



**MOBILE GARAGE
LARNACA**

Software Requirements Specification

Final Version

Antonis Andreou
Gabriel Vasile
Georgios Architektonidis
Jorgos Xidias
Kyriacos Andreou
Stylianios Kyprianou

REVISION CHART

Version	Primary Author(s)	Description of Version	Date Completed
Version 1	Antonis Andreou Gabriel Vasile Georgios Architektonidis Jorgos Xidias Kyriacos Andreou Stylianos Kyprianou	In this initial version, the focus was on outlining and documenting all the fundamental requirements and key details for the system.	23/12/2024
Final Version	Antonis Andreou Gabriel Vasile Georgios Architektonidis Jorgos Xidias Kyriacos Andreou Stylianos Kyprianou	In this version new features were added, and corrections were made to the document.	19/01/2025

CONTENTS

1.	INTRODUCTION	4
1.1	PURPOSE	4
1.2	SCOPE	4
1.3	DEFINITIONS, ACRONYMS, AND ABBREVIATIONS	4
1.4	REFERENCES	5
1.5	OVERVIEW	5
2	OVERALL DESCRIPTION	7
2.1	PRODUCT PERSPECTIVE	7
2.1.1	<i>System Interfaces</i>	7
2.1.2	<i>User Interfaces</i>	7
2.1.3	<i>Hardware Interfaces</i>	8
2.1.4	<i>Software Interfaces</i>	8
2.1.5	<i>Communications Interfaces</i>	9
2.1.6	<i>Memory Constraints</i>	9
2.1.7	<i>Operations</i>	9
2.1.8	<i>Site Adaptation Requirements</i>	10
2.2	PRODUCT FUNCTIONS	10
2.3	USER CHARACTERISTICS	12
2.4	CONSTRAINTS	12
2.5	ASSUMPTIONS AND DEPENDENCIES	12
2.6	APPORTIONING OF REQUIREMENTS	12
3.	SPECIFIC REQUIREMENTS	13
3.1	EXTERNAL INTERFACE REQUIREMENTS	13
3.1.1	<i>User Interfaces</i>	13
3.1.2	<i>Hardware Interfaces</i>	19
3.1.3	<i>Software Interfaces</i>	20
3.1.4	<i>Communications Interfaces</i>	20
3.2	SOFTWARE PRODUCT FEATURES	22
3.2.1	<i>User Access</i>	22
3.2.2	<i>Jobs Management</i>	23
3.2.3	<i>Parts Management</i>	26
3.2.4	<i>Customer Management</i>	30
3.2.5	<i>Accounting Management</i>	33
3.2.6	<i>User Management</i>	36
3.2.7	<i>Invoice Management</i>	37
3.2.8	<i>Cars Management</i>	40
3.3	PERFORMANCE REQUIREMENTS	43
3.4	DESIGN CONSTRAINTS	43
3.4.1	<i>Cross-Platform Compatibility</i>	43

3.4.2	Mobile Responsiveness	44
3.4.3	Network Requirements	44
3.4.4	Mobile Performance Optimization.....	44
3.4.5	Security and Data Protection.....	44
3.5	SOFTWARE SYSTEM ATTRIBUTES	44
3.5.1	Reliability.....	44
3.5.2	Availability.....	44
3.5.3	Security.....	45
3.5.4	Maintainability.....	45
3.5.5	Portability.....	45
3.6	LOGICAL DATABASE REQUIREMENTS	45
3.7	OTHER REQUIREMENTS.....	47
4.	APPENDICES	48
	Figure 4.1.1: Login Page.....	48
	Figure 4.1.2: Login Page Error.....	48
	Figure 4.1.3: Dashboard	49
	Figure 4.1.4: Customer Page.....	49
	Figure 4.1.5: New Customer Page	50
	Figure 4.1.6: View Customer Info Page	50
	Figure 4.1.7: Accounting Page.....	51
	Figure 4.1.8: Accounting - Customer Job Info Page	51
	Figure 4.1.9: Accounting - Parts Info Page	52
	Figure 4.1.10: Accounting - Printing Options Page.....	52
	Figure 4.1.11: Parts Page.....	53
	Figure 4.1.12: New Part Page	53
	Figure 4.1.13: View Part Page.....	54
	Figure 4.1.14: Jobs Page	54
	Figure 4.1.15: New Job - Card button Page.....	55
	Figure 4.1.16: New Job Card - Existing Customer Page	56
	Figure 4.1.17: New Job Card - One-Time Customer Page	57
	Figure 4.1.18: Job Card - Open Job Page.....	58
	Figure 4.1.19: Job Card - Closed Job Page.....	59
	Figure 4.1.20: Profile - Drop Down Menu	60
	Figure 4.1.21: Backup - Pop Up Screen.....	60
	Figure 4.1.22: Restore - Pop Up Screen	61
	Figure 4.1.23: User Management – All Users Page.....	61
	Figure 4.1.24: User Management – User Info Page	62
	Figure 4.1.25: User Management – Create New User Page.....	62
	Figure 4.1.26: User Management – New User First Log In Page.....	63
	Figure 4.1.27: Customers - Print Options Pop Up	63

1. INTRODUCTION

1.1 Purpose

The purpose of this document is to provide a thorough analysis of the requirements the company "Mobile Garage Larnaca" has for their system. Specifically, it will highlight the basic functions the company wishes for the system to provide. By reviewing this document, we will have a complete understanding of the company's wants and needs.

1.2 Scope

The system caters to the specific needs of the Mobile Garage company by providing a comprehensive web application. From the user's perspective, the system will provide tools to effectively manage and update the inventory of parts, including the ability to add, edit, or remove items as needed. Users will also be able to input invoice details into the system, along with the parts purchased with each invoice. In addition, the system will maintain a detailed database of client information, including essential details such as name, contact information, service address, cars, and transaction history. This ensures that all client interactions are efficiently recorded and tracked. Additionally, the system will include the details of each ongoing or finished job. The administrator will have full access to these functionalities but will also be able to manage user accounts, including creating new ones, editing existing accounts, or deleting them if necessary. Lastly, the system will offer the ability to generate detailed annual and monthly statistics to assist in analyzing business performance and planning future strategies. By providing these functionalities, the platform will support the growth and operational efficiency of the Mobile Garage company.

1.3 Definitions, Acronyms, and Abbreviations

- Administrator (Admin): Refers to the individual responsible for managing the system. The administrator has the authority to oversee all system operations, including customer management, inventory control, job card creation, and the generation of statistical reports.
- User: Refers to the registered employees of the mobile garage company who interact with the system to manage customer records, schedule appointments, track job statuses, and update inventory.
- Client: Refers to the customers of the mobile garage company who request services or purchase products. Clients may include individual customers or corporate entities.
- Job Card: A digital document created for each job undertaken by the company. It includes comprehensive information such as customer details, vehicle data, job descriptions, parts used, costs, and service completion status.
- Drop-down List: A user interface element that presents a list of selectable options, allowing users to choose one value at a time.

- Check Box: A user interface component that allows users to select or deselect specific options within a form or task.
- RAM (Random Access Memory): A type of volatile memory that temporarily stores data required for the system's operation, ensuring smooth and efficient performance.
- HTTPS (Hypertext Transfer Protocol Secure): A secure communication protocol used to encrypt data transmitted between the client (user) and the server, ensuring data privacy and protection.
- MFA (Multi-Factor Authentication): A security mechanism requiring users to provide two or more verification methods to access the system, enhancing protection against unauthorized access.
- VIN (Vehicle Identification Number): A unique identifier assigned to every motor vehicle, which is used for tracking and distinguishing vehicles in the system.
- REST API (Representational State Transfer Application Programming Interface): A standardized communication method used to enable the interaction between the system's frontend and backend components.
- Database: A structured and centralized repository used to store and manage all system data, including customer records, inventory details, job information, and transaction history.
- JSON (JavaScript Object Notation): A lightweight data format utilized for transmitting information between different components of the system, ensuring seamless and efficient communication.
- SSL/TLS (Secure Sockets Layer / Transport Layer Security): Protocols used to encrypt and secure data transmission over the internet, protecting sensitive information such as login credentials and customer details.

1.4 References

Software Technology course CEI_324.

1.5 Overview

This document provides a detailed analysis of the development process for the system designed for the "Mobile Garage" company. More specifically, Section 2 will explore the product's perspective, offering a clearer understanding of its role and functionality within the system. It will also examine the system interfaces, user interfaces, software and communication connections, as well as constraints such as memory usage, user characteristics, and operational functionalities. In Section 3, the document will explain the specific requirements for each interface, the features of the product and software system, and the detailed description of its functionalities. Additionally, constraints and

requirements will be analyzed in greater depth to ensure a comprehensive understanding of the system's capabilities and limitations. Finally, Section 4 will include relevant appendices that provide supplementary details to support the system's development and implementation.

2 OVERALL DESCRIPTION

2.1 Product Perspective

The main goal of the system is to help the administrators to have all their data in a place, organized and safe. The system will integrate essential functionalities such as customer management, parts/inventory management, car information and service job cards. It will simplify and optimize operations by reducing manual tasks and ensuring data accuracy. Additionally, the system will provide secure data storage and access, allowing administrators to access information quickly and efficiently.

2.1.1 System Interfaces

The present company does not have any system that stores its data. Almost all the data is stored in Excel.

2.1.2 User Interfaces

Administrator

Initially, administrators will need to log in to the system by entering their **Username** and **Password** to gain access to the system and its data. In case of an incorrect Username or Password, the system will ask the user to input them again. Upon successful login, administrators will have the right to open and make changes to the following windows.

In the **Dashboard** window, they will be able to:

- View the calendar.
- Add a new customer.
- Add a new part.
- Add a new job card.
- Add a new invoice.
- View this week's current new net income and weekly jobs.

In the **Customers** window, they will be able to:

- Add/Remove new customers.
- View existing customers and their data.
- Print a list of customers or a specific customer.

In the **Parts** window, they will be able to:

- Add/Remove new parts.
- View existing parts and their information.
- Print a list of parts or a specific part.

In the **Accounting** window, they will be able to:

- View current month's income, expenses, profit.
- View a graph of expenses and incomes.
- Print job cards details.
- Print parts details.
- Print extra expenses
- Print Finances

In the **Jobs** window, they will be able to create a new work order for a customer based on whether:

- Add/Remove new job cards.
- View existing job cards and their information.
- Print a list of job cards or a specific job card/invoice.

The user will also be able to view all 'Job Cards' of all ongoing or finished jobs.

In the **Invoices** window, they will be able to:

- Add/Remove new job cards.
- View existing invoices and their information.
- Print a list of invoices or a specific invoice.

Administrators will have access to all the mentioned actions and data.

2.1.3 Hardware Interfaces

The administrator's access to the system will be straightforward, without the need for any specialized hardware. The system can be operated using a desktop or laptop computer, providing the ability to access it when needed to make the required changes. Additionally, any network-connected device, such as mobile phones and tablets, will also be able to use the system easily. Data will be securely stored on a server, with hosting services provided through a monthly subscription fee, which the company owner is already covering.

2.1.4 Software Interfaces

Our system will be developed using a range of tools, including HTML, CSS, and JavaScript for the development of the web frontend. On the server side, PHP will be utilized to process

the system's backend logic and create REST APIs, while MySQL will be used to securely and reliably store and manage data, including customer information, part data, job cards and other related records. Communication between the frontend and backend will be facilitated through REST API calls, enabling structured and efficient data exchange.

The development process will take place in Visual Studio Code, a powerful tool that supports efficient and well-organized code creation. The system will be accessible via web browsers such as Google Chrome, Firefox, Edge and Safari, ensuring seamless functionality across both desktop and mobile devices. Additionally, it will be compatible with major operating systems, including Windows, Linux, MacOS, Android, and iOS, providing smooth operation across diverse environments.

2.1.5 Communications Interfaces

The system will be used by the company's administrators and by anyone authorized by them. Since the system is a web-app the access to it will be possible from any device connected to the internet. In order to connect to the system, it requires the proper use of the Username and Password to grant the user the ability to access the system.

2.1.6 Memory Constraints

The system's RAM usage is minimal, with most processing and storage handled on company-rented servers. The front end requires at least 4 GB of RAM for smooth operation, with minimal client-side storage as data is loaded from the server. The backend server needs at least 8 GB of RAM to manage concurrent requests, database operations, and APIs, with higher resources recommended for increased traffic. A network connection of at least 5 Mbps ensures real-time data transfer. The company's current equipment meets these requirements, supporting reliable and efficient system performance.

2.1.7 Operations

The system will automatically perform daily backups of the data (such as customer information and job cards) to a secure cloud server. In the event of a failure or mistake, the system will have a recovery mechanism to restore the latest backups, ensuring that no customer or service data is lost. Additionally, these functions contribute to the protection of data from any malicious actions.

2.1.8 Site Adaptation Requirements

The system is currently in its early stages. Initially, all handwritten records and data stored in Excel will need to be gathered and entered into the database. Each catalog will store specific information, such as job details and client data, including the customer's name, phone number, date of contact, address, car brand, model, engine capacity (CC), fuel type, VIN, engine number, mileage, and details about the job.

The catalog is designed to simplify the organization of job-related information, helping users easily manage and track customer data for better workflow and service.

