MOBILE GARAGE LARNACA

Software Design Document

Version 1

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REVISION CHART

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Version 1	Antonis Andreou Gabriel Vasile Georgios Architektonidis Jorgos Xidias Kyriacos Andreou Stylianos Kyprianou	This initial version defines the system's specifications, architecture, and functional requirements.	14/02/2025
Final Version	Antonis Andreou Gabriel Vasile Georgios Architektonidis Jorgos Xidias Kyriacos Andreou Stylianos Kyprianou	The document was updated according to the final version of the system, where a few things have been changed from the original design.	14/04/2025

CONTENTS

1. INTRODUCTION

1.1 Purpose

The purpose of this document is to record the system's functions in greater detail and with the use of diagrams so that the team is supported later in the implementation phase. The design aims at a deeper understanding of the system's structure and operation, with the help of architectural and structured design. This document plays a significant role in the system's development as, like the others, it aims at quality and reliability, simplified development, and the reuse of code components identified as modules. Naturally, it must strictly follow the specifications document to ensure that the system is developed according to the client's requirements.

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.

- Customer: Refers to the customers of the mobile garage company who request services or purchase products. Clients may include individual customers or corporate entities.

- <u>Job Card</u>: 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.

- <u>Database</u>: A structured and centralized repository used to store and manage all system data, including customer records, inventory details, job information, and accounting.

1.4 References

1. Software Technology course CEI_324, Software Design Document.

2. Tool for Diagrams: **draw.io**

3. Tool for Sequence Diagrams: **sequencediagram.org**

1.5 Overview

The design document focuses in detail on the system design of the respective company. The document is divided into two sections. In the first part, the reader can discern the purpose of the document, a detailed explanation of how the system functions, and its objectives, both for the users and the business itself. Additionally, the terms used in the system's documentation are clarified, along with the sources from which the team gathered knowledge and the organization of the document.

The second section of the document is dedicated to object-oriented design, which is structured into four key steps:

1. Construction of interaction diagrams (sequence diagrams and collaboration diagrams) for each scenario to illustrate object interactions over time.

2. Development of detailed class diagrams to represent the structure and relationships of the system's objects.

3. Product design using "clients of objects", focusing on how different components interact with objects.

4. Analytical design for objects, providing an in-depth examination of the internal workings of each object.

This section ensures a comprehensive approach to object interactions and their behaviour within the system, without the use of structured design methodologies such as Data Flow Analysis (DFA) or architectural flow modelling.

2. OBJECT-ORIENTED SYSTEM DESIGN

2.1 Detailed Design

2.1.1 Detailed Design for User Access

2.1.1.1 Login

Function Name	Log In	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Username	Varchar(32)
	Email	Varchar(100)
	Password	Varchar(32)
Output Arguments	/	
Error Messages	"Invalid Username or Password"	
Files Accessed	Users File	
Files Changed	/	
Description	Function that the system calls to authenticate a user and start a session.	

Function Name	Validate User	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Username	Varchar(32)
	Email	Varchar(100)
	Password	Varchar(32)
Output Arguments	/	
Error Messages	"Username Not Found"	
Files Accessed	Users File	
Files Changed	/	
Description	Function that checks if the provided username and password meet system security requirements.	

Function Name	Authenticate User	
Return Type	Boolean	
Input Arguments	**Argument Type**	**Type**
	Username	Varchar(32)
	Email	Varchar(100)
	Password	Varchar(32)
Output Arguments	/	
Error Messages	"Incorrect Part's Information"	
Files Accessed	Users File	
Files Changed	/	
Description	Function that verifies the username and password against stored credentials.	

2.1.1.2 Forgot Password

Function Name	Validate User Email	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Email	Varchar(100)
Output Arguments	/	
Error Messages	"Email Not Found"	
Files Accessed	Users File	
Files Changed	/	
Description	Function that checks if the provided email exists in the system before proceeding with password reset.	

Function Name	Validate Security Question	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Security Question	Varchar(255)
Output Arguments	/	
Error Messages	"Email Not Found"	
Files Accessed	Users File	
Files Changed	/	
Description	Function that checks if the provided email exists in the system before proceeding with password reset.	

2.1.1.3 Log Out

Function Name	Request Logout	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Email	Varchar(100)
	Session Token	Varchar(255)
Output Arguments	/	
Error Messages	/	
Files Accessed	Active Sessions File	
Files Changed	/	
Description	Function that allows a user to request to log out of their active session.	

