Sri Lanka Institute of Information Technology

FILLING-SERVICE STATION MANAGEMENT SYSTEM

Software Requirement Specification

Information Technology Project 2015

Project ID: ITP-15-B2-02

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Date of submission

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Table of Contents

Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

This software requirements specification specifies the requirements for Service-Filling Station Management System for A.P.Gunawardhana and Company (Pvt) Ltd.

As the current system is a manual. To overcome the drawbacks such as time consumption, less efficiency, less accuracy, storage problems and security. This software system will provide an automated solution

The purpose of this Software Specification Document (SRS) is to provide a detailed description of the functionalities of the "Service-Filling Station Management System" (SFSMS). This document will cover each of the system's purpose and intended features. It will also explain the constraints, interfaces, hardware, software and other dependencies of "SFSMS". The primary purpose of this document is to obtain approval from client and to serve as a reference document while developing this system

1.2 Document Conventions

- Main topics are written using "Times New Roman" bold letters in 18pts font size.
- Sub topics, under the main topics are written using "Times New Roman" bold letters in 14pts font size.
- Descriptions under the each topics and sub topics are written using "Times New Roman" letters in 12pts font size and line spacing of 1.5pts.
- The references are written in IEEE format.

1.3 Intended Audience and Reading Suggestions

This document is intended to be read by the owner of A.P.Gunawardhana and Company (Pvt) Ltd. All individuals who are participating in or supervising this software can also read this

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document. Readers who are interested in an overview of this software should read part 1 (Introduction) and part 2 (Overall description) of this document.

Readers can refer part 3 (External Interface Requirements) if they need further information about user interfaces, hardware and software interfaces. Readers who wish to explore the system (SFSMS) features in detail can refer part 4 (System Features) of this document.

Readers who are interested in exploring the non-functional aspects of this software such as performance, security and safety should read part 5(Other non-functional requirements). In order to explore the software quality attribute and business rules, reader must refer part 5 of this document. If readers need any other information which does not fit into any of the above mentioned sections can refer part 6 (Other requirements) which includes additional information about this software.

1.4 Product Scope

The Service-Filling Station Management System is an automated system designed to manage tasks which are manually handled by of A.P.Gunawardhana and Company (Pvt) Ltd at present. This system can process information very quickly and perform detailed work without any mistake.

Our system is divided into sub-parts as given below.

- Human Resources Management-This manages the employee details and user logins.
- Attendance and Payroll Management- This manages the salary and attendance of the employees and handling the overtime levels.
- Fuel Sales and Stock Management- Handling the oil reservoirs situated at the filling station while managing their oil levels and supplier details.
- Service Detail Management-This will manage job/task relevant to the services, scheduling and status management, Generating bill according to the vehicle criteria, items and services obtained by the customer etc.
- General Accounts Management-This will manage company's expenses and profit details account management.
- Service Station Inventory Management- This will handle Spare parts stock and sales billing management, product details management etc.

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- Customer and Vehicle Management- This is a customer focused approach to delivering and receiving information. This function focuses on providing value to customer and also on the customer relationship.
- Machine Supply Controlling Management- This will handle Managing and maintaining the machine purchases etc.

1.5 References

[1] Stack Overflow. 2015. Stack Overflow. [ONLINE] Available at: **http://www.stackoverflow.com**. [Accessed 18 July 2015]

[2]Alistair Cockburn, 2000. Writing Effective Use Cases. 1 Edition. Addison-Wesley Professional

[3] Rajib Mall, 2004. Fundamentals of Software Engineering. Edition. Prentice-Hall of India Pvt.Ltd.

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2. Overall Description

2.1 Product Perspective

A.P.Gunawardhana and Company (Pvt) Ltd is a service -filling station which maintains a traditional file based system to fulfill its requirements. Recently they are facing various difficulties because of the rising number of customers as well as employees and stock. Hence, the efficiency and the performance of the system are gradually decreasing.

As solution to above problems the management has decided to computerize the system. The proposed system will increase the efficiency and improve the performance of the activities within the sevice-filling station. A proper database would be maintain for an efficient and secure approach in the process of storing data regarding to the daily activities which take place within the station.

2.2 Product Functions

- Fuel sales and stock Management
  - Fuel Sales detail management
  - Lubricant Sales Management
- Service Detail Management
  - Services type detail handling.
  - Service station Job assignment handling.
- Human Resources Management
  - Employee management
  - Leave management
- Payroll Management
  - Salary detail handling
  - Salary calculations
- General Account Management
  - Cash book management
  - Manage Mandatory expenses

- Spare Parts Inventory Management

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Spare Parts sales management

Spare Parts stock management

- Machine Supply Controlling Management

  Machine Management

  Supplier Management

- Customer and Vehicle Management

  Customer Management

  Vehicle Management

2.3 User Classes and Characteristics

2.3 User Classes and Characteristics

Manager

Manger basically has all the privileges when accessing the system. The manager can handle customer details, employee details , supplier details , service details, staff payment details , product order details , internal machines details , employee scheduled works details, spare parts and fuel stock details , cash book and account details. He can update, delete and edit information in appropriate inventory and the catalog. He can issue job card and bills. And also he is responsible for generate reports on filling station stock , spare parts stock , scheduled works and employee , customer details and cash book and expenses .

Employee

Employee can enter fuel meter reading and product details, apply leaves and mark the attendance. He is also responsible for issuing job card and bills. No special knowledge is expected from a user when using this system. An employee is not supposed to learn the commands or memorize them in order to use the system. A basic knowledge of the whole system is enough for a user to fulfill his requirements using the system.

2.4 Operating Environment

Minimum hardware Requirements

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Processor: 800 MHz Intel Pentium III or equivalent

Memory: 512 MB

Disk space: 750MB of free disk space

Recommended Hardware Requirements

Processor: 2.4 GHz Intel Pentium IV or higher

Memory: 1GB

Disk space: 1 GB free disk space

Software Configurations

Microsoft windows 7 or higher

Java Runtime Environment 1.6

MY SQL

2.5 Design and Implementation Constraints

Programming language

The system will use java as the programming language

Project Documentation

Document	Description	Activity
Software Project Proposal	Description of the software approach and associated milestones	System requirement analysis software requirement analysis
Software Requirements Specifications (SRS)	Description of the expected software features, constraints, interfaces and other attributes.	Process implementation
Software Design Description (SDD)	Description of how the software will meet the requirements. Also describes the rationale for design decisions taken.	System architectural design Software architectural design Software detailed design
Software Test Documentation (STD)	Description of the plan and specifications to verify and validate the software and the results.	Software qualification testing System qualification testing
Technical Documentation	Documentation of code, algorithms, interfaces	

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User Documentation	Manuals for the end-user, & support staff	

2.6 User Documentation

User manual:

Includes overview, complete configuration of the software, technical details, and the backup procedure. This will also help the user to overcome various difficulties when using the automated system.

2.7 Assumptions and Dependencies

Assumptions

Each user must have a username and a password.

Each user has their own authorization to handle the tasks of the System.

Overall speed of the system will depend on the speed of the network used to communicate between embedded systems.

The printer will be quality enough to print a quality Bills and other cash book reports etc.

The web cam will be powerful enough to capture a quality image.

Time Dependencies

Usability improvements and convenience enhancements that may be added after the application has been developed.

Thus, the implementation features are entirely dependent upon the time spent designing and implementing the core features. The final decision on whether or not to implement these features will be made during the later stages of the design phase.

Hardware Dependencies

Some of the additional features rely on hardware components. For instance, the camera will be used to record images of receipts for digital storage.

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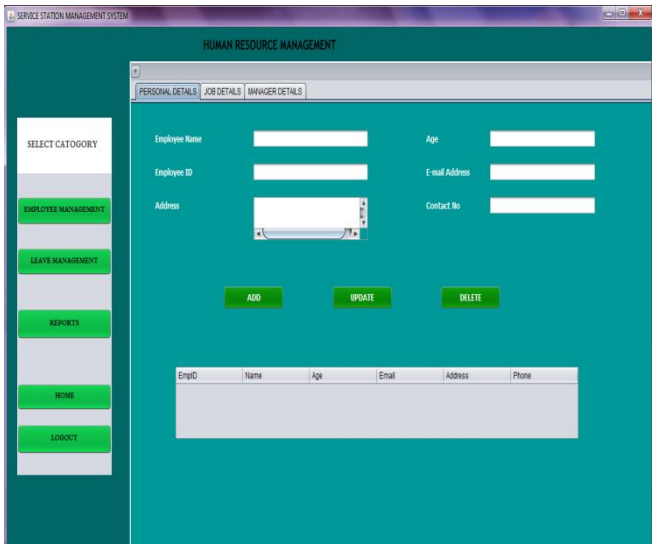
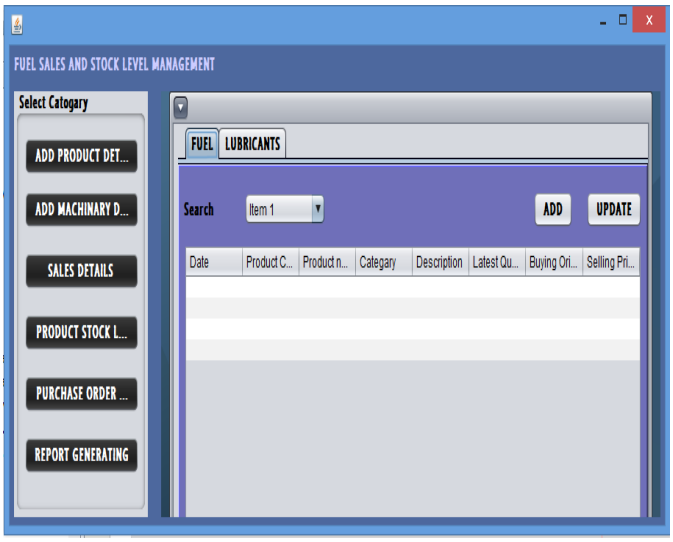
3. External Interface Requirements