2.2 Product Functions

2.2.1 User Access

- 2.2.1.1 Login
- 2.2.1.2 Forgot Password
- 2.2.1.3 Logout

2.2.2 Jobs Management

- 2.2.2.1 Add New Job Card
- 2.2.2.2 Edit Job Card
- 2.2.2.3 Delete Job Card
- 2.2.2.4 Search Job Card
- 2.2.2.5 Print Job Card List
- 2.2.2.6 Create Invoice/Print Job Card

2.2.3 Parts Management

- 2.2.3.1 Add New Part
- 2.2.3.2 Print Part List
- 2.2.3.3 Edit Part
- 2.2.3.4 Delete Part
- 2.2.3.5 Search Part
- 2.2.3.6 Print Part

2.2.4 Customer Management

- 2.2.4.1 Add New Customer
- 2.2.4.2 Print Customer List
- 2.2.4.3 Edit Customer
- 2.2.4.4 Delete Customer
- 2.2.4.5 Search Customer
- 2.2.4.6 Print Customer

2.2.5 Accounting Management

- 2.2.5.1 View Jobs Cards – Details
- 2.2.5.2 View Parts - Details
- 2.2.5.3 Create Report/Print for View Job Cards - Details
- 2.2.5.4 Create Report/Print for View Parts- Details
- 2.2.5.5 Print Finance
- 2.2.5.6 Extra Expenses
- 2.2.5.7 View Current Month's Income/Expenses/Profit

2.2.6 User Management

- 2.2.6.1 Add New User
- 2.2.6.2 Edit New User
- 2.2.6.3 Delete User

2.2.7 Invoice Management

- 2.2.7.1 Add New Invoice

2.2.7.2 Print Invoice List

2.2.7.3 Edit Invoice

2.2.7.4 Delete Invoice

2.2.7.5 Search Invoices

2.2.7.6 Print Invoice

2.2.8 Cars Management

2.2.8.1 Add Car

2.2.8.2 Edit Car

2.2.8.3 Delete Car

2.2.8.4 Print Car

2.2.8.5 Search Car

2.3 User Characteristics

No specialized IT knowledge is required from the user to use the website, only basic familiarity with computers or mobile phones. Since the website is intended for car mechanics, users should have knowledge of cars and car parts. As the interface will be in English, a basic understanding of the language is necessary.

Overall, the website will be easy to understand, user-friendly, and written in simple language.

2.4 Constraints

The system is web-based, that means there are no hardware limitations, and it does not require significant memory or computer upgrades, but an internet connection is essential since access to the database will be required.

There will be security measures in place to protect the data, as a login system will be implemented for the users.

2.5 Assumptions and Dependencies

The user needs internet access, either through a computer or a device with internet access and a web browser application, to access and use the website.

2.6 Apportioning of Requirements

The specific system will be delivered as a single, unified system, and there will be no future deliverables.

3. SPECIFIC REQUIREMENTS

3.1 External Interface Requirements

3.1.1 User Interfaces

User Features:

1. Login

When entering the website, the first page displayed is the login page, to verify that the user is authorized to access the system.

For login (Login), the system will ask the user to enter their Username and password in the respective fields, and upon clicking the "Login" button, the system will verify the credentials and provide access. If the user enters incorrect data, the system will display an appropriate message. There is also a "Forget Password?" button in case the user forgets his password.

2. Navigation Menu

The purpose of the navigation menu is to provide users with easy access to various categories of the website. The menu includes options in the form of buttons, allowing users to select and navigate to the desired page. Upon clicking a button, the system should respond immediately to execute the function. Key options requested for the menu are:

- i. Dashboard
- ii. Customers
- iii. Parts
- iv. Jobs
- v. Accounting
- vi. Invoice
- vii. Log Out

This menu will be consistently available on the left side of all pages the user navigates to. (On mobile there will be a button to show the menu)

3. Logo

It is essential that the company's logo be placed in the top left corner of the home page. The logo will also function as a button to return the user to the home page of the website.

4. Header/Toolbar

The header will stay the same no matter what page the customer uses currently. It will include:

- Day and Month (Left side of the header, right side next to logo)
- Search Bar with filter (the search bar automatically filters when at a specific page, example: user is on Customers page, when searching for something the system automatically ONLY searches for customers)
- Profile (when clicked drop down menu appears with these options: Restore, Back Up, User Management and Log Out)

5. Profile

Restore: Restores latest Backup

Back Up: Back's Up (saves on the server) everything changed

User Management: By choosing this option a user can manage his account (username, email, password). The admin will be able to view and edit all users and add new users (button in lower part of page). When pressing that button, the admin can create a new account by creating a new Username and entering an email. The system creates a random password for security and sends an email with a link to the entered email address. Once that link is pressed the new user enters the system for the first time. The system shows a welcome message and asks the new user to enter and re-enter a new personal password. Once the password has been input the user presses save and that saves the new account.

Log Out: Exits the user from the system

6. Dashboard

The Dashboard will be the first site shown after login and the system's main site. It will provide an easy way for the user to access the most important features of the system, being the registration of a new customer and adding a new Part to the Database (buttons will be top left). In the top right corner, there will be a calendar and under it the system will show the current month's current income and expenses.

7. Customers page

The Customers page will be used to store the information of all the customers (excluding the ones that will not stay with the company). The site will show the Customers (and their phone, email, address) in alphabetical order (there is a button upper right to filter differently) and by clicking on the name all the customers information is shown. There will be a 'Print' button in the upper right corner of the page which by clicking will print the name, email, phone and address of all desired customers (a customer list basically). Next to the Print button, there is an 'Add New Customer' button. Once clicked, a new page will open asking the user to input the information in their respective fields. The information includes:

- i. First Name (mandatory text field)
- ii. Surname (mandatory text field)
- iii. Company Name (if the client is a company)
- iv. Address (option for multiple)
- v. Telephone Numbers (option for multiple) (allow more that 8 digits) (mandatory field)

- vi. E-mail Address (option for multiple)
- vii. Each customer will have multiple car inputs. Each car input must include:
 - Brand
 - Model
 - License Plate
 - VIN (Vehicle Identification Number)
 - Manufacturing Date
 - Fuel Type
 - Engine Type
 - Km/Miles
 - Color
 - Kw/Horsepower
 - Comment Section (with no word limit)

All fields are mandatory. Once a customer's data is saved his information can be deleted, viewed, changed and downloaded at any time. There is also a Job Card button in the top right corner which will direct the user to the job card page, filtered to the specific customer. Next to the Job card button there is a Print button allowing the user to print out the chosen customer's information.

8. Parts page

The Parts page will have all data related to car parts in stock (or not). When clicking on 'Parts' in the menu a page showing all parts opens. There is a button in the top right corner to print the name, supplier, price (Price Bought and Selling Price) and stock of all chosen parts and a button to Add a New Part. When clicking that, the system opens a page asking the user to input all information into their respective fields. Those fields are:

Supplier Details:

- Supplier Name
- Supplier Phone Number
- Supplier Email Address

Supplier Details:

- Part/Description (the parts full name like: Duralast Gold Battery BCI Group Size 35 640 CCA 35-DLG)
- Price Per Piece
- Pieces Purchased
- Price Bulk
- Selling Price
- VAT
- Date Created

There is a save button in the lower part to save all data entered. When saved, the system adds 3 more fields: Pieces sold, Pieces in Stock and Profit from Sales. These 3 fields will be updated by the system whenever necessary (like when a job card is saved where a part is used, the system will automatically update these numbers in the parts page), but the users will also be able to change these numbers manually if necessary. Furthermore, the user will always be able to edit or delete the data by selecting the part in the database and pressing one of the two buttons (Edit and Delete) in the lower part, under the viewed information. Under these 2 buttons, the system will feature another field showing Invoices. This function is linked to the invoices button in the menu and will be explained later. The user will also have the ability to print a part's information by clicking the 'Print' button in the upper right corner.

9. Jobs page

The jobs page gives the user access to all job cards, including the option to create new ones or edit existing ones. The system's users will create a job card at the start of each job they do containing all necessary information. The job cards will be closed by the user once the job is done.

When clicking on Jobs in the navigation menu a page opens showing all job cards, from the most recent to the oldest. To make it easier for the user to recognize the jobs, for each job card the customer's name will be shown, his car info, phone number, the job start and end date (if the job card has been closed) and the cards status (OPEN or CLOSED, showing if the job is still ongoing or finished). In the upper right corner, there will be three buttons. A button to sort the job cards differently (by date...), a 'Print' button to print a list of chosen job cards (Info shown on that list: Name, car info, phone number, job start/end date, status) and an 'Add New Job Card' button. When pressing the latest button mentioned, a new page opens with an empty job card which the user can fill out. While entering information into the job card, the system will search the customer database and propose possible customers to the user. By clicking on the one he wants the system will automatically fill out all fields where it already has the information (address, phone number...). If it is a one-time customer the user simply fills out all fields (since it is a one-time customer he/she will not be in the customer database which also means the system will not help the user fill out the job card).

The Job cards will ask/include the following information:

- Customer (text field with drop down for existing customer)
- Phone Number (text field)
- Registration Plate (text field)
- Date of Call (text field)
- Location of Visit (text field with drop down if existing customer)

- Date of Job Start (text field)
- Date of Job End (text field)
- Car Brand and Model (text field and drop down for existing customer)
- Job Description (the description the customer gives on call) (text field)
- Photos of damage (in case of accident)
- Job Report (actual problem and solution, plus all extra information) (text field)
- Rides (add rides with description, like :1 ride to the car for diagnosis, 1 ride for spare parts...) (Text fields with button to add and counter counting all rides added)
- Drive Costs in Euro (number field)
- Parts used/replaced (including number input : example a 4.5liters oil, 3 fuses etc.)(text field)
- Price for each Part in Euro (Number field)
- Total Cost (number field)

There will be no mandatory field on the job card. When saving the data for the first time, after viewing the job card again there will be 2 more buttons. An edit and a delete button in the lower part of the page. When pressing edit, the user will be able to edit the saved data and there will also be a “Save and Finish Job” button in the upper right corner. By pressing that button the system marks the job as Finished and creates an invoice by using the job cards information (total cost + VAT). Even after the job is done the user will be able to edit or delete the information using the buttons mentioned above. The closed Job cards will also have an ‘Invoice’ button in the top right corner, giving the user the ability to download the invoice at any time. Next to the invoice button there will be a ‘Print’ button allowing the user to print the job card and all its information.

10. Accounting Page

The Accounting Page will show the user the current month’s general expenses and income. Under that the current month’s general profit will be shown. In the lower part of the page there will be a simple graphical representation showing income and expenses for the entire year, for each month. Under the representation there are 4 buttons giving the user more details about financials:

- Job Cards-Details: By pressing this button a new page opens showing job cards (with the customer’s name, the cards creation date, the jobs expenses, income and profit). By pressing on the job card, the full job card with all the information will open. In the upper right corner will be 2 buttons. Filter button allowing the user to filter the Job Cards that start and end in a specified period. Next to that there is a ‘Print’ button which will let the user download the list of job cards with the information mentioned before (customer name, date, expenses...). The lower part of the page will show the

profit calculated from the job cards shown above, so the profit of the month chosen.

- **Parts-Details:** This page is very similar to the 'Job Cards-Details' page. In the top right corner are the same 2 buttons with the same functionalities (Filter, Print). In this page, instead of job cards the system lists all parts purchased and possibly sold (in the chosen month). It shows the parts name, the price at which it was bought and sold, how many pieces were bought and how many were sold. The lower part of the page shows general expenses and income calculated from the sold and bought prices of the chosen month.
- **Extra Expenses:** This page will allow the users to input any extra expenses (Insurances...) and to view the existing expenses. For each entry there will be 3 fields, one to input the expense (what it is), one to input the amount and one to input the date of it.
- **Print Finances:** This button will allow the user to print full financial information.

11. Invoice Page

This page gives the users access to all invoices (invoices input by the users after new parts they bought are delivered). Like in all other pages there are 3 buttons in the upper right corner. A button to sort the invoices, one to print a list of all selected invoices and an 'Add Invoice' button. When the latest button mentioned is pressed a new page opens where the user can input the information of an invoice, being the Invoice Number, the invoices Date, the suppliers name, suppliers phone number and/or e-mail address, VAT and the Invoices total price. Under these fields there is another section to enter the information of all different parts bought that moment from that supplier (Part, Pieces Purchased, Price Per Piece, Selling Price). In this section there is also an 'Add Part' button to add other parts bought in this delivery and a 'Save' button to save the newly entered data. The parts are then saved in the Parts database having their invoices linked to them, which is why the Invoice Numbers can be seen in the Parts Page mentioned above. Even after a new invoice is saved the users still have the ability to change the information by pressing the 'Edit' button which will appear in the lower part of the page, right next to a delete button which by pressing deletes the Invoice and its data.

12. Log Out

When the "Logout" button is pressed, the user is logged out of the system.

3.1.2 Hardware Interfaces

1. Device Specifications: The system should be designed to be compatible with a variety of devices, including:

- Desktops and Laptops:
 - Operating Systems: Windows, macOS, Linux (latest stable versions)
 - Browsers: Chrome (latest), Firefox (latest), Safari (latest), Edge (latest)
- Tablets and Mobile Devices:
 - Operating Systems: Android, iOS
 - Browsers: Chrome (latest), Safari (latest)
 - Connection: Wi-Fi or Mobile Data

2. Peripheral Requirements: The system may require the following peripherals for efficient usage:

- Mouse and Keyboard:
 - Standard wired or wireless mouse and keyboard (for desktop/laptop users).
 - Touchscreen support for tablets and mobile devices for direct interaction.
- Printer (optional):
 - For printing invoices, job cards, and customer-related documents.
Compatible with networked printers or USB printers.
- Camera (optional):
 - For uploading photos of car damage or parts. Integrated or external webcam for desktop/laptop users or the device's native camera for mobile/tablet users.