Function Name	Validate Session	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Email	Varchar(100)
	Session Token	Varchar(255)
Output Arguments	/	
Error Messages	/	
Files Accessed	Active Sessions File	
Files Changed	/	

Description	Function that checks if a given session is still active and valid before allowing logout.

Function Name	Terminate Session	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Email	Varchar(100)
	Session Token	Varchar(255)
Output Arguments	/	
Error Messages	/	
Files Accessed	Active Sessions File	
Files Changed	Active Sessions File	
Description	Function that removes an active session, logging the user out of the system.	

2.1.2 Detailed Design for Job Cards

2.1.2.1 Add

Function Name	Add Job Card	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Job Card Id	Integer
	Customer	Varchar (41)
	Phone	Varchar (15)
	Registration Plate	Varchar (10)
	Location of Visit	Varchar (60)
	Date of Call	Date

	Job Description by Customer	String
	Job Report	String
	Job Start Date	Date
	Job End Date	Date
	Rides	Integer
	Car Brand and Model	varchar (101)
	Drive Costs	float
	Parts Used/Replaced	String
	Price for Each Part	Float
	Photos of Damage	Blob
	Total Costs	Float
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to add a new Job Card	
Function Name	Validate Job Card	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Job Card Id	Integer
	Customer	Varchar (41)
	Phone	Varchar (15)
	Registration Plate	Varchar (10)
	Location of Visit	Varchar (60)
	Date of Call	Date
	Job Description by Customer	String
	Job Report	String

	Job Start Date	Date
	Job End Date	Date
	Rides	Integer
	Car Brand and Model	varchar (101)
	Drive Costs	float
	Parts Used/Replaced	String
	Price for Each Part	Float
	Photos of Damage	Blob
	Total Costs	Float
Output Arguments	/	
Error Messages	"Incorrect Job Card 's Information"	
Files Accessed	/	
Files Changed	/	
Description	Function that calls to validate the new Job Card's information	

Function Name	Generate Job Card ID	
Return Type	Int	
Input Arguments	**Argument Type**	**Type**
	Job Card ID	Integer
Output Arguments	**Argument Type**	**Type**
	Job Card ID	Integer
Error Messages	/	
Files Accessed	Job Card File	
Files Changed	/	

Description	Function that calls to generate new Job Card 's ID

Function Name	Save Job Card Data	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Job Card Id	Integer
	Customer	Varchar (41)
	Phone	Varchar (15)
	Registration Plate	Varchar (10)
	Location of Visit	Varchar (60)
	Date of Call	Date
	Job Description by Customer	String

	Job Report	String
	Job Start Date	Date
	Job End Date	Date
	Rides	Integer
	Car Brand and Model	varchar (101)
	Drive Costs	float
	Parts Used/Replaced	String
	Price for Each Part	Float
	Photos of Damage	Blob
	Total Costs	Float
Output Arguments	/	
Error Messages	"Could Not Save Job Card"	
Files Accessed	Job Card File	
Files Changed	Job Card File	
Description	Function that calls to save new Job Cards's data	

2.1.2.2 Delete

Function Name	Get Job Card	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Job Card ID	Integer
Output Arguments	/	
Error Messages	/	

Files Accessed	Job Card File
Files Changed	/
Description	Function that calls to get selected Job Card 's data

Function Name	Return Job Card Data	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Job Card Id	Integer
	Customer	Varchar (41)
	Phone	Varchar (15)
	Registration Plate	Varchar (10)
	Location of Visit	Varchar (60)
	Date of Call	Date
	Job Description by Customer	String
	Job Report	String
	Job Start Date	Date
	Job End Date	Date
	Rides	Integer
	Car Brand and Model	varchar (101)
	Drive Costs	float
	Parts Used/Replaced	String
	Price for Each Part	Float
	Photos of Damage	Blob
	Total Costs	Float
Output Arguments	/	
Error Messages	/	

Files Accessed	Job Card File
Files Changed	/
Description	Function that Job Card calls to return selected Job Card 's data

Function Name	Show Job Card Data	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Job Card Id	Integer
	Customer	Varchar (41)
	Phone	Varchar (15)
	Registration Plate	Varchar (10)
	Location of Visit	Varchar (60)
	Date of Call	Date
	Job Description by Customer	String
	Job Report	String
	Job Start Date	Date
	Job End Date	Date
	Rides	Integer
	Car Brand and Model	varchar (101)
	Drive Costs	float
	Parts Used/Replaced	String
	Price for Each Part	Float
	Photos of Damage	Blob
	Total Costs	Float
Output Arguments	/	
Error Messages	/	