3.1 User Interfaces

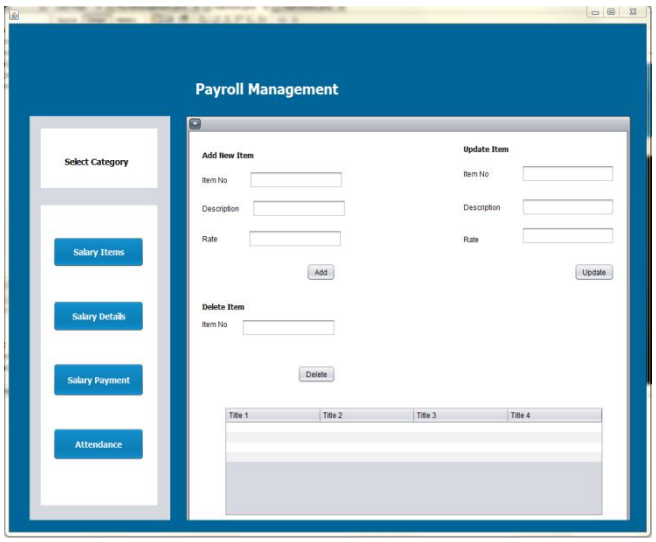
Human Resource Management



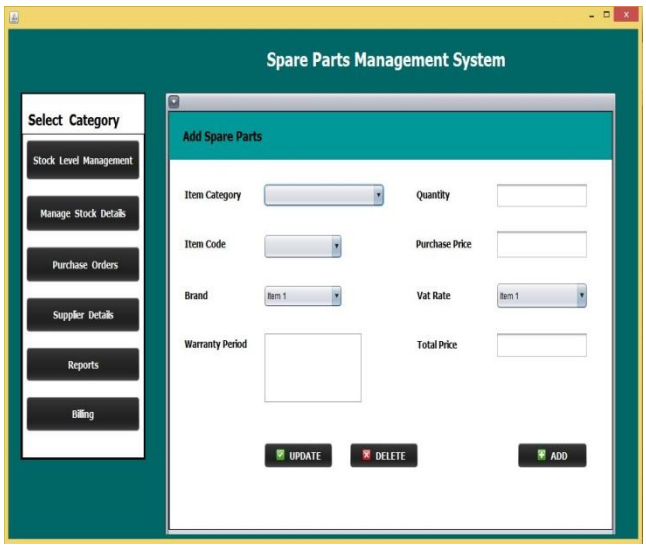
Fuel Sales and Stock Management



Payroll Management



Spare Parts Management



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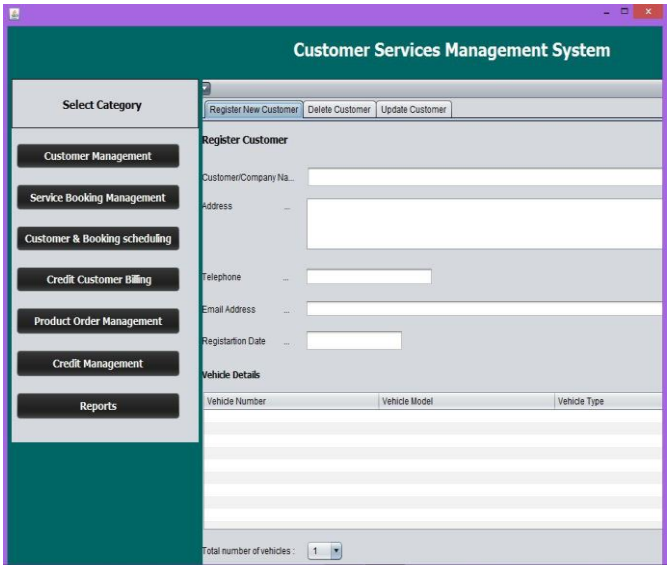
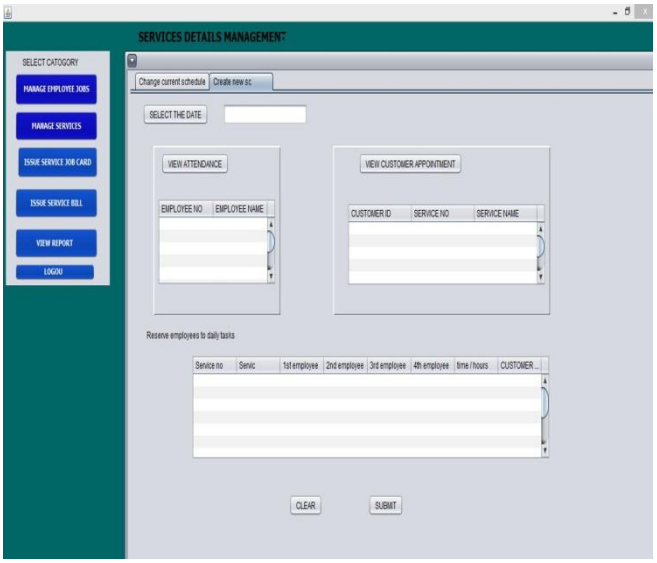
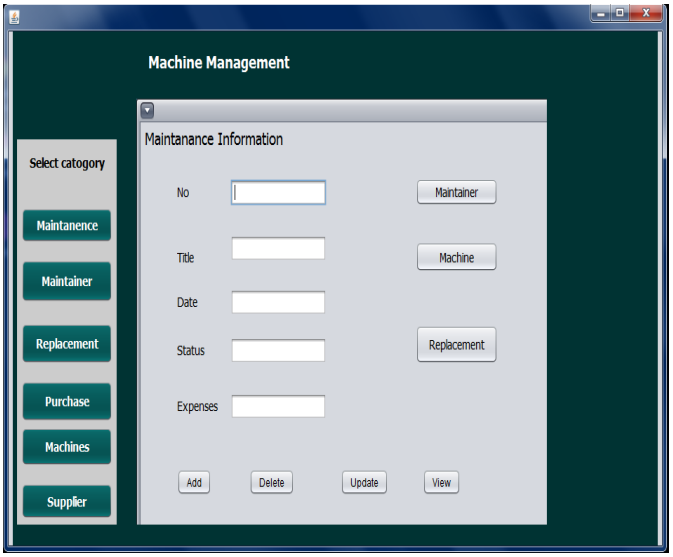
Customer Services Management



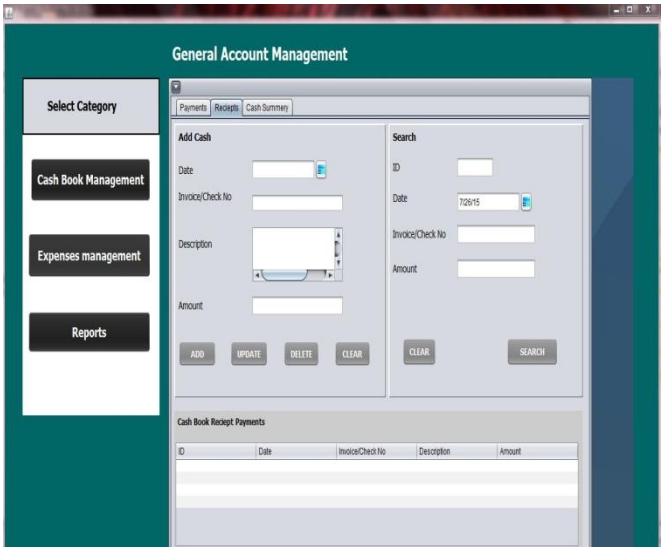
Customer Details Management



Machine Management



General Account Management



3.2 Hardware Interfaces

It is required to have PCs with processor of Pentium 2GHz or higher, RAM with 1GB or more memory capacity and with 2GB or more disk space hard drives in Client side. Besides the primary input and output devices, the system will need to interact with printers, since certain reports and letters will be required in hardcopy format.

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3.3 Software Interfaces

Database of the proposed system will be designed using the MYSQL in the WAMP server. And the Net Beans IDE of version 8.0.2 will be used for the designing of the interfaces and coding of the system. MYSQL JDBC driver, java mail, will be used as external libraries for the system. For the purpose of generation of the reports Jasper reports (ireports) will be used.

3.4 Communications Interfaces

The communication between the different parts of the system is important. Because some parts of the system will depend on each other. Since this system is a desktop application interactions among each components are handled through button click events and interfaces

4. System Features

4.1 System Feature 1: Use case scenarios

4.1.1. Human Resource Management

4.1.1.1. Human Resource Management: Add a new employee

Use Case Name	Add a new employee	
Preconditions	System is up and running User has successfully logged in to the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	The use case begins when the user clicks on the tab of "Employees"
	2	User has to fill the employee details form
	3	User clicks the Add button.
	4	User gets the confirmation message
	5	The information about the new user is added to the table below.
Extensions :	2.a.1	User enter invalid name, user id, address or contact number.
	2.a.2	Displays the error message that invalid information has been added so the new user cannot be added.

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		Form is cleared and user can enter details again

4.1.2. Human Resource Management: Edit an employee

Use Case Name	Edit an employee	
Preconditions	System is up and running User has successfully logged in to the system.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	The use case begins when the user clicks on the tab of "Employees".
	2	The user search the employee by name pressing the search key
	3	System displays the relevant employee information on the table.
	4	User enters the information to be edited to the form.
	5	User presses update button to update the employee.
Extensions :	2.a.1	User enters invalid employee information of employee.
	2.a.2	Display the message to input correct information.

4.1.3. Human Resource Management: Delete an employee

Use Case Name	Delete an employee.	
Preconditions	System is up and running User has successfully logged in to the system.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	The use case begins when the user clicks on the tab of "Employees".
	2	The user searches an employee by name pressing the search button.
	3	System displays relevant information on the table.
	4	User presses delete button to delete the employee.

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	5	System displays message asking whether the user wants to delete the employee.
	6	Use case ends after displaying the message that the employee is deleted successfully.
Extensions:	5.a	If user selects Yes, system displays message.
		If user selects No, information in the table is cleared.

4.1.4. Human Resource Management: Print the employee details.

Use Case Name	Print the employee details.	
Preconditions	System is up and running User has successfully logged in to the system	
Primary Actors	Manager	
Main Flow of Events	1	The use case begins when the user clicks on the tab of "Employees".
	2	The user searches a particular employee by the name.
	3	System displays relevant information on the table.
	4	Users select the employee and press the print button.
	5	The slip is printed.

4.1.5. Human Resource Management: View manager details.

Use Case Name	View manager details.	
Preconditions	System is up and running User has successfully logged in to the system.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	The user case begins when the user presses the tab of "Managers".
	2	User searches the manager by name and press the search button.
	3	Information about the manager is listed below on a table.