3. Hardware Connections: The system will need to operate over various network and hardware connections, depending on the device and environment:

- Network Connectivity:
 - Wi-Fi: The system should be designed to function over a Wi-Fi network, ensuring internet access for all users.
 - Ethernet: Desktops or larger systems in a business environment can connect via Ethernet for a more stable connection.
 - Mobile Data (for mobile/tablet devices): For users who need to access the system outside of traditional office environments, mobile data through 3G/4G/5G networks will be necessary.
- USB Ports (optional):
 - For connecting devices such as printers, barcode scanners, or external storage devices for backups or transfers.
- 4G Connectivity (for remote users or mobile environments):
 - If the system is intended to be used on-site in remote areas without stable internet, the system may be adapted for 4G connections to allow real-time data updates even without Wi-Fi.

3.1.3 Software Interfaces

Programming Languages: HTML (version 5), CSS (W3C version), JavaScript (ES13), PHP (version 8.2)

The system will be built using the following markup and programming languages to ensure flexibility and advanced graphical capabilities:

- HTML5 for structuring the content and layout of the website.
- CSS for styling and creating a visually appealing, responsive design.
- JavaScript (ES13) for adding dynamic functionalities, improving user interactivity, and reducing the load on the server.
- PHP will be used for server-side tasks such as encryption, handling cookies, and interacting with the database for data manipulation.

These technologies are fully compatible with modern web browsers, ensuring an optimized and smooth user experience.

Software Development Environment: Visual Studio Code

Development will be carried out using Visual Studio Code (VSCode), a versatile and easy-to-use code editor. VSCode allows seamless integration of different parts of the code and supports a wide range of extensions for enhanced development, code editing, and error detection.

Database: MySQL

The system will use MySQL (version 8.0) for its database needs. All company-related data, including customer records, job cards, and inventory, will be stored here. MySQL will help efficiently manage and organize this data for better inventory control and seamless retrieval.

Operating System: Windows 10/11

The system will be compatible with Windows 10/11, the most commonly used operating system, ensuring that most users will be able to run the software without compatibility issues.

3.1.4 Communications Interfaces

Network Protocols:

- The system will use HTTPS (Hypertext Transfer Protocol Secure) for all communication between the client (browser) and the server. This ensures that all

data transmitted over the network is encrypted, preventing unauthorized access and ensuring privacy.

- For internal server communication or database access, TCP/IP will be used as the standard network protocol. This ensures reliable, ordered, and error-checked delivery of data packets between servers and clients.

Data Transmission Requirements:

- The system will use JSON (JavaScript Object Notation) as the primary data format for transmitting data between the client and server. JSON is lightweight, easy to parse, and widely supported across all modern web technologies.
 - For example, user login details, job data, customer information, and parts inventory updates will be transmitted in JSON format.
- XML could also be used for specific cases, but JSON will be the default data format due to its better efficiency and ease of use in web-based applications.

Communication Security:

- SSL/TLS encryption will be implemented to secure all data transmitted between the client and server. SSL (Secure Sockets Layer) or TLS (Transport Layer Security) ensures that sensitive data, such as login credentials, customer details, and financial information, are encrypted and protected from potential interception by malicious third parties.
 - All web-based communications will be carried out over HTTPS, leveraging SSL/TLS for encryption.

Message Exchange Standards:

- The system will adhere to standard RESTful API practices for message exchange, where the client and server interact using HTTP methods like GET, POST, PUT, and DELETE.
- Asynchronous Communication: For real-time interactions (such as updates to job status, customer information, or inventory), AJAX (Asynchronous JavaScript and XML) requests will be used. This allows the system to update parts of the web page without needing to reload the entire page, offering a smoother user experience.
- If the system needs to interact with external systems (e.g., payment gateways, third-party APIs for inventory updates, or external accounting systems), REST API or SOAP (Simple Object Access Protocol) standards could be used, depending on the external system's requirements.

By adhering to these standards, the system ensures secure, efficient, and seamless communication both within the application and with external services when necessary.

3.2 Software Product Features

3.2.1 User Access

3.2.1.1 Purpose

The purpose of this functionality is to allow the user to log in and access their account using the main login page.

3.2.1.2 Stimulus/Response Sequence

Stimulus: The user interacts with the login page and signs in.

Response: They are directed to the main page of the website.

3.2.1.3 Associated Functional Requirements

3.2.1.3.1 LOGIN

3.2.1.3.1.1 Introduction Software Requirements Specification

The purpose of this function is to allow users to login in by taking the inputs and signing them in and gives them a cookie to keep them signed in.

3.2.1.3.1.2 Input

Username, Password, Login Button

3.2.1.3.1.3 Processing

When the user inserts their data in the username and password parameters, when they login in, they system checks the information and signs them in.

It also generates a cookie to keep the user signed in and sends it to them.

3.2.1.3.1.4 Output

Success: The user is logged in and a cookie is given for the user to be kept signed in.

Failure: The user receives an error message that they were unable to sign in

Error: The user receives an error message.

3.2.1.3.2 FORGOT PASSWORD

3.2.1.3.2.1 Introduction Software Requirements Specification

The user may have forgotten their password, so they are able to reset it using this functionality.

3.2.1.3.2.2 Input

Email address

3.2.1.3.2.3 Processing

The user gives their email address, the system generates a link that will allow the user to login to their account and reset their password upon arrival.

It will also give a time limit to the user of an hour where the link is available.

3.2.1.3.2.4 Output

Success: The user changes their password.

Time Expiration: The user is not allowed to use the link anymore.

Failure/Error: The user receives an error message.

3.2.1.3.3 LOGOUT

3.2.1.3.3.1 Introduction Software Requirements Specification

The purpose of this functionality is to allow the user to log out.

3.2.1.3.3.2 Input

Log out Button press

3.2.1.3.3.3 Processing

The user is logged out of the system and their cookie is deleted.

3.2.1.3.3.4 Output

Success: The user logs out.

Failure: The user is unable to log out.

Error: The user receives an error message.

3.2.2 Jobs Management

3.2.2.1 Purpose

The Jobs Tab is designed to manage customer jobs, including creating new jobs, tracking existing job cards, and managing job statuses. It facilitates organization by categorizing jobs by customer type and providing options to sort, edit, and delete job cards.

3.2.2.2 Stimulus/Response Sequence

Stimulus: Users interact with the Job Card Page to create or manage jobs, sort job cards, or edit job details.

Response: The system processes input, updates job records, or generates outputs such as invoices.

3.2.2.3 Associated Functional Requirements

3.2.2.3.1 ADD NEW JOB CARD

3.2.2.3.1.1 Introduction Software Requirements Specification

This feature allows users to create a new job card with current customers.

3.2.2.3.1.2 Inputs

Customer, Phone, Registration Plate, Location of Visit, Date of Call, Job Description by Customer, Job Report, Job Start Date, Job End Date, Rides, Car Brand and Model, Drive Costs, Parts Used/Replaced, Price for Each Part, Photos of Damage, Total Costs

3.2.2.3.1.3 Processing

The user fills in the input fields with the necessary information and a job card is created and saved in the system.

3.2.2.3.1.4 Outputs

Success: The user is notified that the job card is successfully created,

Failure: The user receives an error message that the job card was not created.

Error: The user receives an error message.

3.2.2.3.2 PRINT JOB CARDS LIST

3.2.2.3.2.1 Introduction Software Requirements Specification

This functionality allows users to print each job card itemized by Customer Name, Car Info, Phone, Job Start/End date and Status.

3.2.2.3.2.2 Inputs

Customer Name, Car Info, Phone, Job Start/End date and Status from the database.

3.2.2.3.2.3 Processing

Step 1: The user presses the button “Print”.

Step 2: Show a modal to choose selected job cards to print.

Step 3: The printing window pops up to allow mass printing of the Job Cards list.

3.2.2.3.2.3 Outputs

Success: The list is printed.

Failure: The user receives an error message that they were unable to print.

Error: The user receives an error message.

3.2.2.3.3 EDIT JOB CARD

3.2.2.3.3.1 Introduction Software Requirements Specification

It allows the user to edit any input field in the job card they select.

3.2.2.3.3.2 Inputs

The changes that the user wants to make

3.2.2.3.3.3 Processing

The user selects the job card and is allowed to change any information. Any changes made are saved in the system

3.2.2.3.3.4 Outputs

Success: The job card and its associated data are saved in the database.

Failure: The user receives an error message if required fields are incomplete or if a system issue occurs.

Error: The user receives an error message.

3.2.2.3.4 DELETE JOB CARD

3.2.2.3.4.1 Introduction Software Requirements Specification

This function gives the user the ability to delete any job card.

3.2.2.3.4.2 Inputs

The user selects the job card and presses the delete button.

3.2.2.3.4.3 Processing

As soon as the user has selected and deleted the job card he wants the database is updated.

3.2.2.3.4.4 Outputs

Success: The job card and its associated data are deleted from the database.

Failure: An error message is displayed if required fields are incomplete or if a system issue occurs.

Error: The user receives an error message.

3.2.2.3.5 SEARCH JOB CARD

3.2.2.3.5.1 Introduction Software Requirements Specification

This search bar allows users to search for the specific job card they want to see.

3.2.2.3.5.2 Inputs

Customer Name, Car Info, Phone, Status

3.2.2.3.5.3 Processing

Step 1: The user presses the search bar.

Step 2: Show a modal to choose what to search for and press enter or the Search button.

3.2.2.3.5.4 Outputs

The user will see the specific job card they searched for.

3.2.2.3.6 CREAT INVOICE/PRINT JOB CARD

3.2.2.3.6.1 Introduction Software Requirements Specification

This requirement outlines the functionality of the printing button, that allows the user to press, and a pop-up window will display if they wish to print the information of this job card.

3.2.2.3.6.2 Inputs

The details of a specific job card that is in the database.

3.2.2.3.6.3 Processing

Step 1: The user presses the button “Print”.

Step 2: A small pop-up window will appear to confirm or decline to print.

3.2.2.3.6.4 Outputs

Success: The information of the job card will be printed.

Failure: The information of the job card will not be printed.

Error: A message error will appear why the information can't be printed.

3.2.3 Parts Management

3.2.3.1 Purpose

The purpose of this page is to enable the user to add new parts and add current or new supplier with detailed attributes, edit an existing part by inputting details such as supplier information, pricing, stock levels, and sales metrics, edit the parts list using a dedicated button, delete a specified part from the list, search for the specific part they want to see and utilize a printing button that displays a pop-up window to confirm printing the part's details.

3.2.3.2 Stimulus/Response Sequence

Stimulus: The user interacts with the Parts Page by sorting parts/suppliers, editing part/suppliers details, adding new parts/suppliers, deleting parts and printing individual parts or a list of chosen parts.

Response: The system processes the user's inputs and updates the parts list or saves newly added parts/suppliers.

3.2.3.3 Associated Functional Requirements

3.2.3.3.1 ADD NEW PART

3.2.3.3.1.1 Introduction Software Requirements Specification

This button allows users to navigate to the Add a New Part Page to input new parts/suppliers and their details.

3.2.3.3.1.2 Inputs

Part/Description, Supplier details, Pieces Purchased, Date Created, Price Per Piece, VAT, Price Bulk, Selling Price

3.2.3.3.1.3 Processing.

Step 1: The user presses the button "Add New Part".

Step 2: The system redirects the user to the Add New Part Page.

Step 3: When the "Save Part" button is clicked, the part is saved in the parts database.

3.2.3.3.1.4 Outputs

Success: New Part successfully saved.

Failure: An error message is displayed if required fields are incomplete or already existing part or if a system issue occurs.

3.2.3.3.2 PRINT PART LIST

3.2.3.3.2.1 Introduction Software Requirements Specification

This requirement outlines the functionality of the Print button, which when pressed displays a pop-up window with a list of all or all chosen parts of the database and the option to print that list.

3.2.3.3.2.2 Inputs

Part/Description, Date, Supplier, Price Per Piece, Sell Price and Pieces in Stock from database.

3.2.3.3.2.3 Processing

Step 1: The user presses the button “Print”.

Step 2: Show a modal to choose selected parts to print.

Step 3: The printing window pops up to allow mass printing of the Part list.

3.2.3.3.2.4 Outputs

Success: The part list is printed with Part/Description, Date, Supplier, Price Per Piece, Sell Price and Pieces in Stock.

Failure: An error message is displayed if a system issue occurs.

3.2.3.3.3 EDIT PART

3.2.3.3.3.1 Introduction Software Requirements Specification

This button allows users to navigate to the Edit Part Page to edit part details/supplier.

3.2.3.3.3.2 Inputs

The changes that the user wants to make on Part/Description, Supplier details, Pieces Purchased, Date Created, Price Per Piece, Selling Price and VAT.

3.2.3.3.3.3 Processing

Step 1: The user presses the button “Edit”.

Step 2: The system redirects the user to the Edit Part Page.

Step 3: The user presses the button “Save Part”.

3.2.3.3.3.4 Outputs

Success: The part and supplier, they're associated data are saved in the database.

Failure: An error message is displayed if required fields are incomplete or if a system issue occurs.

3.2.3.3.4 DELETE PART

3.2.3.3.4.1 Introduction Software Requirements Specification

This button allows users to delete the chosen part.

3.2.3.3.4.2 Inputs

The details of a specific part that is in the database.

