2 Security Requirements

5.2.1 Description and Priority

The system maintains the confidentiality of sensitive information regarding business operations by allowing the manager to invoke user accessibility limitations.

5.2.2 Functional Requirements

NFR-05:   The system allows for discretionary access control where the manager can specify the system data that employees may view, edit, or otherwise interact with on a per-employee basis.

5.3 Software Quality Attributes

5.3.1 Description

Ali's Oil largely depends on the new system for daily operations. Due to this, the new system possesses several key software quality attributes to ensure efficiency and success.

5.3.2 Functional Requirements

NFR-06:   The system is portable.

NFR-07:   The system is user-friendly to those with little prior experience with software systems (see **FR-26**).

Appendix: Issues List

1. What if a customer wants to return something?

2. What constraints exist on the time taken to generate metric reports?

3. Will this software track all sold products or all products purchased by the company?
4. Priorities have not been assigned to Functional Requirements pertaining to System Features