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4.1.6. Human Resource Management: Apply leave

Use Case Name	Apply leave	
Preconditions	System is up and running User has successfully logged in to the system.	
Primary Actors	Employee	
Main Flow of Events	Step	
	1	The use case begins when the user clicks on the tab of "Leaves".
	2	User has to fill the leave details form
	3	User clicks the Apply button.
	4	User gets the confirmation message

4.1.7. Human Resource Management: Approve/Reject leave

Use Case Name	Approve/Reject leave	
Preconditions	System is up and running User has successfully logged in to the system.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	The use case begins when the user clicks on the tab of "Leaves".
	2	User clicks the "view leaves" button
	3	Information about the leaves are listed below on a table
	4	User presses approve or reject button

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4.1.2. Fuel Station Stock Management

4.1.2.1. Fuel Station Stock Management: Add product details

Use Case Name	**Add product to the Stock**	
Preconditions	System is up and running Stock manager must logged into the system	
Primary Actors	Sales Manager	
Main Flow of Events	Step	
	1	User click the Product Details button in the Main Form and click the "ADD" button
	2	System will display the form to add details and select date, product category name
	3	User fill the form with the product details
	4	Click "ADD" Button
	5	Validate details
	6	System asks for confirmation about the add product details
	7	User gets the message that new product was added successfully.
	8	Use case ends when the details are displayed in the table below
Extensions :	6.a.1	User enter invalid details
	6.a.2	Displays the error message that invalid information has been added and new product

4.1.2.2. Fuel Station Stock Management: Edit product details

Use Case Name	Edit product details
Preconditions	System is up and running. User has successfully logged in to the system.

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Primary Actors	Sales Manager	
Main Flow of Events	Step	
	1	The use case begins when the user click on the row that user want to update in the below table and click the Update button.
	2	System will display the form that is filled with the previous details
	3	User presses Update button to update the product details
	4	User gets the message that the product was updated successfully.
	5	Use case ends when the updated details are displayed in the table below
Extensions	2. a.1.	User enters invalid product details
	2. a.2.	Displays the error message that invalid information has been added and the product cannot be updated.

4.1.2.3. Fuel Station Stock Management: Delete product details

Use Case Name	Delete a Product	
Preconditions	System is up and running. User has successfully logged in to the system.	
Primary Actors	Sales Manager	
Main Flow of Events	Step	
	1	User select the product that he want to delete from the table below in the form
	2	User click the delete button
	3	System asks for confirmation about the delete product
	4	User gets the message that the product was deleted successfully.

4.1.2.4. Filling Station Sock Management: Search a product in the stock

Use Case Name	**Search a Product**
Preconditions	System is up and running Stock manager must logged into the system
Primary Actors	Sales Manager

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Main Flow of Events	Step	
	1	User enter the product that you want to search
	2	User can select the product category also
	3	Click Search button
	4	Validate details
	5	Then output will be display in the below table
Extensions :	3.a.1	Doesn't type anything and click the button
	3.a.2	Displays all the products according to the search details
	4.b.1	Type invalid product name
	4.b.2	Table doesn't show any thing
	4.b.3	System will prompts to type valid name again

4.1.2.5. Filling station Stock level management: Check fuel level in tanks

Use Case Name	**Check fuel levels in tanks**	
Preconditions	System is up and running Stock manager must logged into the system	
Primary Actors	Sales Manager	
Main Flow of Events	Step	
	1	User click the "Stock Level management" button In the main form
	2	User enters the fuel type product name that you want to check the levels in tanks.
	3	Click Search button
	4	Validate details
	5	Then output will be display using the report or a chart below the form
Extensions :	2.a.1	Doesn't type anything and click the button
	2.a.2	Display the report or chart
	4.b.1	Type invalid name
	4.b.2	Report doesn't show any thing
	4.b.3	System will prompts to type valid name again

4.1.2.6. Filling station Stock level management: Check product stock levels

Use Case Name	Check product stock levels
Preconditions	System is up and running. User has successfully logged in to the system.

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Primary Actors	Sales Manager	
Main Flow of Events	Step	
	1	User clicks the "Stock level management" button in the main form and clicks on the "stock level" tab
	2	User selects the date.
	3	User click the "Check" button
	4	Then available stock levels of all the products will be display using the table below the form
Extensions	3. a. 1.	User enters invalid information.
	3 .a. 2.	Displays the error message that invalid information has been added and the order cannot be processed.

4.1.2.7. Managing Purchase Order Details: managing supplier details

Use Case Name	**Managing supplier details**	
Preconditions	System is up and running Stock manager must logged into the system	
Primary Actors	Sales Manager	
Main Flow of Events	Step	
	1	User click the "Purchase order management" button in the main form
	2	User add ,edit ,delete ,search supplier details
	3	Click the add ,update ,delete ,search button in the popup interface
	4	Validate details
	5	Then search output will be display using table and User gets the message that the supplier detail was deleted ,add ,updated , successfully
Extensions :	4.b.1	Type invalid details
	4.b.2	Table doesn't show any thing
	4.b.3	System will prompts to type valid details again

4.1.2.8. Managing Purchase Order Details: Order processing

Use Case Name	Order processing
Preconditions	System is up and running. User has successfully logged in to the system.
Primary Actors	Sales Manager

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Main Flow of Events	Step	
	1	User clicks the "Purchase order management" button in the main form and clicks on the order request tab
	2	User fills the form with order processing details.
	3	User click the "Send Email" button
	4	User gets the message that the order was processed successfully.
Extensions	3. a. 1.	User enters invalid information.
	3 .a. 2.	Displays the error message that invalid information has been added and the order cannot be processed.

4.1.2.9. Generating Reports:

Use Case Name	Report Generation	
Preconditions	System is up and running. User has successfully logged in to the system.	
Primary Actors	Sales Manager	
Main Flow of Events	Step	
	1	User click the "Report Generating" button in the main form
	2	User click on the tab buttons in the form to select the category that you want to generate the reports
	3	User fills the form with given information.
	4	User clicks Print Report button.
	5	System will display the report using tables, charts and etc.
Extensions	4. a.1.	User enters invalid information.
	4. a.2.	Displays the error message that invalid information has been added and the report cannot be generated.

4.1.2.10. Enter meter readings

Use Case Name	Enter meter reading
Preconditions	System is up and running User has successfully logged in to the system
Primary Actors	Sales Manager, employee

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Main Flow of Events	Step	
	1	User select the Shift details
	2	User selects the date and time.
	3	User fills in the form with new meter readings.
	4	User clicks the Add button.
	5	User gets the message that new record was added successfully.
Extensions :	4.a.1	User enters invalid fuel meter readings
	4.a.2	Displays the error message that invalid information has been added and new reading cannot be added.
	4.a.3	Form is cleared and user can enter details again.

4.1.2.11. Print bill

Use Case Name	**Search an item of oil mart**	
Preconditions	System is up and running Stock manager must logged into the system	
Primary Actors	Stock Manager	
Main Flow of Events	Step	
	1	User enter the date and time
	2	User select the product that the customer want to buy enter quantity and discount
	3	System will display the total price
	4	Click the print button
	5	Then system will issue the bill
Extensions :	4.b.1	Type invalid name
	4.b.3	System will prompts to type valid details again

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4.1.3. Spare Parts Management

4.1.3.1. Spare Parts Management: Search spare parts of Stock

Use Case Name	**Search spare parts of Stock**	
Preconditions	System is up and running Manager must logged into the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case starts with the user entering the "Spare Parts Management " User Interface by clicking Stock details button in the Main Form
	2	User enter the Spare part item that you want to search by their product category name
	3	Click Search button
	4	Validate details
	5	Then output will be display using table
Extensions :	2.a.1	Doesn't type anything and click the button
	2.a.2	Displays all the Spare part items in the Stock
	4.b.1	Type invalid name
	4.b.2	Table doesn't show any thing
	4.b.3	System will prompts to type valid name again

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4.1.3.2. Spare Parts Management: Add Spare part item to Stock

Use Case Name	**Add Spare part item to Stock**	
Preconditions	System is up and running Manager must logged into the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case starts with the user entering the "Spare Parts Management" Interface by clicking the Manage Stock Details button in the Main Form
	2	Select Item Category, Item Code ,Brand, Warranty Period
	3	User enter the quantity , Purchase price ,VAT rate
	4	Then system will display the total price
	5	Click "Add " Button
	6	Validate details
	7	System asks for confirmation about Spare Parts details to the inventory
	8	System displays the Spare Parts Details
Extensions :	6.a.1	User enter invalid details
	6.a.2	Go to step 2,3,4 again
	7.a.1	User does not confirm
	7.a.2	System ask to add add Spare parts again by clicking add button

4.1.3.3. Spare Parts Management: Update Spare part item of Stock

Use Case Name	**Update Spare part item of Stock**	
Preconditions	System is up and running Manager must logged into the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Include:: (**Search an item of spare part**)
	2	User click the row that you want to edit and it will redirect output to relevant fields including Spare Part ID
	3	Select edit date, product category name, product sub category name and supplier name

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	4	User enter whole sale price, retail price and quantity
	5	Then system will display the total price
	6	Click "Update" Button
	7	Validate details
	8	System asks for confirmation about spare part details to the inventory
	9	System displays the updated spare part details
Extensions :	7.a.1	User enter invalid details
	7.a.2	Go to step 2,3,4 again
	8.a.1	User does not confirm
	8.a.2	System ask to update spare part details again by clicking update button

4.1.3.4. Spare Parts Management: Delete Spare part item from Stock

Use Case Name	**Delete Spare part item from Stock**	
Preconditions	System is up and running Manager must logged into the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Include:: (**Search an item of Stock**)
	2	Click the row that you want to delete
	3	User click "Delete" Button
	4	System asks for confirmation about delete spare part details from the stock
	4	System remove the relevant spare part details
Extensions :	2.a.1	Doesn't click row and click delete button
	2.a.2	System ask to select the row
	4.a.1	User does not confirm
	4.a.2	System ask to delete spare part details again by clicking delete button

4.1.3.5. Spare Parts Management: Generate report for spare parts Inventory

05 Use Case Name	**Generate report for spare parts Inventory**
Preconditions	System is up and running Manager must logged into the system
Primary Actors	Manager