3.2.3.3.4.3 Processing

Step 1: The user presses the button “Delete”.

3.2.3.3.4.4 Outputs

Success: The part and its associated data are deleted from the database.

3.2.3.3.5 SEARCH PART

3.2.3.3.5.1 Introduction Software Requirements Specification

This search bar allows users to search for the specific part they want to see.

3.2.3.3.5.2 Inputs

Part/Description, Supplier, Phone, Email

3.2.3.3.5.3 Processing

Step 1: The user presses the search bar.

Step 2: Show a modal to choose what to search for and press enter or the Search button.

3.2.3.3.5.4 Outputs

The user will see the specific part they searched for. The part details includes Part/Description, Date Created, Supplier, Phone, Email and VAT.

3.2.3.3.6 PRINT PART

3.2.3.3.6.1 Introduction Software Requirements Specification

This requirement outlines the functionality of the printing button, that allows the user to press, and a pop-up window will display if they wish to print the part's/suppliers specific details.

3.2.3.3.6.2 Inputs

The details of a specific part that is in the database.

3.2.3.3.6.3 Processing

Step 1: The user presses the button "Print".

Step 2: A small pop-up window will appear to confirm or decline to print the part's/supplier data.

3.2.3.3.6.4 Outputs

Success: The part's/supplier details will be printed.

Failure: An error message is displayed if a system issue occurs.

3.2.4 Customer Management

3.2.4.1 Purpose

The purpose of this page is to enable the user to add new customers with detailed attributes, edit an existing customer by inputting details such as First Name, Surname, Company Name, Address, Phone Number, Email Address, edit the customer list using a dedicated button, delete a specified customer from the list, search for the specific customer they want to see and utilize a printing button that displays a pop-up window to confirm printing the customer's information.

3.2.4.2 Stimulus/Response Sequence

Stimulus: The user interacts with the Customer Page by sorting customers, editing customer details, adding new customers, deleting customers and printing individual customers or a list of chosen customers.

Response: The system processes the user's inputs and updates the customers list or saves newly added customers.

3.2.4.3 Associated Functional Requirements

3.2.4.3.1 ADD NEW CUSTOMER

3.2.4.3.1.1 Introduction Software Requirements Specification

This button allows users to navigate to the Add a New Customer Page to input new customers and their details.

3.2.4.3.1.2 Inputs

First Name, Surname, Company Name, Addresses, Phone Numbers and Email Addresses

3.2.4.3.1.3 Processing.

Step 1: The user presses the button "Add New Customer".

Step 2: The system redirects the user to the Add New Customer Page.

Step 3: When the "Save" button is clicked, the customer is saved in the customers database.

3.2.4.3.1.4 Outputs

Success: New Customer successfully saved.

Failure: An error message is displayed if required fields are incomplete or if a system issue occurs.

3.2.4.3.2 PRINT CUSTOMER LIST

3.2.4.3.2.1 Introduction Software Requirements Specification

This requirement outlines the functionality of the Print button, which when pressed displays a pop-up window with a list of all or all chosen customers of the database and the option to print that list.

3.2.4.3.2.2 Inputs

Name, Email, Phone, Address.

3.2.4.3.2.3 Processing

Step 1: The user presses the button “Print”.

Step 2: Show a modal to choose selected customers to print.

Step 3: The printing window pops up to allow mass printing of the Customer list.

3.2.4.3.2.4 Outputs

Success: The customers list is printed with Name, Email, Phone, Address.

Failure: An error message is displayed if a system issue occurs.

3.2.4.3.3 EDIT CUSTOMER

3.2.4.3.3.1 Introduction Software Requirements Specification

This button allows users to navigate to the Edit Customer Page to edit customer details.

3.2.4.3.3.2 Inputs

The changes that the user wants to make to First Name, Surname, Company Name, Address, Phone Number and Email Address.

3.2.4.3.3.3 Processing

Step 1: The user presses the button “Edit”.

Step 2: The system redirects the user to the Edit Customer Page.

Step 3: The user presses the button “Save”.

3.2.4.3.3.4 Outputs

Success: The customer and its associated data are saved in the database.

Failure: An error message is displayed if required fields are incomplete or if a system issue occurs.

3.2.4.3.4 DELETE CUSTOMER

3.2.4.3.4.1 Introduction Software Requirements Specification

This button allows users to delete the chosen customer.

3.2.4.3.4.2 Inputs

The details of a specific customer that is in the database.

3.2.4.3.4.3 Processing

Step 1: The user presses the button “Delete”.

3.2.4.3.4.4 Outputs

Success: The customer and his associated data are deleted from the database.

Failure: An error message is displayed if a system issue occurs.

3.2.4.3.5 SEARCH CUSTOMER

3.2.4.3.5.1 Introduction Software Requirements Specification

This search bar allows users to search for specific customers they want to see.

3.2.4.3.5.2 Inputs

Customer Name, Email, Phone, Address

3.2.4.3.5.3 Processing

Step 1: The user presses the search bar.

Step 2: Show a modal to choose what to search for and press enter or the Search button.

3.2.4.3.5.4 Outputs

The user will see the specific customer they searched for. The customer information includes Name, Email, Phone and Address.

3.2.4.3.6 PRINT CUSTOMER

3.2.4.3.6.1 Introduction Software Requirements Specification

This requirement outlines the functionality of the printing button, that allows the user to press, and a pop-up window will display if they wish to print the customer’s specific information.

3.2.4.3.6.2 Inputs

The details of a specific customer that is in the database.

3.2.4.3.6.3 Processing

Step 1: The user presses the button “Print”.

Step 2: A small pop-up window will appear to confirm or decline to print the customer’s data.

3.2.4.3.6.4 Outputs

Success: The customer’s information will be printed.

Failure: The customer’s information will not be printed.

The customer's information for the list includes Name, Emails, Phones and Addresses.

The specific customer information includes First Name, Surname, Company Name, Address, Phone Number and Email Address.

3.2.5 Accounting Management

3.2.5.1 Purpose

The purpose of this functionality is to view finances and create monthly or yearly reports.

3.2.5.2 Stimulus/Response Sequence

Stimulus: The user interacts with the financial page and can view different finances depending on the situation and print reports.

Response: The reports are displayed and printed.

3.2.5.3 Associated Functional Requirements

3.2.5.3.1 VIEW JOB CARDS - DETAILS

3.2.5.3.1.1 Introduction Software Requirements Specification

The purpose of this functionality is to display all the job cards’ customer’s expenses, income and profit.

3.2.5.3.1.2 Input

Database information

3.2.5.3.1.3 Processing

The data is extracted from the database depending on the year and month selected when that job card is created, and it displays it.

It also calculates the profit made based on expenses and income and displays it.

3.2.5.3.1.4 Output

Success: The finances of each customer are displayed.

Failure/Error: An error message is displayed that something is wrong.

3.2.5.3.2 VIEW PARTS - DETAILS

3.2.5.3.2.1 Introduction Software Requirements Specification

The purpose of this functionality is to display all the part's expenses and income as well as the quantity bought and sold.

3.2.5.3.2.2 Input

Database information

3.2.5.3.2.3 Processing

The data is extracted from the database depending on the year and month selected when that parts were stocked, and it displays it.

3.2.5.3.2.4 Output

Success: The finances of each part are displayed.

Failure/Error: An error message is displayed that something is wrong.

3.2.5.3.3 CREATE REPORT FOR FINANCES

3.2.5.3.3.1 Introduction Software Requirements Specification

The purpose of this function is to create a report for all finances.

3.2.5.3.3.2 Input

Database information

3.2.5.3.3.3 Processing

The data is extracted from the database and created as a report.

3.2.5.3.3.4 Output

Success: The report is created and printed.

Failure/Error: An error message is displayed that something is wrong.

3.2.5.3.4 CREATE REPORT FOR LIST OF JOB CARDS

3.2.5.3.4.1 Introduction Software Requirements Specification

The purpose of this function is to create a report of job cards based on date.

3.2.5.3.4.2 Input

Database information

3.2.5.3.4.3 Processing

The data is extracted from the database based on date and created as a report.

3.2.5.3.4.4 Output

Success: The report is created and printed.

Failure/Error: An error message is displayed that something is wrong.

3.2.5.3.5 CREATE REPORT FOR LIST OF PARTS

3.2.5.3.5.1 Introduction Software Requirements Specification

The purpose of this function is to create a report for parts based on date.

3.2.5.3.5.2 Input

Database information

3.2.5.3.5.3 Processing

The data is extracted from the parts database based on date selected and created as a report.

3.2.5.3.5.4 Output

Success: The report is created and printed.

Failure/Error: An error message is displayed that something is wrong.

3.2.5.3.7 VIEW EXTRA EXPENSES

3.2.5.3.7.1 Introduction Software Requirements Specification

The purpose of this functionality is to display all the extra expenses.

3.2.5.3.7.2 Input

Database information

3.2.5.3.7.3 Processing

The data is extracted from the database and displayed in a list.

3.2.5.3.7.4 Output

Success: The extra expenses are displayed with their description, amount and date.

Failure/Error: An error message is displayed that something is wrong.

3.2.5.3.8 PRINT EXTRA EXPENSES

3.2.5.3.8.1 Introduction Software Requirements Specification

This button allows users to navigate to the Add Extra Expenses Page to input new extra expenses and their details.

3.2.5.3.8.2 Input

Expense description, amount and date when created.

3.2.5.3.8.3 Processing

Step 1: The user presses the button "Add Extra Expense".

Step 2: The system redirects the user to the Add Extra Expenses Page.

Step 3: When the “Save” button is clicked, the extra expense is saved in the extra expenses database.

3.2.5.3.8.4 Output

Success: Extra Expense successfully saved.

Failure: An error message is displayed if required fields are incomplete or if a system issue occurs.

3.2.6 User Management

3.2.6.1 Purpose

The purpose of this page is to enable the administrator to add new users and edit, search or delete users from the system.

3.2.6.2 Stimulus/Response Sequence

Stimulus: The admin interacts with the User Management Page by adding, editing, searching or deleting users.

Response: The system processes the admin’s inputs and updates the system.

3.2.6.3 Associated Functional Requirements

3.2.6.3.1 ADD NEW USER

3.2.6.3.1.1 Introduction Software Requirements Specification

This functionality allows the admin to add new users to the system.

3.2.6.3.1.2 Inputs

Add New User Button: By pressing the Add New User Button the Admin can add new users to the system

3.2.6.3.1.3 Processing

The admin presses the Add New User Button to add new users.

3.2.6.3.1.4 Outputs

Success: The admin is redirected to the Dashboard page.

Failure: An error message is displayed if a system issue occurs.

3.2.6.3.2 EDIT USER

3.2.6.3.2.1 Introduction Software Requirements Specification

Username, Email, Password

3.2.6.3.2.2 Processing

Step 1: The admin edits user details into the provided fields.

Step 2: The admin presses the "Edit" button to save the data.

3.2.6.3.2.3 Outputs

Success: The new user and its associated data are saved in the database.

Failure: An error message is displayed if required fields are incomplete or if a system issue occurs.

3.2.6.3.3 DELETE USER

3.2.6.3.3.1 Introduction Software Requirements Specification

This functionality allows the admin to delete user from the system.

3.2.6.3.3.2 Inputs

Delete User Button: By pressing the Delete User Button the Admin can delete users from the system.

3.2.6.3.3.3 Processing

The admin presses the Delete Button to delete users.

3.2.6.3.3.4 Outputs

Success: The admin is redirected to the Dashboard page.

Failure: An error message is displayed if a system issue occurs.

3.2.7 Invoice Management

3.2.7.1 Purpose

The purpose of this page is to enable the user to add new invoice with detailed attributes, edit an existing invoice by inputting details such as Invoice Number, Date Created, Supplier Name, Supplier's Phone, Supplier's Email, VAT, Invoice Total Price and information of parts that were used, edit the invoice list using a dedicated button, delete a specified invoice from the list, search for the specific invoice they want to see and utilize a printing button that displays a pop-up window to confirm printing the invoice's information.

3.2.7.2 Stimulus/Response Sequence

Stimulus: The user interacts with the Invoice Page by sorting invoices, editing invoice details, adding new invoices, deleting invoices and printing individual invoices or a list of chosen invoices.

Response: The system processes the user's inputs and updates the invoices list or saves newly added invoices.

3.2.7.3 Associated Functional Requirements

3.2.7.3.1 ADD NEW INVOICE

3.2.7.3.1.1 Introduction Software Requirements Specification

This button allows users to navigate to the Add a New Invoice Page to input new invoices and their details.

3.2.7.3.1.2 Inputs

Invoice Number, Date Created, Supplier Name, Supplier's Phone, Supplier's Email, VAT, Invoice Total Price and information of parts that were used.

3.2.7.3.1.3 Processing.

Step 1: The user presses the button "Add New Invoice".

Step 2: The system redirects the user to the Add New Invoice Page.

Step 3: When the "Save" button is clicked, the invoice is saved in the invoices database.

3.2.7.3.1.4 Outputs

Success: New invoice successfully saved.

Failure: An error message is displayed if required fields are incomplete or if a system issue occurs.

3.2.7.3.2 PRINT INVOICE LIST

3.2.7.3.2.1 Introduction Software Requirements Specification

This requirement outlines the functionality of the Print button, which when pressed displays a pop-up window with a list of all or all chosen invoices of the database and the option to print that list.

3.2.7.3.2.2 Inputs

Invoice Number, Date Added and Supplier, Phone, Email, Total, VAT.

3.2.7.3.2.3 Processing

Step 1: The user presses the button "Print".

Step 2: Show a modal to choose selected Invoices to print.

Step 3: The printing window pops up to allow mass printing of the Invoices list.

3.2.7.3.2.4 Outputs

Success: The invoices list is printed with Invoice Number, Date Added and Supplier, Phone, Email, Total, VAT.

Failure: An error message is displayed if a system issue occurs.

3.2.7.3.3 EDIT INVOICE

3.2.7.3.3.1 Introduction Software Requirements Specification

This button allows users to navigate to the Edit Invoice Page to edit invoice details.

3.2.7.3.3.2 Inputs

The changes that the user wants to make to Invoice Number, Date Created, Supplier Name, Supplier's Phone, Supplier's Email, VAT, Invoice Total Price and information of parts that were used.

3.2.7.3.3.3 Processing

Step 1: The user presses the button "Edit".

Step 2: The system redirects the user to the Edit Invoice Page.

Step 3: The user presses the button "Save".

3.2.7.3.3.4 Outputs

Success: The invoice and its associated data are saved in the database.

Failure: An error message is displayed if required fields are incomplete or if a system issue occurs.

3.2.7.3.4 DELETE INVOICE

3.2.7.3.4.1 Introduction Software Requirements Specification

This button allows users to delete the chosen invoice.

3.2.7.3.4.2 Inputs

The details of a specific invoice that is in the database.

3.2.7.3.4.3 Processing

Step 1: The user presses the button "Delete".

3.2.7.3.4.4 Outputs

Success: The invoice and its associated data are deleted from the database.

Failure: An error message is displayed if a system issue occurs.

3.2.7.3.5 SEARCH INVOICE

3.2.7.3.5.1 Introduction Software Requirements Specification

This search bar allows users to search for specific invoices they want to see.

3.2.7.3.5.2 Inputs

Supplier Name, Phone, Email

3.2.7.3.5.3 Processing

Step 1: The user presses the search bar.

Step 2: Show a modal to choose what to search for and press enter or the Search button.

3.2.7.3.5.4 Outputs

The user will see the specific invoice they searched for. The invoice information includes Invoice Number, Date Added and Supplier, Phone, Email, Total, VAT.

3.2.7.3.6 PRINT INVOICE

3.2.7.3.6.1 Introduction Software Requirements Specification

This requirement outlines the functionality of the printing button, that allows the user to press, and a pop-up window will display if they wish to print the invoice's specific information.

3.2.7.3.6.2 Inputs

The details of a specific invoice that is in the database.

3.2.7.3.6.3 Processing

Step 1: The user presses the button "Print".

Step 2: A small pop-up window will appear to confirm or decline printing the invoice's data.

3.2.7.3.6.4 Outputs

Success: The invoice's information will be printed.

Failure: The invoice's information will not be printed.

3.2.8 Cars Management

3.2.8.1 Purpose

The purpose of this page, found in the customer page, is to enable the user to add new cars with detailed attributes, edit an existing car by inputting details such as Brand, Model, License Plate, VIN, Manufacture Date, Fuel Type, Kw/Horsepower, Engine Type, Km/Miles, Color and Comments, edit the car list using a dedicated button, delete a specified car from the list, search for the specific car they want to see and utilize a printing button that displays a pop-up window to confirm printing the car's information.

3.2.8.2 Stimulus/Response Sequence

Stimulus: The user interacts with the Customer Page by searching for the specific car, editing car details, adding new cars, deleting cars and printing individual cars or a list of chosen cars.

Response: The system processes the user's inputs and updates the cars list or saves newly added cars.

3.2.8.3 Associated Functional Requirements

3.2.8.3.1 ADD CAR

3.2.8.3.1.1 Introduction Software Requirements Specification

The Add Car Button function allows users to create multiple entries for cars to be stored for each customer.

3.2.8.3.1.2 Inputs

Brand, Model, License Plate, VIN, Manufacture Date, Fuel Type, Kw/Horsepower, Engine Type, Km/Miles, Color and Comments.

3.2.8.3.1.3 Processing

Step 1: The user presses the button “Add Car”.

Step 2: The system create a tab with Car Information

Step 3: The user presses the button “Save Customer”.

3.2.8.3.1.4 Outputs

Success: Car successfully saved.

Failure: Car not saved. Duplicate found.

3.2.8.3.2 EDIT CAR

3.2.8.3.2.1 Introduction Software Requirements Specification

This button allows users to edit car details.

3.2.8.3.2.2 Inputs

The changes that the user wants to make on Brand, Model, License Plate, VIN, Manufacture Date, Fuel Type, Kw/Horsepower, Engine Type, Km/Miles, Color and Comments.

3.2.8.3.2.3 Processing

Step 1: The user presses the button “Edit”.

Step 2: The system redirects the user to the Page that includes car details.

Step 3: The user presses the button “Save”.

3.2.8.3.2.4 Outputs

Success: The car and its associated data are saved in the database.

Failure: An error message is displayed if required fields are incomplete or if a system issue occurs.

3.2.8.3.3 DELETE CAR

3.2.8.3.3.1 Introduction Software Requirements Specification

This button allows users to delete the chosen car.

3.2.8.3.3.2 Inputs

The details of a specific part that is in the database.

3.2.8.3.3.3 Processing

Step 1: The user presses the button “Delete”.

3.2.8.3.3.4 Outputs

Success: The car and its associated data are deleted from the database.

3.2.8.3.4 PRINT CAR

3.2.8.3.4.1 Introduction Software Requirements Specification

This requirement outlines the functionality of the printing button, located in the customer section, that allows the user to press, and a pop-up window will display if they wish to print car’s information.

3.2.8.3.4.2 Inputs

The details of a specific car that is in the database.

3.2.8.3.4.3 Processing

Step 1: The user presses the button “Print”.

Step 2: A small pop-up window will appear to confirm or decline to print car’s data.

3.2.8.3.4.4 Outputs

Success: Car information will be printed.

Failure: Car information will not be printed.

3.2.8.3.5 SEARCH CAR

3.2.8.3.5.1 Introduction Software Requirements Specification

This search bar allows users to search for the specific part they want to see.

3.2.8.3.5.2 Inputs

Brand, Model or License Plate

3.2.8.3.5.3 Processing

Step 1: The user presses the search bar.

Step 2: Show a modal to choose what to search for and press enter or the Search button.

3.2.8.3.5.4 Outputs

The user will see the specific car that they searched for. The car information includes, Brand, Model, License Plate, VIN, Manufacture Date, Fuel Type, Kw/Horsepower, Engine Type, Km/Miles, Color and Comments.

3.3 Performance Requirements

This section specifies the performance requirements for the software, detailing both static and dynamic numerical metrics related to the system's operation and user interaction. These requirements are designed to ensure the software can handle the expected workload and support the smooth functioning of the business operations.

- **Static Performance**
 - **Minimum Number of Concurrent Users:**
The system supports up to 4 concurrent users at any given time, corresponding to the maximum number of employees who will interact with the software simultaneously.
 - **Data Storage:**
The software will manage textual data, such as customer information, car details, car parts inventory, and service records. It is expected to handle up to 100GB of data over time, which includes customers' details, their vehicles, associated parts, and service logs.
- **Dynamic Performance**
 - **Response Time:**
The software provides a response time of less than 10 seconds for data retrieval and updates under normal operating conditions. This ensures efficient interaction with the system when retrieving or updating customer, car, or service data.
 - **Minimum Number of Transactions per Minute:**
The software can handle at least 10 transactions per minute during peak usage. These transactions include adding new customers, registering vehicles, updating service records, and managing parts inventory.
 - **Data Processing:**
The system is capable of processing up to 100 text entries per minute, which includes the entry of new customer records, car details, and service records, without significant degradation in performance.

3.4 Design Constraints

3.4.1 Cross-Platform Compatibility

The software is fully compatible with the latest versions of major web browsers, including Chrome, Firefox, Safari and Edge, as well as mobile operating systems iOS and Android. It is designed to provide consistent and fully functional user experience across all platforms, adapting to different screen sizes and resolutions.

3.4.2 Mobile Responsiveness

The user interface (UI) is fully responsive, adapting automatically to different screen sizes and providing consistent user experience on devices ranging from desktops to smartphones and tablets. UI elements such as buttons, forms, and navigation menus resize and reorganize as necessary for small screens, ensuring ease of use.

3.4.3 Network Requirements

The software is optimized for use on mobile networks with varying connection speeds, including 3G, 4G, 5G and Wi-Fi. It can maintain optimal performance under low-bandwidth conditions (such as 3G or slower Wi-Fi), with minimal data usage to ensure smooth operation.

3.4.4 Mobile Performance Optimization

The software is optimized for mobile devices, ensuring smooth performance even on lower-end devices with limited processing power and memory. Large graphics, animations, and scripts are minimized to prevent slowdowns, and battery consumption is kept to a minimum, providing a responsive user experience.

3.4.5 Security and Data Protection

All data transmitted by the software is encrypted using HTTPS to protect sensitive information.

3.5 Software System Attributes

3.5.1 Reliability

The system must be reliable to ensure smooth daily operations for the user. It should handle errors such as Log in error and wrong input error, by displaying to the user the right message for the specific error. The functions of the system must be clear and work properly, so the user can navigate through the system without any problems.

It will provide Backup and Recovery mechanisms, with weekly automatically Database backups in case of failure. Also, after every change, the system must ensure that the change has also been made in the database successfully.

3.5.2 Availability

The system will be web-based and accessible 24/7, for the users from everywhere internet is available. In case of Database or server failure, the system will continue working with the use of another server.

3.5.3 Security

Cryptography will protect customer and business data from unauthorized access during data or transmission.

3.5.4 Maintainability

The software will be easy to maintain through a modular design. This will allow updates or fixes to specific parts without affecting the entire system. It will use simple and clear coding to ensure developers can easily understand and modify it. The administrators will easily manage the system through a user-friendly interface. Detailed documentation will provide guidelines on the system's structure and troubleshooting steps.

3.5.5 Portability

The software will be designed to work on different machines and operating systems, such as Windows, Linux, Android, IOS, MacOS. Also, as a web application it will be compatible with Chrome, Firefox, Safari, Edge. Software will adapt to new environments with minimal changes.

3.6 Logical Database Requirements

Customer

First Name
Surname
Company Name
Address
Telephone Numbers
E-mail Address
Cars

Part

Part/Description
Supplier Details
Pieces Purchased
Date Created
Price Per Piece
VAT
Price Bulk
Selling Price

Job Card

Customer
Phone
Registration Plate
Location of Visit
Date of Call
Job Description by Customer
Job Report
Job Start Date
Job End Date
Rides
Car Brand and Model
Drive costs
Parts Used/Replace
Price for Each Part
Photos of Damage
Total Costs

Invoices

Invoices Number
Date Created
Supplier Name
Supplier's Phone
Supplier's Email
VAT
Invoice Total Price
Information of parts that used

User Managment

Username
Email
Password

Car

Brand
Model
License Plate
VIN
Manufacture Date
Fuel Type
Kw/Horsepower
Engine Type
Km/Miles
Color
Comments

3.7 Other Requirements

- No additional installation or software/hardware will be required.
- The system will support the English language for all interfaces.