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Main Flow of Events	Step	
	1	Include:: (**Search spare parts of Stock**)
	2	Click "Report" Button
	3	System asks for confirmation about display report
	4	System displays the report

4.1.3.6. Spare Parts Management: Check spare parts stock for Critical level

Use Case Name	**Check spare parts stock for Critical level**	
Preconditions	System is up and running Manager must logged into the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Include:: (**Search spare parts for Critical levels**)
	2	Then it will display relevant spare part item details
	3	It will display a message the item quantity level status
Extensions :	3.a.1	Quantity level is low display low
	3.b.1	Quantity level is not low display not low

4.1.3.7. Spare Parts Management: Generate Spare parts report for critical levels

Use Case Name	**Generate Spare parts report for critical levels**	
Preconditions	System is up and running Manager must logged into the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Include:: (**Search spare part for critical levels**)
	2	Click Check stock level tab
	3	Click "Report" Button
	4	System asks for confirmation about display report
	5	System displays the report
	4.a.1	User does not confirm
	4.a.2	System ask to display report again by clicking generate report button

4.1.3.8. Spare Parts Management: Add New Supplier

Use Case Name	Add New Supplier

**

Preconditions	System is up and running User has successfully logged in to the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	The use case begins when the user clicks on the tab "Supplier Management".
	2	User fills in the form with new Supplier details.
	3	User presses the" Add" button.
	4	User gets the message that new supplier was added successfully.
	5	Use case ends when the details are displayed in the table below.
Extensions :	2.a.1	User enters invalid input.
	2.a.2	Displays the error message that invalid information has been added.
	2.a.3	Form is cleared.

4.1.3.9. Spare Parts Management: Update Supplier

Use Case Name	Update Supplier	
Preconditions	System is up and running User has successfully logged in to the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	The use case begins when the user clicks on the tab of "Supplier Management"
	2	The user selects a supplier from the table.
	3	System displays the relevant supplier information.
	4	User enters the information to be updated to the form.
	5	User presses "Update" button to update supplier.
Extensions :	2.a.1	User enter invalid vendor information of vendor
	2.a.2	Display the message to input correct information
	2.b.1	User types the suppliers' name.
	2.b.2	User presses "Search" button.
	2.b.3	The supplier information is displayed.

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4.1.3.10. Spare Parts Management: Delete a Supplier

Use Case Name	Delete a Supplier	
Preconditions	System is up and running User has successfully logged in to the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	The use case begins when the user clicks on the tab of "Supplier Management "
	2	The user selects a supplier
	3	System displays relevant information
	4	User presses delete button to delete supplier
	5	System displays message asking whether the user wants to delete the supplier.
	6	Use case ends after displaying the message that the particular supplier deleted successfully.
Extensions:	2.a.1	User types the supplier's name.
	2.a.2	User presses "Search" button.
	2.a.3	The supplier information is displayed.
	5.a.1	User selects "no"
	5.a.2	Information in the table is cleared.

4.1.3.11. Spare Parts Management: Ordering spare part for stock

Use Case Name	Ordering spare part for stock	
Preconditions	System is up and running User has successfully logged in to the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	The use case begins when the user selects "Stock Management "button.
	2	User selects the category of spare part and fills the form.
	3	User presses the "Order" button to order the spare part.
	4	Use case ends after displaying the message that the order was placed successfully.

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Extensions :	4.a.1	User enters an invalid quantity.
	4.a.2	Display the message that the order cannot be placed.

4.1.3.11. Spare Parts Management: Purchase spare parts

Use Case Name	**Purchase spare parts**	
Preconditions	System is up and running Manager must logged into the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	The use case begins when the user selects " Purchase "button
	2	User fills the purchase details on the interface.
	3	User press Purchase button to purchase spare parts. After pressing this button user will get message that the purchase you made is successful.
	4	Use case ends after pressing view purchase details button and displaying the details in the table given below.

Extensions :	2.a.1	Use enter invalid information of Purchases
	2.a.2	Display the massage to enter the correct information.
	2.a.3	User fill correct purchase details and information will be displayed.

4.1.4. Services details use case scenario

4.1.4.1. Services details use case scenario: Issue Job Card

Use Case Name	**Issue Job Card**	
Preconditions	System is up and running Stock manager must logged into the system Services employees must assign to works and customer should register and make an appointment.	
Primary Actors	Manager , Employee	
Main Flow of Events	Step	
	1	Use case starts with the user interface by clicking the "Job Card" button in the Main Form

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	2	System displays the form and then user enters the customer ID and press “Enter” button.
	3	Then the details are displayed in the empty fields and the table below.
	4	User presses the “Print the Job Card” button.
	5	System prompts a message asking whether the user wants to print the Job Card.
Extensions :	5.a.1	User select “ no ”
	5.a.2	Job card is not printed.

4.1.4.2. Services details use case scenario: Issue bill

Use Case Name	**Issue bill**	
Preconditions	System is up and running Stock manager must logged into the system Services employees must assign to works and customer should register and make an appointment.	
Primary Actors	Manager , Employee	
Main Flow of Events	Step	
	1	Use case starts with the user interface by clicking the “Service station bill” button in the Main Form
	2	System displays the form and then user enters the customer ID and press “Enter” button.
	3	Then the details are displayed in the empty fields and the table below.
	4	User adds extra materials used for the service.
	5	User press “Calculate total” and then system displays the total amount.
	6	User presses the “Print the bill” button.
	7	System prompts a message asking whether the

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		user wants to print the bill.
Extensions :	7.a.1	User select " no "
	7.a.2	Bill is not printed.

4.1.4.3. Services details use case scenario: View Current Schedule of works

Use Case Name	**View Current Schedule of works**	
Preconditions	System is up and running User has successfully logged in to the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	The use case begins when the user enters date and presses the button "view scheduled works".
	2	Use case ends after viewing the schedule details on a table

4.1.4.4. Services details use case scenario: Replace Current Schedule of Works

Use Case Name	**Replace Current Schedule of Works**	
Preconditions	System is up and running User has successfully logged in to the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Include:: (View Current Schedule of works)
	2	user enters the details about the schedule
	3	System asks user to confirm the changes
	4	User presses replace button
	5	Use case ends after displaying the message that schedule replaced successfully
Extensions :	5.a.1	User enter an invalid details
	5.a.2	Display the message that replacement is not done

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4.1.4.5. Services details use case scenario: View attendance.

Use Case Name	**View attendance.**	
Preconditions	System is up and running User has successfully logged in to the system.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	The user case begins when the user presses the button of "Manage employee jobs".
	2	User enters a date and press the "View attendance" button.
	3	Information about the attendance of employees is listed below on a table.

4.1.4.6. Services details use case scenario: Reserve employees to works

Use Case Name	**Reserve employees to works**	
Preconditions	System is up and running User has successfully logged in to the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Include :: (View attendance)
	2	Include :: (View customer appointments)
	3	User tabulates the employee ID, Name, and related services jobs and assign time period for each customer appointment according to the priority.
	4	User presses the "reserve" button to reserve the employees.
	5	Use case ends after displaying the message that the reservation successfully.
Extensions :	5.a.1	User enters an invalid employee ID.
	5.a.2	Display the message that the reservation cannot be done.

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4.1.4.7. Services details use case scenario: View customer appointments.

Use Case Name	**View customer appointments.**	
Preconditions	System is up and running User has successfully logged in to the system.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	The user case begins when the user presses the button of "Manage employee jobs".
	2	User enters a date and press the "view customer appointments" button.
	3	Information about the customer appointments are listed below on a table.

4.1.4.7. Services details use case scenario: Generate report

Use Case Name	**Generate report**	
Preconditions	System is up and running manager must logged into the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case starts with the user pressing the "Reports" button in the main form.
	2	Select the report that you want
	3	Click "Generate Report" Button
	4	Validate details
	5	System asks for confirmation about display report
	6	System displays the report
Extensions :	4.a.1	
	4.a.2	Go to step 2 again
	5.a.1	User does not confirm
	5.a.2	System ask to display report again by clicking generate report button

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4.1.4.8. Services details use case scenario: Search a service

Use Case Name	**Search a service**	
Preconditions	System is up and running manager must logged into the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case starts with the user clicking the "Manage services" button.
	2	User enters the service code.
	3	Click Search button
	4	Validate details
	5	Then output will be display using table
Extensions :	2.a.1	Doesn't type anything and click the button
	2.a.2	Displays all the services in the service station
	4.b.1	Type invalid code
	4.b.2	Table doesn't show any thing
	4.b.3	System will prompts to type valid code again

4.1.4.9. Services details use case scenario: Edit Service

Use Case Name	**Edit Service**	
Preconditions	System is up and running. manager must logged into the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Include:: (**Search a service**)
	2	Click the row that you want to edit and it will redirect output to relevant fields including service code.
	3	User enter and edit service charges, services name and service code and discounts
	4	Then system will display the total price
	5	Click "Update Inventory" Button
	6	Validate details
	7	System asks for confirmation about edit service details to the table.
	6.a.1	System displays the edited services details
Extensions :	6.a.2	User enter invalid details
	7.a.1	Go to step 2,3,4 again

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	7.a.2	User does not confirm
		System ask to edit fuel details again by clicking edit button

4.1.4.10. Services details use case scenario: Delete service

Use Case Name	**Delete service**	
Preconditions	System is up and running manager must logged into the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Include:: (**Search a service**)
	2	Click the row that you want to delete
	3	Click "Delete Service" Button
	4	System asks for confirmation about delete service details from the table.
	5	System remove the relevant service details
Extensions :	2.a.1	Doesn't click row and click delete button
	2.a.2	System ask to select the row
	5.a.1	User does not confirm
	5.a.2	System ask to delete service again by clicking delete button

4.1.4.11. Services details use case scenario: Add service to the table

Use Case Name	**Add service to the table**	
Preconditions	System is up and running manager must logged into the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case starts with the user entering the main form and clicking the "Mange services" button in the Main Form
	2	Select service code, service name, price, and discount.
	3	User enter enters service code, service name, price and discount.
	5	Click "Add service" Button
	6	Validate details
	7	System asks for confirmation about add service details to the table

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	8	System displays the service details
Extensions :	6.a.1	User enter invalid details
	6.a.2	Go to step 2,3,4 again
	7.a.1	User does not confirm
	7.a.2	System asks to add service details again by clicking add button.