4. APPENDICES

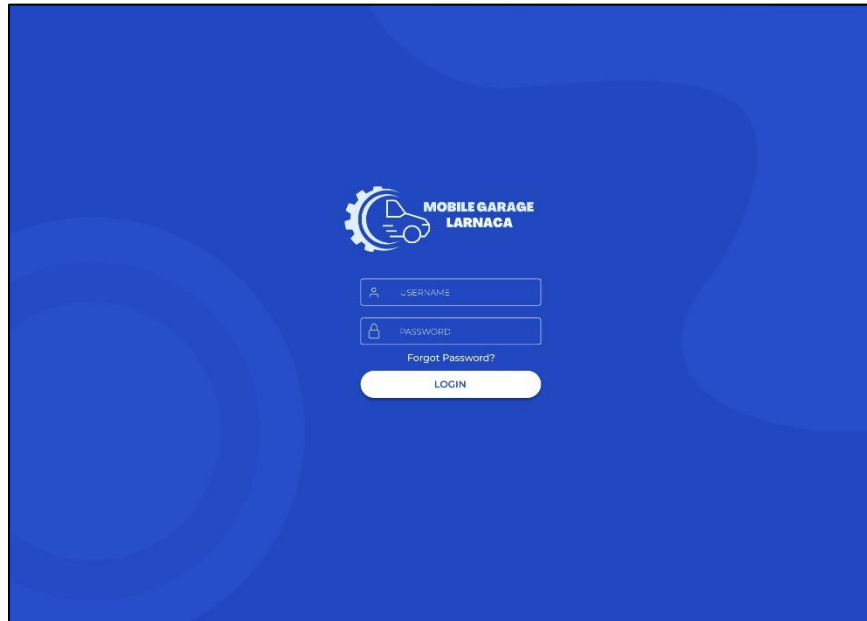


Figure 4.1.1: Login Page

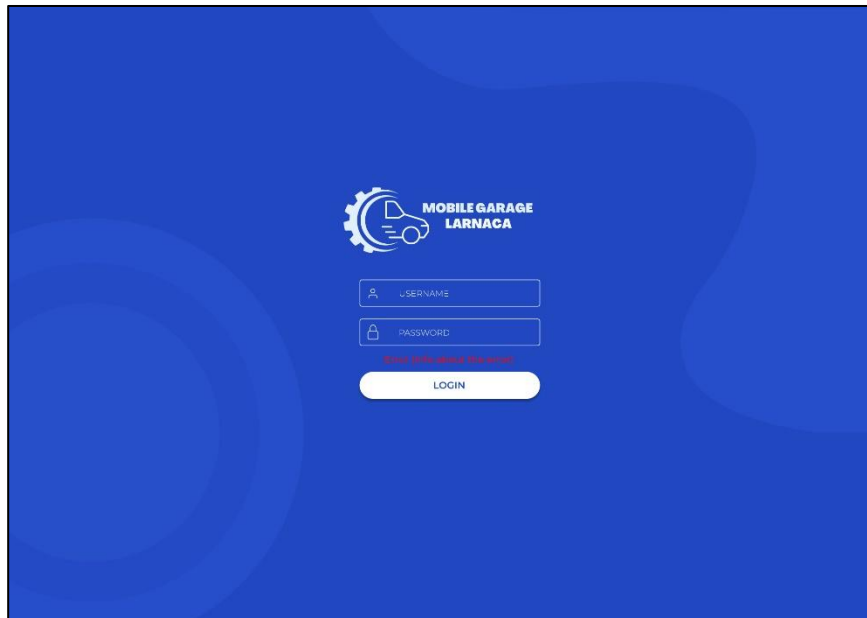


Figure 4.1.2: Login Page Error

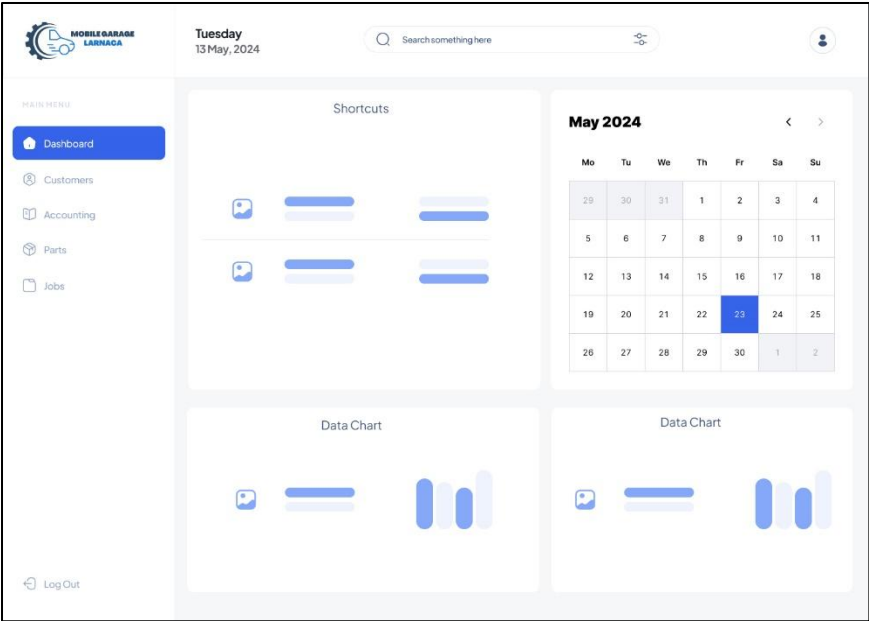


Figure 4.1.3: Dashboard

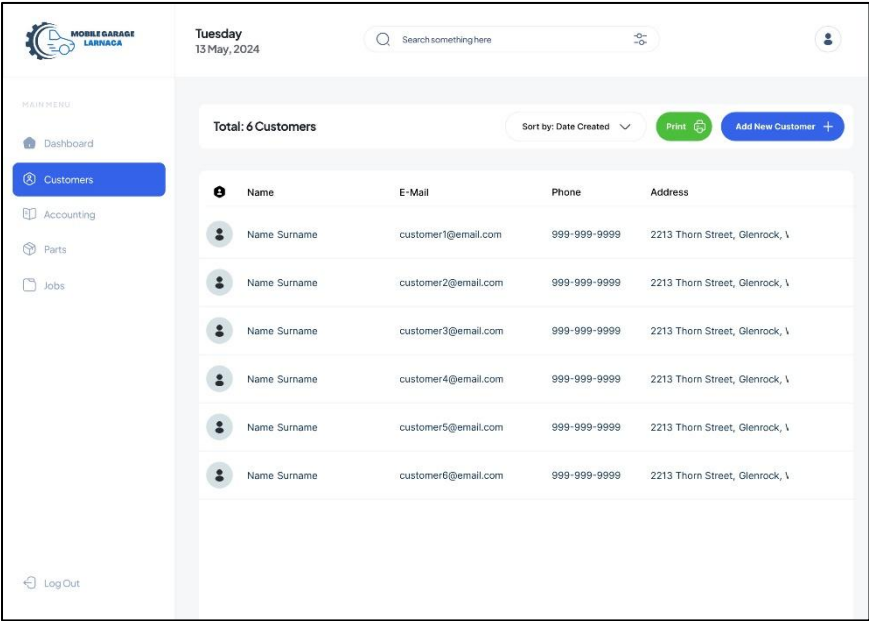



Figure 4.1.4: Customer Page

Figure 4.1.5: New Customer Page

MOBILE GARAGE
LARNACA

MAIN MENU

Dashboard

Customers

Accounting

Parts

Jobs

Log Out

Tuesday
13 May, 2024

Customer

Print

Job Cards

First Name

Surname

Company Name

Address

Phone Number

E-mail Address

Brand Model Registration

Brand

Model

License Plate

Vehicle Identification Number (VIN)

Manufacture Date

Fuel Type

Engine Type

Km/Miles

Colour

Comments

Edit +

Delete

Figure 4.1.6: View Customer Info Page

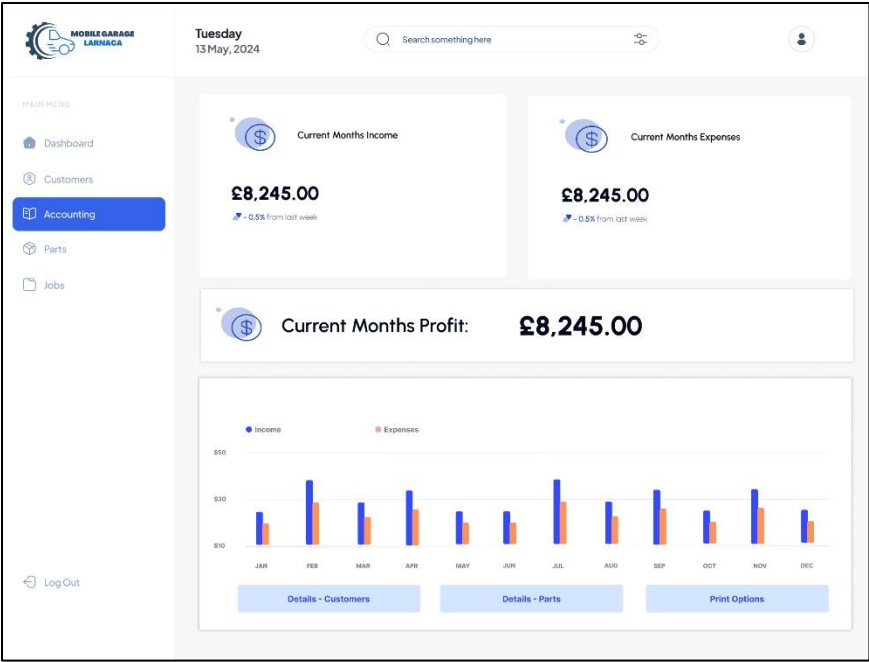


Figure 4.1.7: Accounting Page

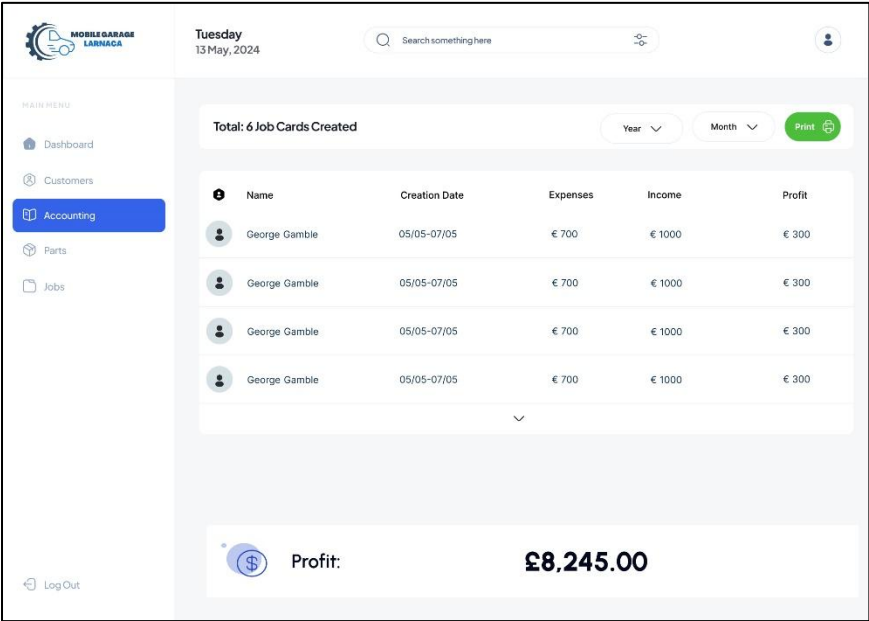


Figure 4.1.8: Accounting - Customer Job Info Page

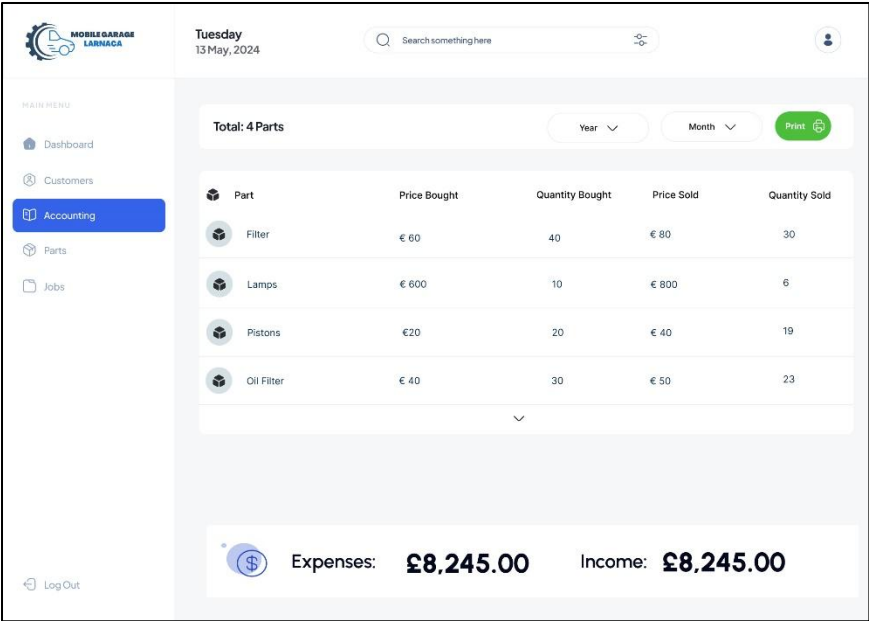


Figure 4.1.9: Accounting - Parts Info Page

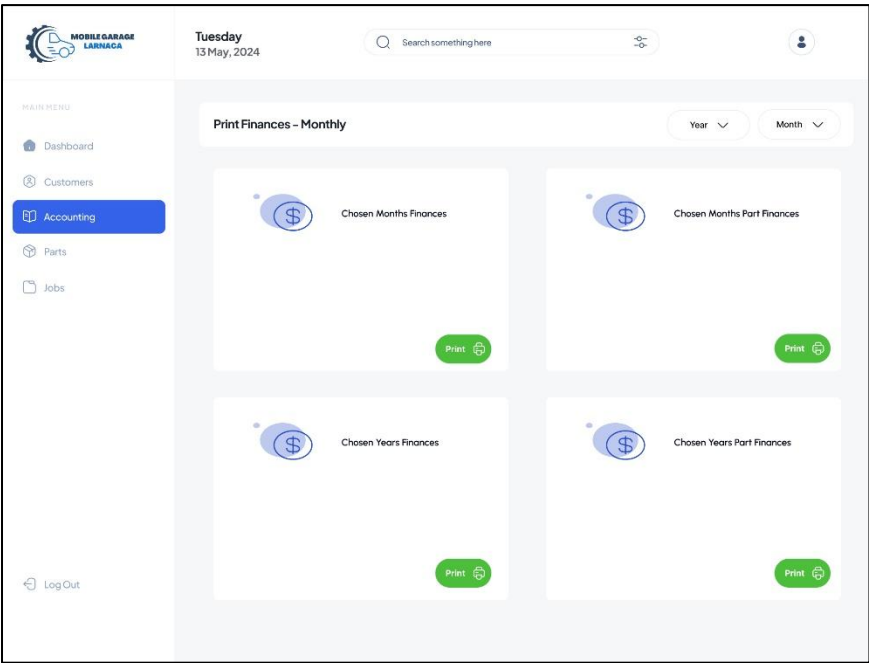


Figure 4.1.10: Accounting - Printing Options Page

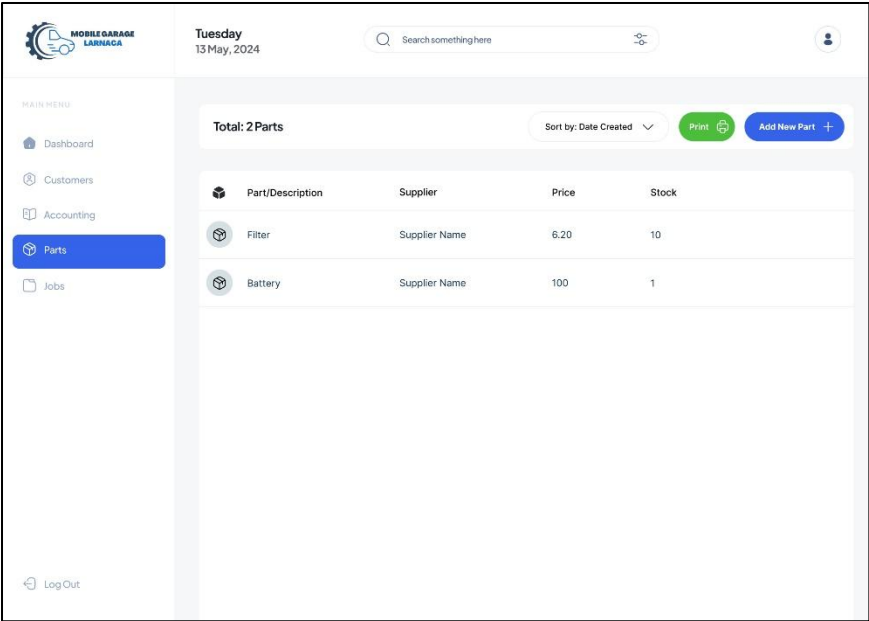


Figure 4.1.11: Parts Page

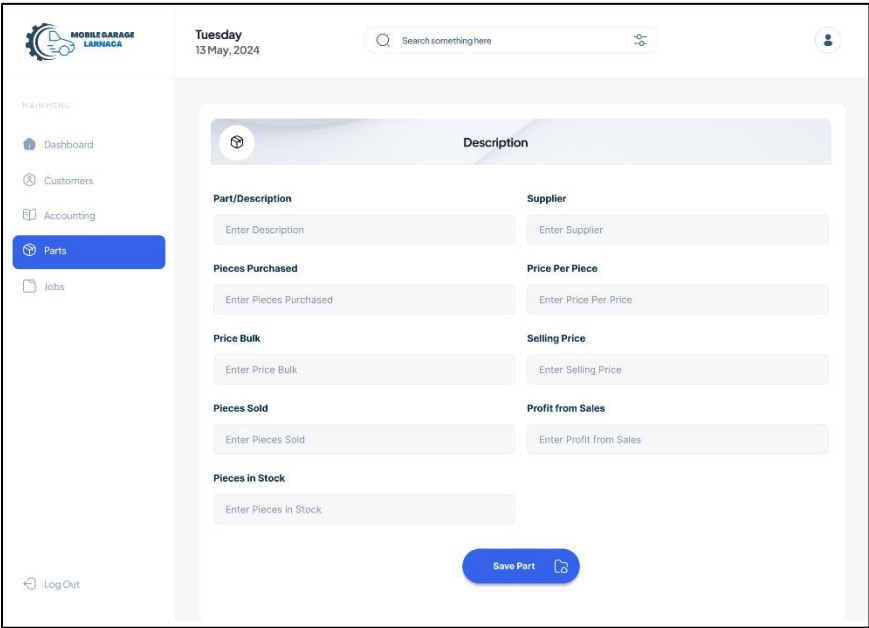


Figure 4.1.12: New Part Page

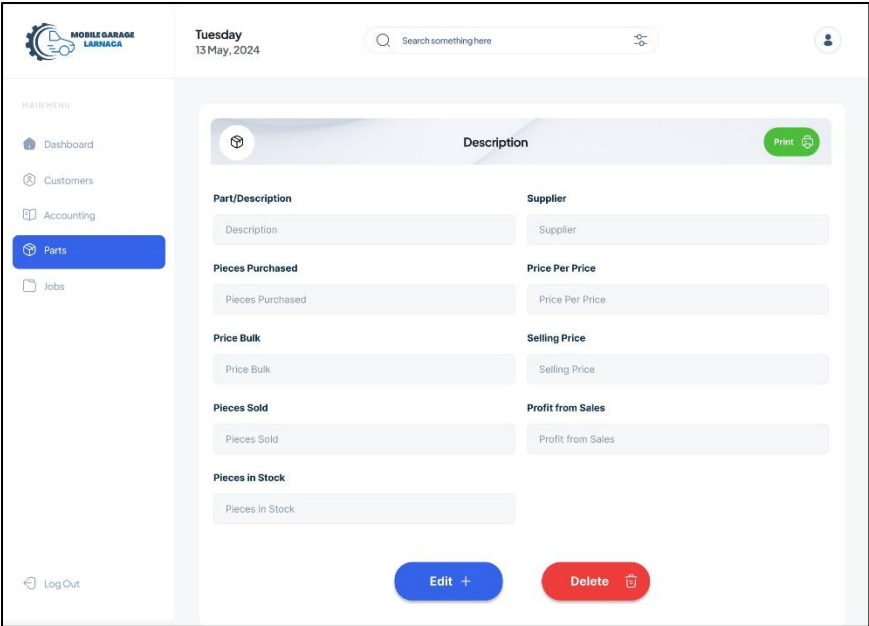


Figure 4.1.13: View Part Page

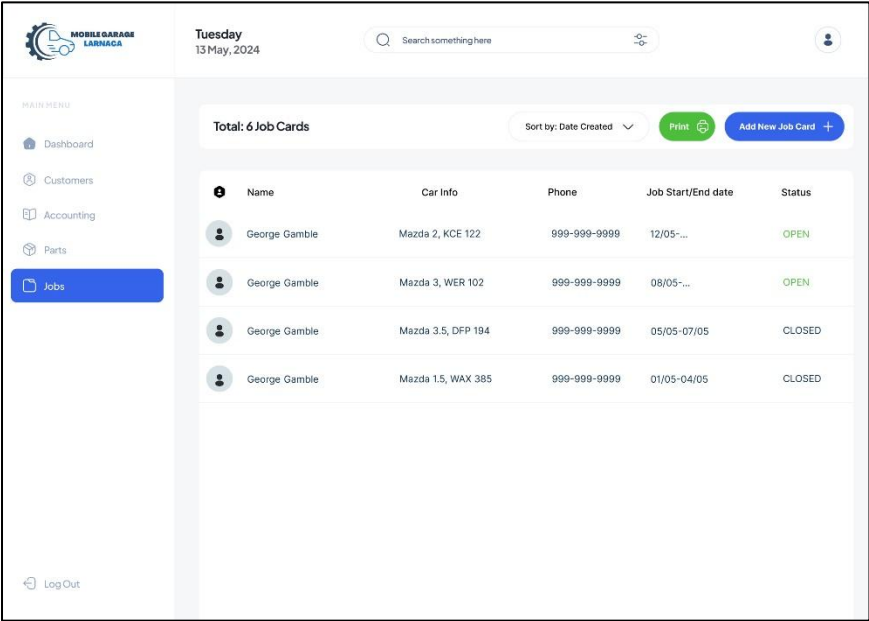


Figure 4.1.14: Jobs Page

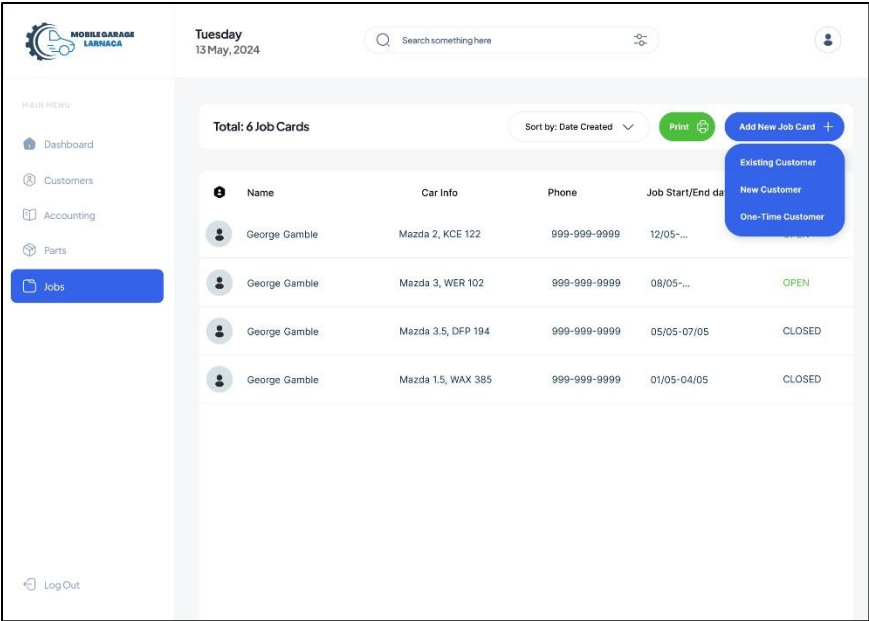




Figure 4.1.15: New Job - Card button Page



Tuesday
13 May, 2024



MAIN MENU

Dashboard

Customers

Accounting

Parts

Jobs

Log Out

Job Card

Customer

Select Customer

Phone

Enter Phone

Registration Plate

Enter Registration plate

Location of Visit

Enter Location of Visit

Date of Call

Enter Date of Call

Job Description by Customer

Enter Description

Job Report

Enter Action

Job Start Date

Enter Job Start Date

Job End Date

Enter Job End Date

Rides

Enter Rides/Extra Rides

Car Brand and Model

Select Car Brand and Model

Drive Costs

Enter Costs

Parts Used/replaced

Add Parts Used/Replaced

Price for Each Part

Add Price for Each Part

Photos of damage


Add photos

Total Costs


Enter Total Costs

Save Job Card

Figure 4.1.16: New Job Card - Existing Customer Page



Tuesday
13 May, 2024



MAIN MENU

Dashboard

Customers

Accounting

Parts

Jobs

Log Out

Job Card

Customer

Enter Name

Phone

Enter Phone

Registration Plate

Enter Registration plate

Location of Visit

Enter Location of Visit

Date of Call

Enter Date of Call

Job Description by Customer

Enter Description

Job Report

Enter Action

Job Start Date

Enter Job Start Date

Job End Date

Enter Job End Date

Rides

Enter Rides/Extra Rides

Car Brand and Model

Select Car Brand and Model