4.1.5. General Account Management

4.1.5.1. General Account Management: Manage Cash Book.

Use Case Name	Manage Cash Book	
Preconditions	User has successfully logged into the system	
Primary Actors	Manager(Accountant)	
Main Flow of Events	Step	
	1	User selects General Account Management From the main interface.
	2	User clicks the Cash Book button.
	3 form.	System displays the Cash Book handling
	4	User selects the handling option.
	5	User fill out the information
	6	User clicks the relevant button.
	7 is	System displays a success message after task Complete.
Extensions	5.a.1	If user does not enter sufficient information, system prompts an error massage asking to Re-enter the correct data.

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4.1.5.2. General Account Management: Manage Mandatory Expenses

Use Case Name	Manage Mandatory Expenses	
Preconditions	User has successfully logged into the system	
Primary Actors	Manager(Accountant)	
Main Flow of Events	Step	
	1	User selects General Account Management From the main interface.
	2	User clicks the Expenses button.
	3	System displays the Expenses handling Form.
	4	User selects the handling option.
	5	User fill out the information
	6	User clicks the relevant button.
	7 is	System displays a success message after task Complete.
Extensions	5.a.1	If user does not enter sufficient information , system prompts an error massage asking to Re-enter the correct data.

4.1.5.3. General Account Management: Generate Cash Book Reports

Use Case Name	Generate Cash Book Reports	
Preconditions	User has successfully logged into the system	
Primary Actors	Manager(Accountant)	
Main Flow of Events	Step	
	1	User selects General Account Management From the main interface.
	2	User clicks the Reports button.
	3	System displays the Reports handling Form.
	4	User selects the cash book tab
	5	User fill out the information
	6	User clicks the relevant Generate Report

	button.	
	7	System displays the report.
	8 of	System prompts the user if wants a hard print The report.
Extensions	5.a.1	If user does not enter sufficient information, system prompts an error massage asking to Re-enter the correct data.
	8.a.1	If user clicks the Yes button, system will Prompt the status message.
	8.b.1 discard	If user clicks the No button, system will The prompt box.

4.1.5.4. General Account Management: Generate Mandatory Expenses Reports

Use Case Name	Generate Mandatory Expenses Reports	
Preconditions	User has successfully logged into the system	
Primary Actors	Manager(Accountant)	
Main Flow of Events	Step	
	1	User selects General Account Management From the main interface.
	2	User clicks the Reports button.
	3	System displays the Reports handling Form.
	4	User selects the Expenses tab
	5	User fill out the information
	6 button.	User clicks the relevant Generate Report
	7	System displays the report.
	8 of	System prompts the user if wants a hard print the report.
Extensions	5.a.1	If user does not enter sufficient information,

	system prompts an error massage asking to re-enter the correct data.
	8.a.1 If user clicks the Yes button, system will Prompt the status message.
	8.b.1 If user clicks the No button, system will discard The prompt box.

4.1.6. Customer and Vehicle Management

4.1.6.1. Customer and Vehicle Management: Manage Booking

Use Case Name	Manage Booking	
Preconditions	System is up and running. User has successfully logged in to the system. Customer should be a registered customer.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case starts when the user wants to manage booking
	2	User will be directed into the Manage Booking interface.
	3	User can see three possible managing booking options.
	4	Add a new booking, Delete an existing booking, Update an existing booking
	5	User selects the relevant option.
Extentions	4.a	If user enters Add a new booking option he will be directed into that page. And will add the details of the customer and the booking.
	4.b	If user enters Delete an existing booking he will be directed into that page. And will enter the booking id and select the delete button. If user enters Update an existing booking he will enter the new details in that page when the system displays the previous details.

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4.1.6.2. Customer and Vehicle Management: Specify a job

Use Case Name	Specify a job	
Preconditions	System is up and running. User has successfully logged in to the system.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case starts when the user wants to specify the job customer wants from the service station.
	2	User enters the service name and service code along with the customer details.
	3	System enters the relevant date in the database.
	4	Use case ends when the "successfully entered" message is displayed.
	5	Use case starts when the user wants to specify the job customer wants from the service station.

4.1.6.3. Customer and Vehicle Management: Register customer.

Use Case Name	Register customer.	
Preconditions	System is up and running. User has successfully logged in to the system.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case begins when a new customer arrives to the service station wants to become a registered customer.
	2	User is directed into the Register customer interface.
	3	User enters the details of the customer and their vehicle details and their specification as, General customer service station, Credit customer
	4	System adds the entered details into the database.
	5	Use case ends when the system prompt the

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		"Successfully added" message.

4.1.6.4. Customer and Vehicle Management: Delete customer

Use Case Name	Delete customer	
Preconditions	System is up and running. User has successfully logged in to the system.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case begins when the customer wants to unregister himself from the system.
	2	User goes to the Delete customer interface.
	3	System asks for the customer ID and to confirm it.
	4	System deletes that customer from the database.
	5	Use case ends when the system prompt the "Successfully deleted" message.

4.1.6.5. Customer and Vehicle Management: Update customer.

Use Case Name	Update customer.	
Preconditions	System is up and running. User has successfully logged in to the system.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case begins when the customer wants to update information of him.
	2	User goes to the Update customer interface.
	3	He enters the customer ID.
	4	System displays the current information of the customer.
	5	User updates the required information.
	6	System updates the database with recently added details.
	7	Use case ends when the system prompt the "Successfully updated" message

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4.1.6.6. Customer and Vehicle Management: Issue bill.

Use Case Name	Issue bill.	
Preconditions	System is up and running. User has successfully logged in to the system. Customer should be a registered customer.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case begins when the customer arrives to the service station wants to buy a service related products.
	2	User enters the product codes of and the quantity of the purchased products.
	3	System gets the prices of the products and calculates the total cost.
	4	When the customer pays that amount user will enter the payment details as well.

4.1.6.7. Customer and Vehicle Management: Generate customer detail reports.

Use Case Name	Generate customer detail reports.	
Preconditions	System is up and running. User has successfully logged in to the system.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case begins when the user wants to get a detailed report on the customers of the company.
	2	User goes to the report generation interface.
	3	He selects the relevant option. Such as,
	4	Customer Vehicle details

4.1.6.8. Customer and Vehicle Management: Manage credit customer details.

Use Case Name	Manage credit customer details.
Preconditions	System is up and running. User has successfully logged in to the system. Customer should be a registered customer.
Primary Actors	Manager

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Main Flow of Events	Step	
	1	Use case begins when the user wants to manage the details of the credit customer.
	2	He goes to the Manage credit customer interface.
	3	He can select several options such as, Enter the deposited amount, Deduct from the deposit, Check the balance
	4	User clicks on the desired option.
Extensions	5	Use case ends when the user is directed into the relevant interface.
	4.a	If user selects enter the deposited amount option he will enter the customer details and the deposited amount into the system.
	4.b	If the user selects Deduct from the deposit option he will enter the service and fuel detail he bought. And system calculates the cost for the service or fuel or the both and deduct that amount from the system.
	4.c	If the user selects the check the balance option he will the customer ID and system sill display the balance.

4.1.6.9. Customer and Vehicle Management: Schedule Services Orders.

Use Case Name	Schedule Services Orders.	
Preconditions	System is up and running. User has successfully logged in to the system.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case begins when the user wants to schedule the bookings of the customer for a day.
	2	User checks for the dates required by the customer and enter the booking details for that day System enters those details into the system.
	4	Use case begins when the user wants to schedule the bookings of the customer for a day.
Extensions	2.a	if the required date is already full notify the customer.
	2.b	if the required date is scheduled also notify the

**

		customer

4.1.6.10. Customer and Vehicle Management: Manage product order.

Use Case Name	Manage product order.	
Preconditions	System is up and running. User has successfully logged in to the system.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case begins when the user wants to manage the product order.
	2	He will be directed into the Manage product order interface.
	3	He can select any of the following. Make product order, Cancel product order, Update product order.
	4	User selects the relevant option
	5	Use case ends when the user is directed into the relevant page.
Extensions	4.a	If the user selects the Make product order option he will enter the product order details along with the customer details.
	4.b	If the user selects the Cancel product order option he will enter the product order ID and system will delete the record.
	4.c	If the user selects the Update product order option he will enter the product order ID and after system displays the previously done details, he will enter new details.

4.1.7. Attendance and Payroll Management

4.1.7.1 Use case name: Manage attendance details

Use Case Name	Manage attendance details
Preconditions	User should login to the system in order to manage attendance.

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Primary Actors	Manager	
Main Flow of Events	Step	
	1	The use case begins when user clicks on "View attendance" button.
	2	System prompts for the employee id.
	3	User inserts an employee id.
	4	System prompts two options "daily" and"monthly"
	5	System displays employee's attendance relevant to the employee id and user option.
	6	User clicks on "Generate Report" button.
	7	System generates the report and display.
Extensions :	3.a.1	Employee id not valid -Notify user to enter a correct employee id.
	3.a.2	User skip inserting employee id -System displays attendance details for all the employees.

4.1.7.2Use case name: Manage employee payment

Use Case Name	Manage employee payment	
Preconditions	User should login to the system in order to manage payroll.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case begins when user clicks on "payroll management"
	2	User can choose one option from manage salary item details, generate salary reports and calculate total salary.
	3	System leads user according to user choice and use case ends.

4.1.7.3 Use case name: Manage salary item details

Use Case Name	Manage salary item details	
Preconditions	User should login to the system	
Primary Actors	Manager	
Main Flow of Events	Step	

**

	1	Use case begins when user clicks on “Salary Items” button.
	2	System prompts three options add, update , delete.
	3	User selects one option
	4	System leads user according to user choice and use case ends
Extensions :	2.a.1	User clicks add button -User can add new salary items with a unique item no.
	2.a.2	User clicks on Update button -User enters the item no and system prompts the available details. User changes the details.
	2.a.3	User clicks on Delete button -User enters an item no and record related to that item no will be deleted.

4.1.7.4Use case name: Generate Salary Reports

Use Case Name	Generate Salary Reports	
Preconditions	User should login to the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case begins when user clicks on “Reports.
	2	System Displays salary records of last pay date.
	3	User clicks on “Generate Reports”
	4	Reports are generated and use case ends.