Drive Costs

Enter Costs

Parts Used/replaced

Add Parts Used/Replaced +

Price for Each Part

Add Price for Each Part

Photos of damage

Add photos

Total Costs

Enter Total Costs

Save Job Card

Figure 4.1.17: New Job Card - One-Time Customer Page

Tuesday
13 May, 2024

Search something here

MAIN MENU

Dashboard

Customers

Accounting

Parts

Jobs

Log Out

Job Card

Finish Job

Customer

Customer

Phone

Phone

Registration Plate

Registration plate

Location of Visit

Location of Visit

Date of Call

Date of Call

Job Description by Customer

Description

Job Report

Action

Job Start Date

Job Start Date

Job End Date

Job End Date

Rides

Rides/Extra Rides

Car Brand and Model

Car Brand and Model

Drive Costs

Costs

Parts Used/replaced

Parts Used/Replaced

Price for Each Part

Price for Each Part

Photos of damage

Photos


Total Costs

Total Costs

Edit +

Delete

Figure 4.1.18: Job Card - Open Job Page



MAIN MENU

Dashboard

Customers

Accounting

Parts

Jobs

Log Out

Tuesday
13 May, 2024

Job Card

PrintInvoice

Customer

Registration Plate

Date of Call

Job Report

Job End Date

Car Brand and Model

Parts Used/replaced

Photos of damage

Phone

Location of Visit

Job Description by Customer

Job Start Date

Rides

Drive Costs

Price for Each Part

Total Costs

Edit +

Delete

Figure 4.1.19: Job Card - Closed Job Page

04/18/25

Page 59

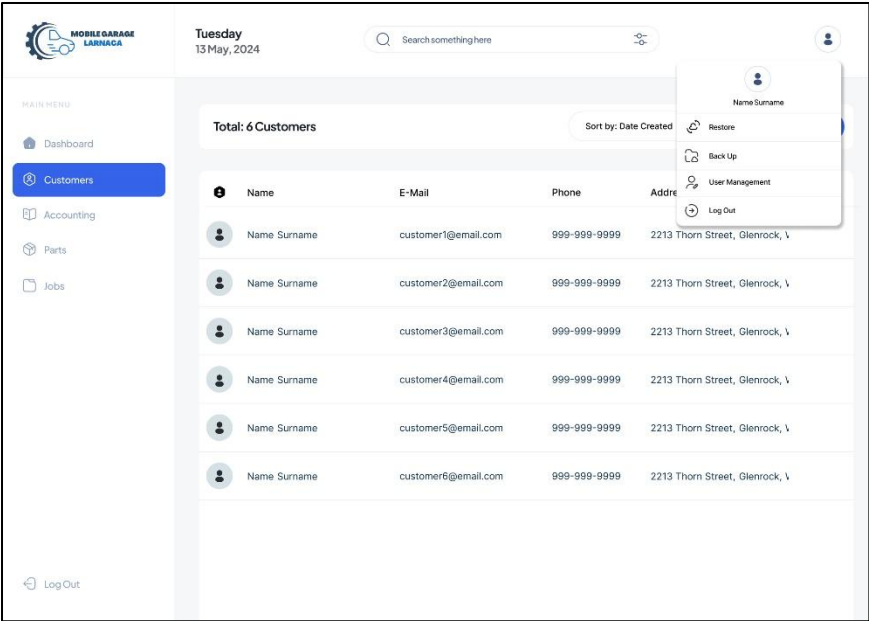


Figure 4.1.20: Profile - Drop Down Menu

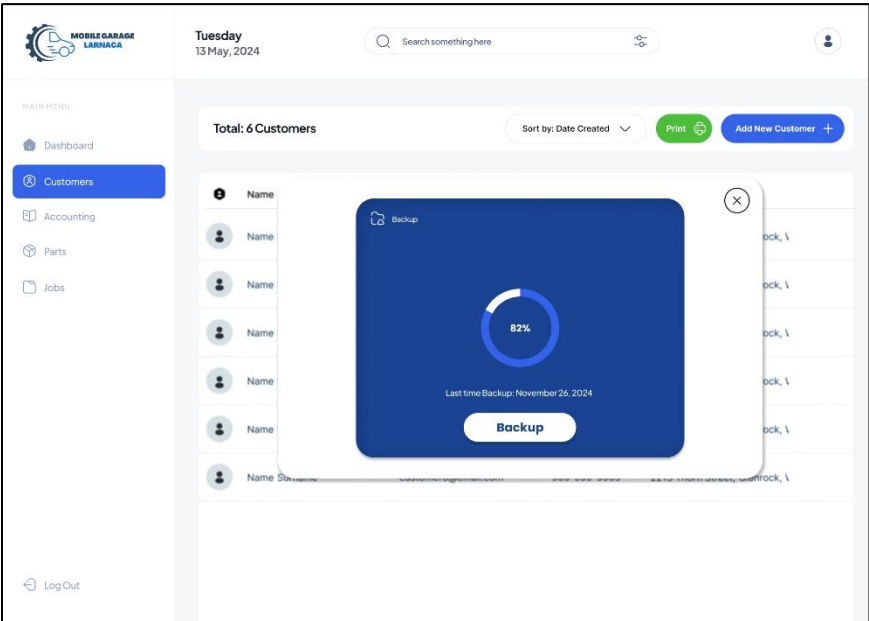


Figure 4.1.21: Backup - Pop Up Screen

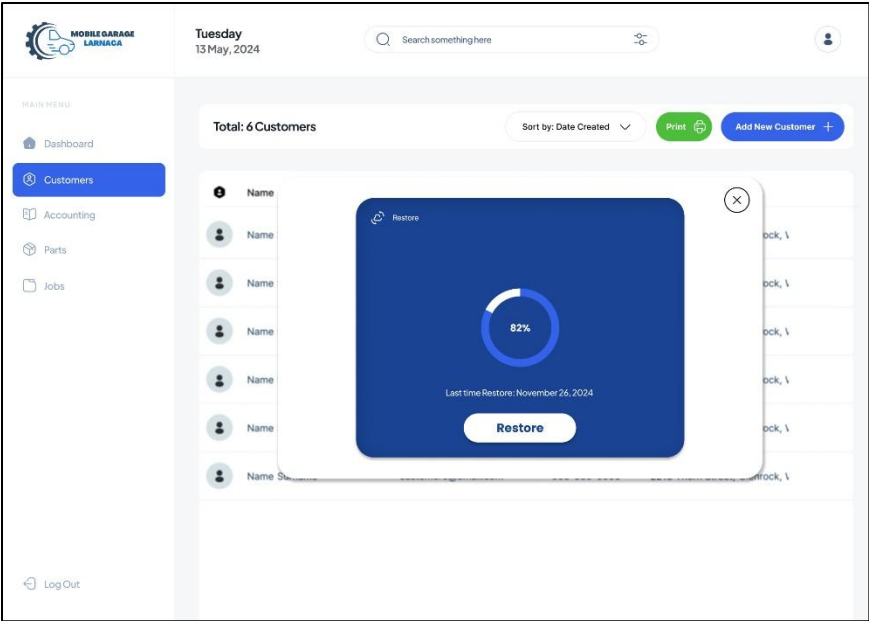


Figure 4.1.22: Restore - Pop Up Screen

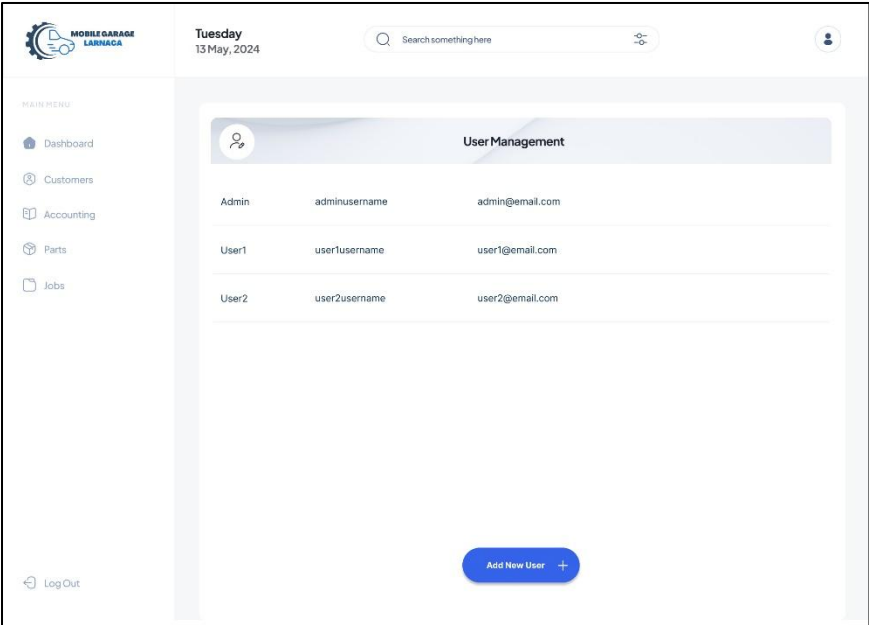


Figure 4.1.23: User Management – All Users Page

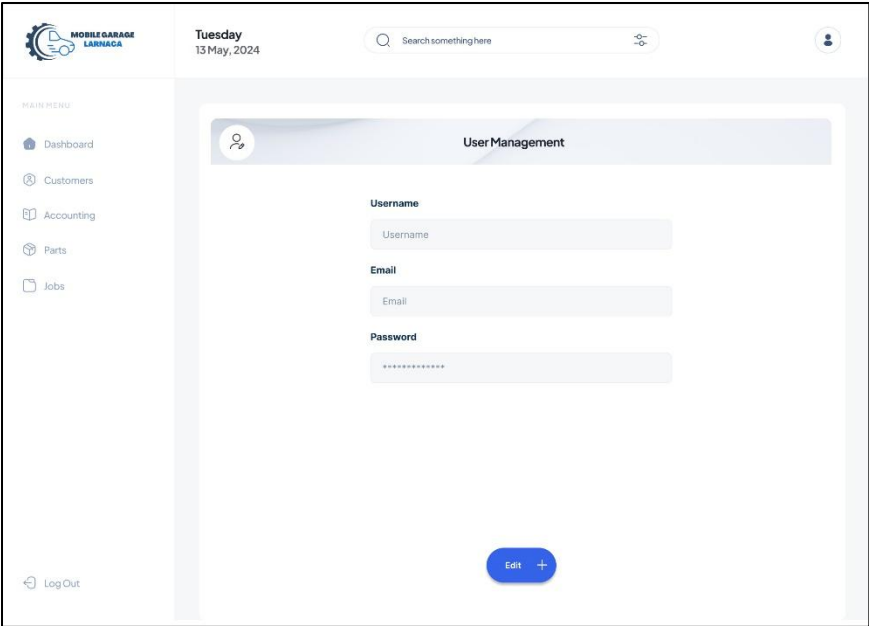


Figure 4.1.24: User Management – User Info Page

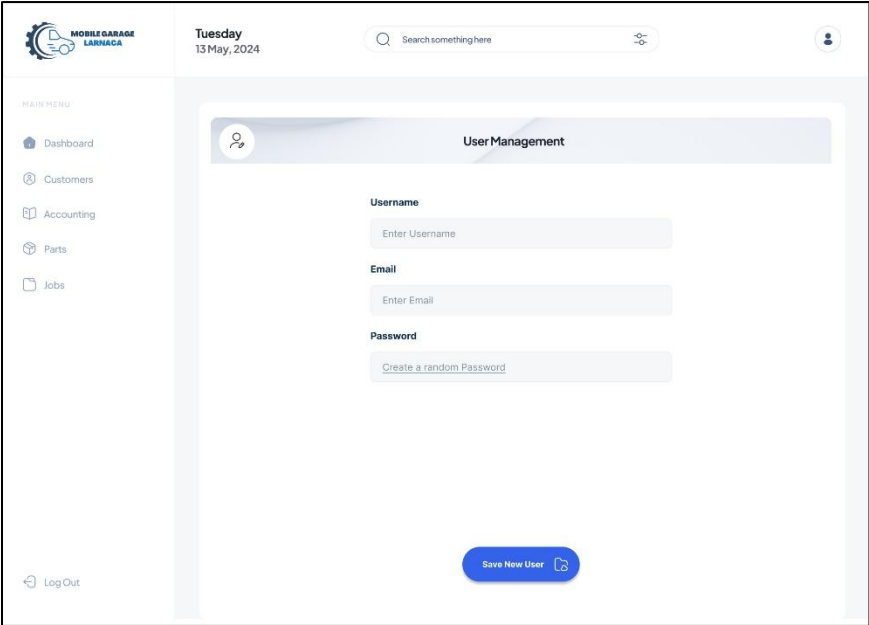


Figure 4.1.25: User Management – Create New User Page

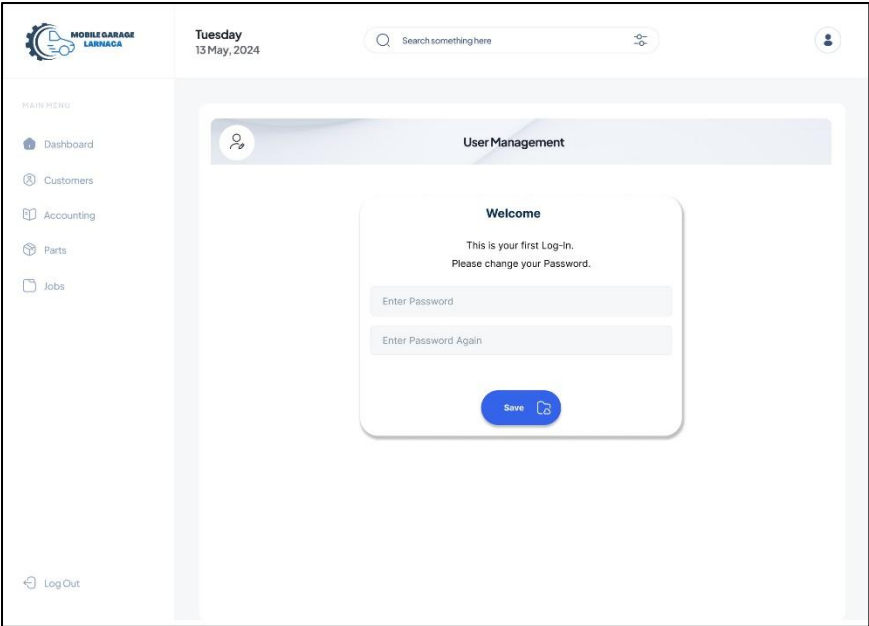


Figure 4.1.26: User Management – New User First Log In Page

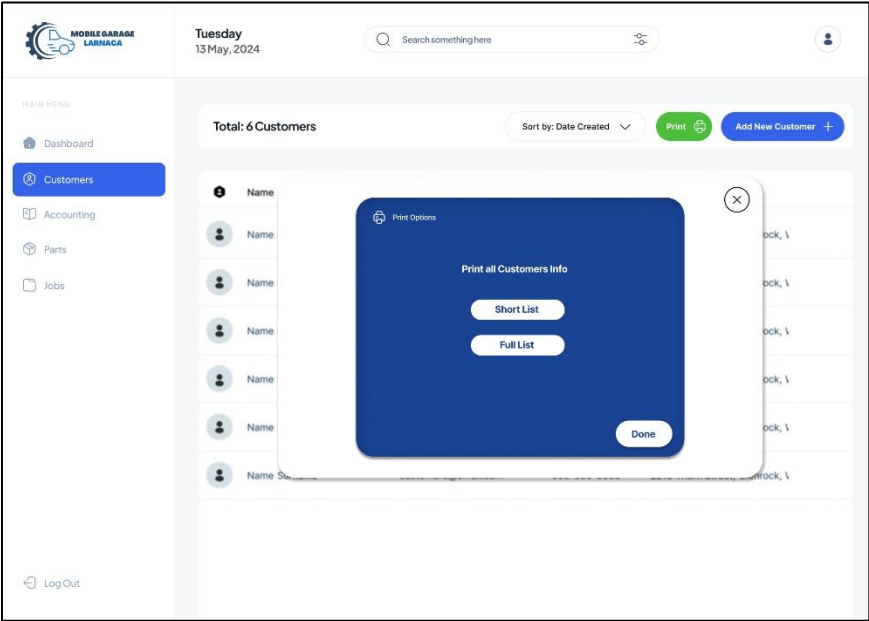


Figure 4.1.27: Customers - Print Options Pop Up