4.1.7.5 Use case name: Print Salary Slip

Use Case Name	Print Salary Slip	
Preconditions	User should login to the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case begins when user inserts an employee id.
	2	System displays all the salary details of the particular employee.
	3	User clicks on “Print Salary Slip” button.
	4	System prints the salary slip and use case ends.

**

Extensions :	1.a.1	Employee id not valid -Notify user to enter a correct employee id.

4.1.7.6 Use case name: Calculate Gross Pay

Use Case Name	Calculate Gross Pay	
Preconditions	User should login to the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case begins when user inserts an employee id.
	2	System Displays basic salary and other fixed allowances of a particular employee.
	3	User clicks on “calculate” button.
	4	Gross pay is calculated and calculated value will be stored in the system.
Extensions :	1.a.1	Employee id not valid -Notify user to enter a correct employee id.

4.1.7.7 Use case name : Perform Additions and Deductions

Use Case Name	Perform Additions and Deductions	
Preconditions	User should login to the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Use case begins when user inserts an employee id.
	2	User clicks on “calculate” button.
	3	The amount for each salary item will be calculated, displayed and stored in the system.
	4	User clicks on “add or deduct” button.
	5	System add/ deduct to/from gross pay , display and store the amount in the system.
Extensions :	1.a.1	Employee id not valid -Notify user to enter a correct employee id.

4.1.7.8 Use case name : Calculate Total Salary

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Use Case Name	Calculate Total Salary	
Preconditions	User should login to the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Include: UC6 Calculate Gross Pay
	2	Include: UC7 Perform Additions and Deductions
	3	Include: UC5 Print Salary Slip
	4	Salary payment is done for the particular employee and payment information will be stored in the system

4.1.7.9 Use case name: Search Employee

Use Case Name	Perform Additions and Deductions	
Preconditions	User should login to the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	User Inserts an employee id.
	2	System validates the employee id and display details
Extensions :	1.a.1	Employee id not valid -Notify user to enter a correct employee id.

4.1.7.10 Use case name: Mark Attendance

Use Case Name	Perform Additions and Deductions	
Preconditions	User should login to the system	
Primary Actors	Data Entry Operator	
Main Flow of Events	Step	
	1	Include: UC9 Search Employee
	2	User clicks on a button and in/out time will be stored in the system.
Extensions :	2.a.1	User clicks on In button - System records in time of employee.
	2.a.2	User clicks on Out button - System records out time of employee.

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4.1.8. Machine Supply Controlling Management

4.1.8.1 Use case name: Store machine information

Use Case Name	Store Machine information	
Preconditions	System is up and running User has successfully logged in to the system	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Add all machine information to the machine data base
	2	Categorized machines according to the type
	3	After adding generate primary key for the machines
	4	Delete unnecessary records
	5	Modify records when necessary
	6	search necessary details
	7	Prompt successful messages

4.1.8.2 Use case name: Manage machine Supplier

Use Case Name	Manage machine suppliers	
Preconditions	System is up and running User has successfully logged in to the system Internet connectivity	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Add all supplier information to the supplier data base
	2	After adding generate primary key for the supplier
	3	Delete unnecessary records
	4	Modify records when necessary
	5	search necessary details
	6	Prompt successful messages
	7	Send email to the supplier

**

4.1.8.3 Use case name: Manage Machine maintenance.

Use Case Name	Manage Machine maintenance.	
Preconditions	System is up and running User has successfully logged in to the system Machine information should retrieve.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Get necessary machine information
	2	Add maintenance description.
	3	Add maintainer information to maintainer database
	4	After adding generate primary key for the maintenance information.
	5	Delete unnecessary records
	6	Modify records when necessary
	7	When the maintenance is complete update status to maintained
	8	Then add expenses for particular maintenance.
	9	search necessary details
	10	Prompt successful messages

4.1.8.4 Use case name: Manage Machine replacement.

Use Case Name	Manage machine replacement	
Preconditions	System is up and running User has successfully logged in to the system Machine information database should be created.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Get necessary machine information
	2	Add replacement description.
	3	After adding generate primary key for the replacement information.
	4	Delete unnecessary records
	5	Modify records when necessary
	6	When the replacement is complete update status to replace.
	7	Then add replacing expenses for particular replacement.
	8	search necessary details

**

4.1.8.5 Use case name: Manage machine purchases.

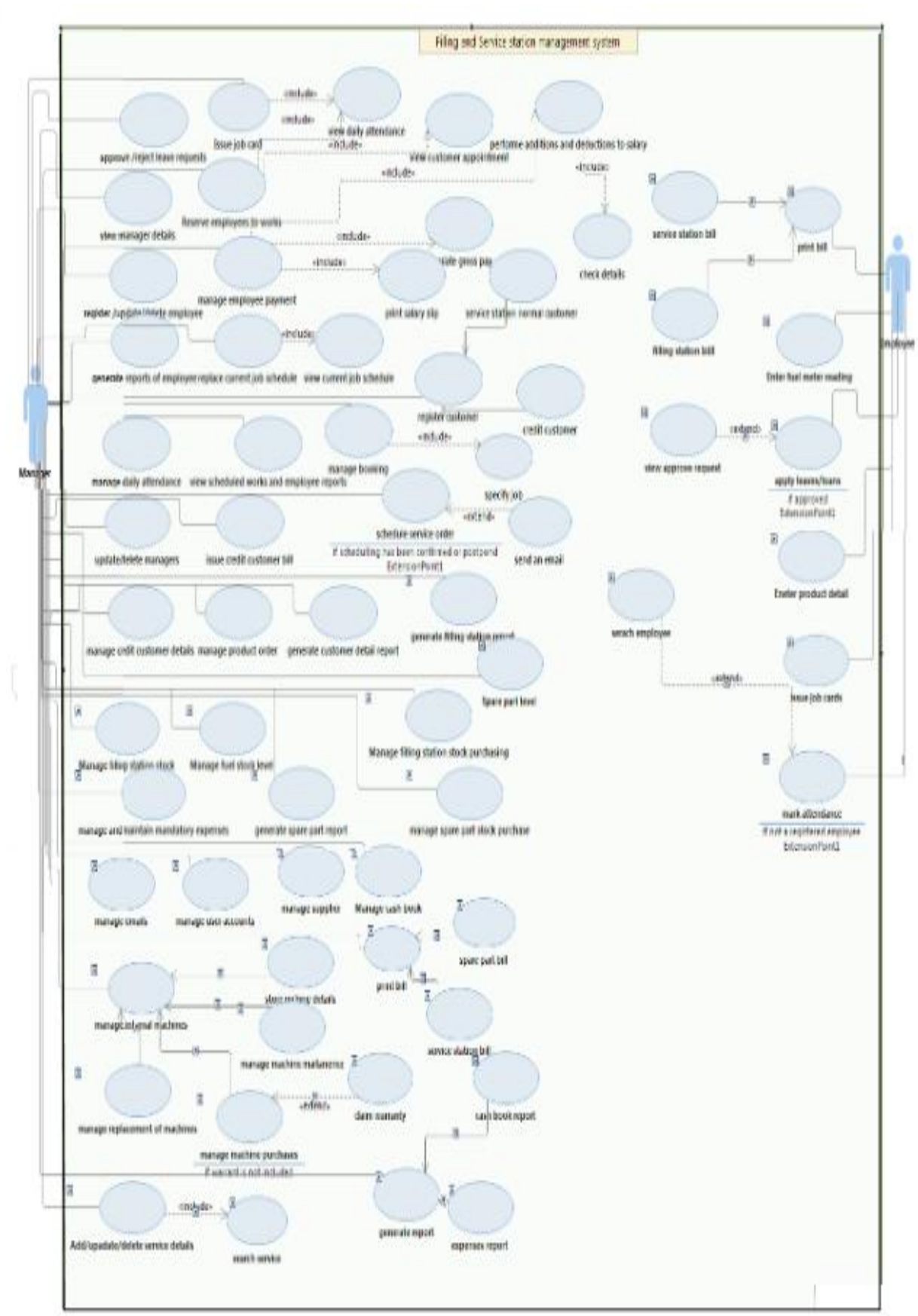
Use Case Name	Manage machine purchases.	
Preconditions	System is up and running User has successfully logged in to the system Machine information should retrieve.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Add all new machine information to machine database.
	2	Categorized machines according to the type
	3	After adding generate primary key for the New machine.
	4	Add purchase information to the buy table.
	5	Assign machine primary key to the table.
	6	Delete unnecessary records from the buy table.
	7	search necessary details
	8	Prompt successful messages
Extensions :	1.a.1	Search warrant information
	1.a.2	If Warranty information is not there prompt user to warranty claim.

4.1.8.6 Use case name: Manage Email information.

Use Case Name	Manage Email information.	
Preconditions	Internet connectivity. Correctly created email.	
Primary Actors	Manager	
Main Flow of Events	Step	
	1	Get necessary Email information
	2	Add Email information.
	3	After adding generate primary key for the Email information.
	4	Delete unnecessary records
	5	Modify records when necessary
	6	When the email is sent successfully update status to sent.
	7	search necessary details

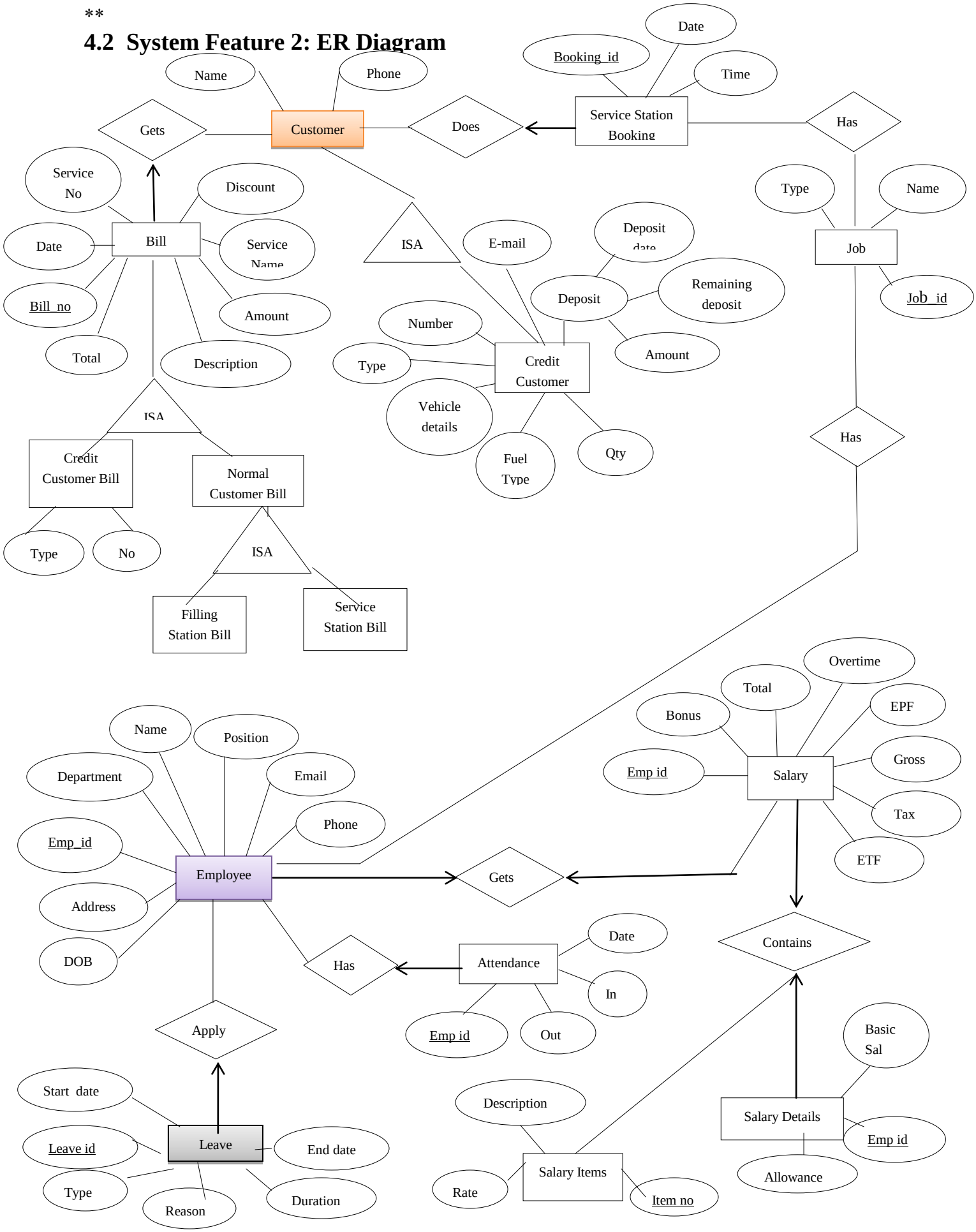
**

Use Case Diagram

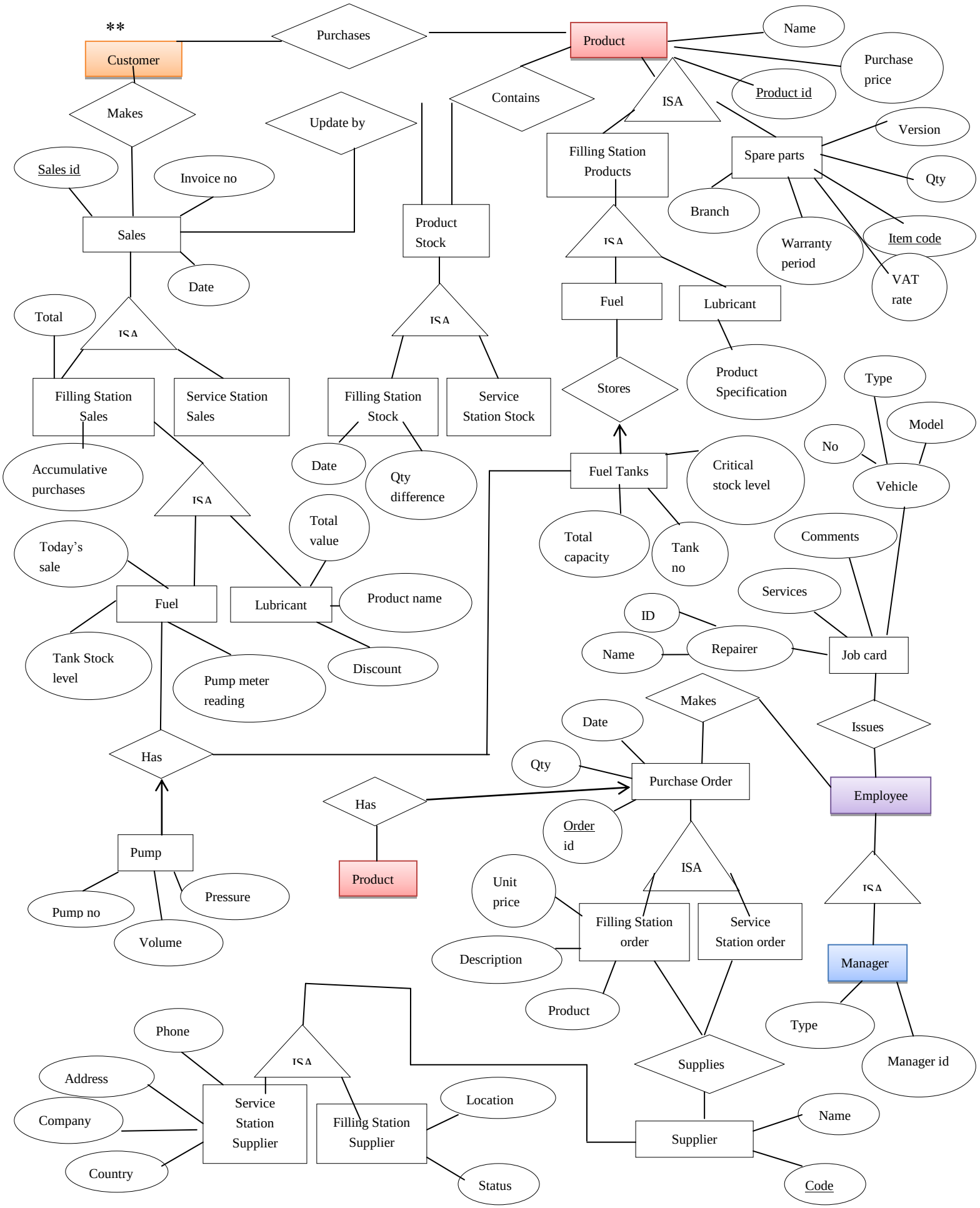


**

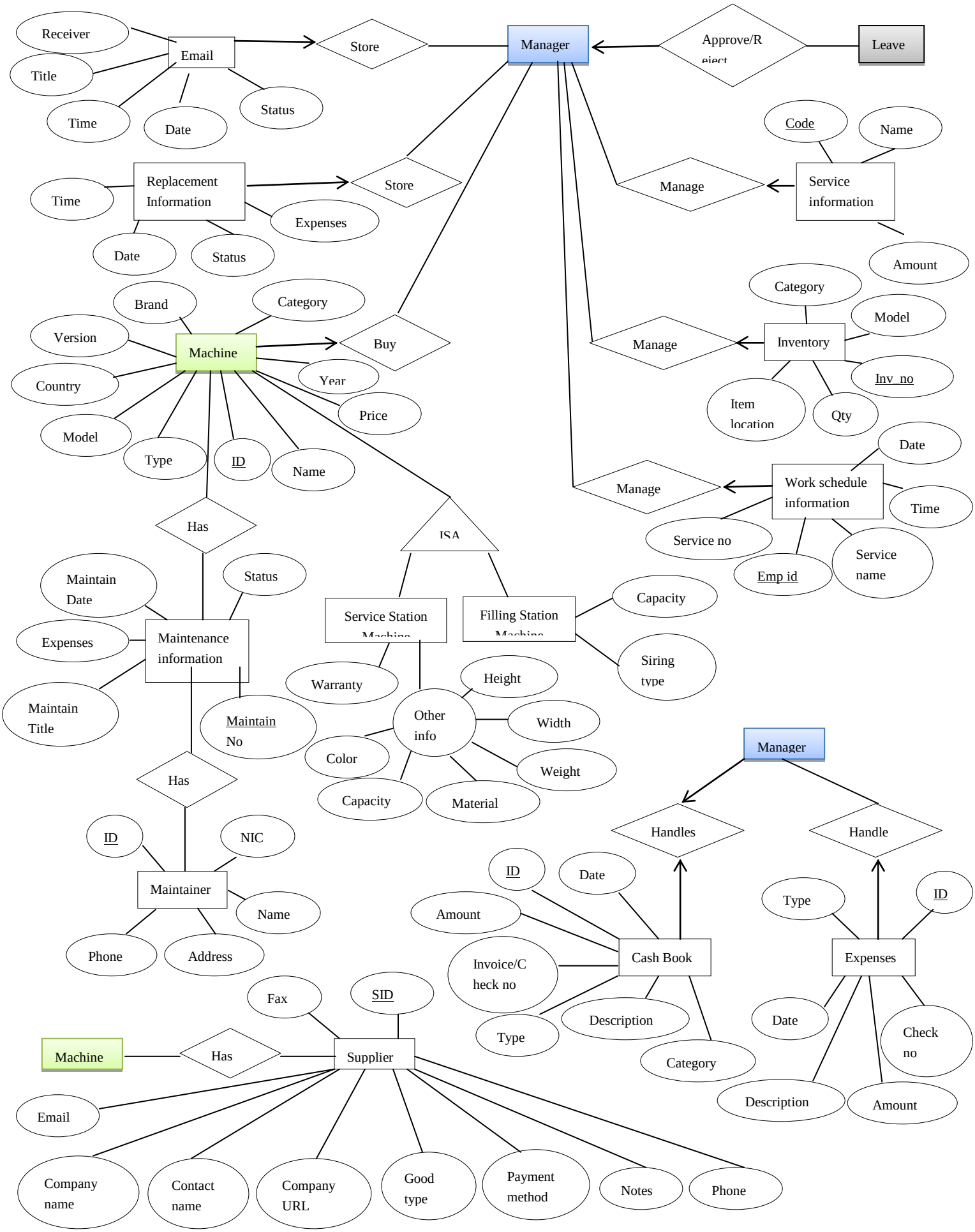
4.2 System Feature 2: ER Diagram



FILLING –SERVICE STATION MANAGEMENT SYSTEM



FILLING –SERVICE STATION MANAGEMENT SYSTEM



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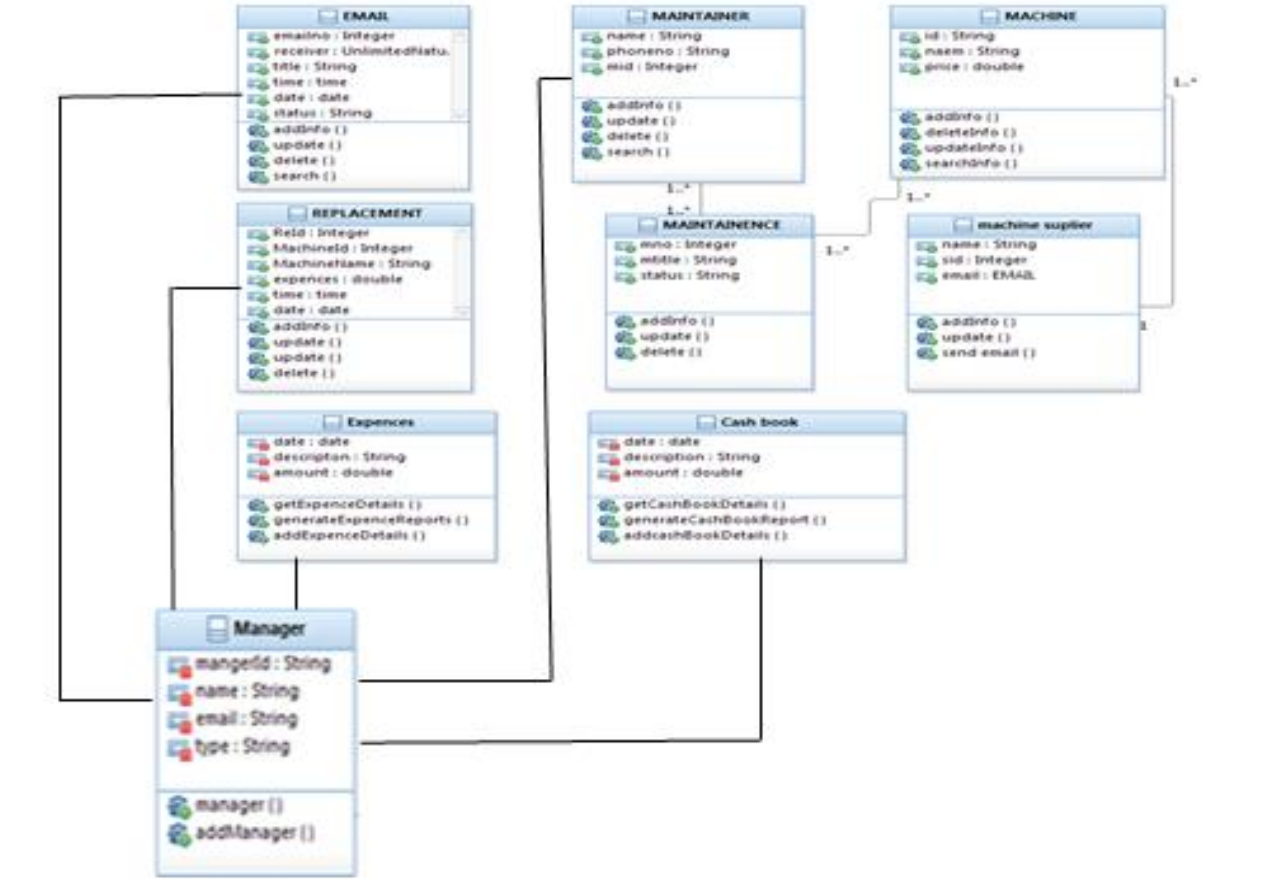
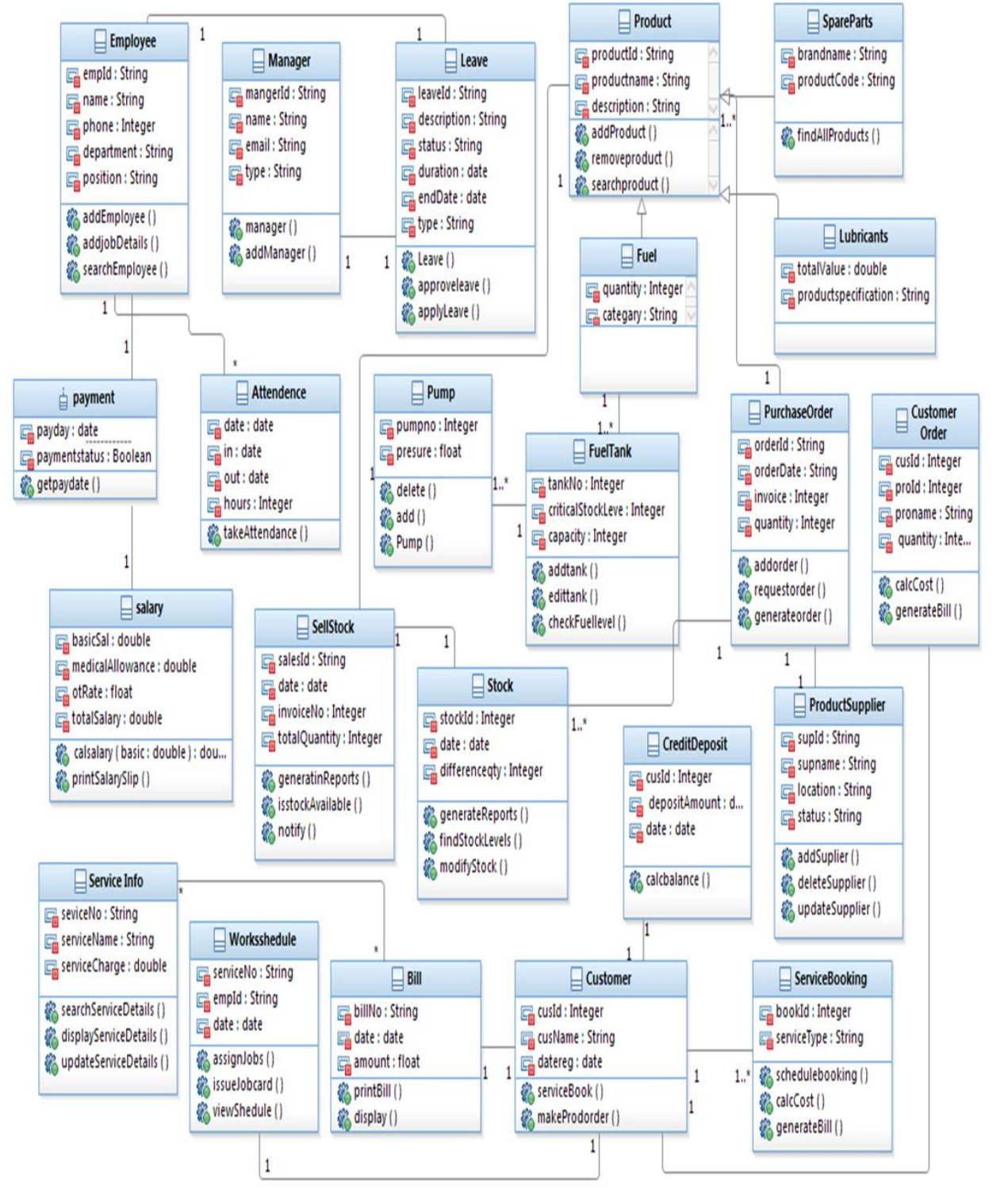
4.3 System Feature 3: Class Diagram



FILLING –SERVICE STATION MANAGEMENT SYSTEM

**



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5. Other Nonfunctional Requirements

5.1. Performance Requirements

Filling and Service Station Management System will be used by multiple users simultaneously. It should be validate the users within few seconds when they logged in to the system. System must be interactive and the delays involved must be less. So every action-response of the system, there are no immediate delays. In case of opening windows forms, of popping error messages there is delay much below 2 seconds. The system shall be able to add, delete, edit employee details, attendance, stock and sales details, supplier details, order details etc within few seconds. Report can be generated without any effort using the inserted analyzed data. Handling salary rates, payment methods, and OT rates, basic salary becomes easy and calculating their payments within fewer times. Retrieving daily sales details, total expenditures and displaying monthly reports can be done within few seconds.

5.2. Safety Requirements

Our system has database backup system. Using that we can save the database as a file in database hosted machine. When formatting or happening any failures to the PC data will not be loss.

5.3. Security Requirements

There are only four users: Sales manager, HR manager, Account manager and Data entry operator respectively accessing the system. The filling and service station management system will validate the user login for the purpose of filtering authorized users who is mainly handling the main functions of this system as HR management, Payroll management, Stock and sales management, order and purchasing management etc. Depending upon the category of users the access rights are decided. This process will handle by providing the user name and password for each user which will be encrypted using algorithms and will store in the database.

5.4. Software Quality Attributes

Reliability: our system can process information very quickly and same tasks can be performed again and again without making mistakes.

Maintainability: This system shall provide the capability to back-up the data.

**

Usability: As the system this system is easy to handle and navigates in the most expected way within no delays. Some important reports can be generated via this system. All the details can be managed and handle with ease. Monthly profit report can be generating via the system. This reduces the effort that our client puts into generate it manually.

More accurate: by using this system, possibility of occurring human errors will be less. Therefor calculations will be more accurate than the current manual system.

Reducing time consuming: Earlier filling and service station has data recording, reeving, and manipulating using file based system. But now they can handle them through this automated system easily than above system. . Due to this reason management can overcome from time consuming problem.

Availability of data: The data will be available at any time as they have stored it in a proper manner.

Easy to access: By using system, user can quickly search and customize the appropriate data about fuel management, spare part management, order management, attendance and salary management. Because management input all the data in one place therefor don't have to access lot of file. So it is very easy to access data.

5.5. Business Rules

The user logins and passwords will be handled by the, Sales Manager and HR Manager and Account manager and Data entry operator. The system can be used only by those four persons.

Sales Manager should be facilitated to handling Stock details, Sales details, Maintenances details and Supplier Details also Account Manager is authorized expenses and income management, and also HR manager should be facilitated to handling attendance, salary management and employee management.

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