Files Accessed	/
Files Changed	/
Description	Function that calls to show to the User selected Job Card 's data

Function Name	Show Confirmation Window	
Return Type	Boolean	
Input Arguments	/	
Output Arguments	**Argument Type**	**Type**
	Answer	Boolean
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to show a confirmation window for deleting selected Job Card	

Function Name	Delete Job Card	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Job Card ID	Integer
Output Arguments	/	
Error Messages	"Could Not Delete Job Card"	

Files Accessed	/
Files Changed	/
Description	Function that User calls to delete selected Job Card 's information

2.1.2.3 Edit

Function Name	Edit Job Card	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Job Card Id	Integer
	Customer	Varchar (41)
	Phone	Varchar (15)

	Registration Plate	Varchar (10)
	Location of Visit	Varchar (60)
	Date of Call	Date
	Job Description by Customer	String
	Job Report	String
	Job Start Date	Date
	Job End Date	Date
	Rides	Integer
	Car Brand and Model	varchar (101)
	Drive Costs	float
	Parts Used/Replaced	String
	Price for Each Part	Float
	Photos of Damage	Blob
	Total Costs	Float
Output Arguments	/	
Error Messages	/	
Files Accessed	**Job Card File**	
Files Changed	**Job Card File**	
Description	Function that User calls to edit selected Job Card 's information	

2.1.2.4 Print / Print List

Function Name	Print Job Card	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Job Card Id	Integer
Output Arguments	/	

Error Messages	/
Files Accessed	/
Files Changed	/
Description	Function that User calls to print selected Job Card's information

Function Name	Show Printing Window	
Return Type	void	
Input Arguments	**Argument Type**	**Type**
	Job Card Id	Integer
	Customer	Varchar (41)
	Phone	Varchar (15)
	Registration Plate	Varchar (10)
	Location of Visit	Varchar (60)
	Date of Call	Date
	Job Description by Customer	String
	Job Report	String
	Job Start Date	Date
	Job End Date	Date
	Rides	Integer
	Car Brand and Model	varchar (101)
	Drive Costs	float
	Parts Used/Replaced	String
	Price for Each Part	Float
	Photos of Damage	Blob
	Total Costs	Float
Output Arguments	/	

Error Messages	/
Files Accessed	/
Files Changed	/
Description	Function that Job Card Manager calls to show printing window to the User

2.1.2.5 Search

Function Name	Search Job Card	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Job Card Id	Integer
	Customer	Varchar (41)
	Phone	Varchar (15)
	Car Brand and Model	varchar (101)
	Registration Plate	Varchar (10)
	Job Start Date	Date
	Job End Date	Date
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to search for a Job Card	

2.1.3 Detailed Design for Parts

2.1.3.1 Add

Function Name	Add Part	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Part/Description	Varchar(30)
	Supplier	Varchar(30)
	Pieces Purchased	Integer
	Price Per Piece	Decimal(10,2)

	Price Bulk	Decimal(10,2)
	Selling Price	Decimal(5,2)
	Pieces Sold	Integer
	Pieces in Stock	Integer
	Profit from Sales	Decimal(10,2)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to add a new Part	

Function Name	Validate Part	
Return Type	String	
	Argument Type	**Type**
	Part/Description	Varchar(30)
	Supplier	Varchar(30)
Input Arguments	Pieces Purchased	Integer
	Price Per Piece	Decimal(10,2)
	Price Bulk	Decimal(10,2)
	Selling Price	Decimal(5,2)
	Pieces Sold	Integer

	Pieces in Stock	Integer
	Profit from Sales	Decimal(10,2)
Output Arguments	/	
Error Messages	"Incorrect Part's Information"	
Files Accessed	/	
Files Changed	/	
Description	Function that Part Management calls to validate the new Part's information	

Function Name	Check Part Exists	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Part Name	Varchar(30)
	Supplier	Varchar(30)
Output Arguments	/	
Error Messages	"Part Already Exists"	

Files Accessed	Parts File
Files Changed	/
Description	Function that Part Management calls to check if the new Part doesn't exist

Function Name	Save Part Data	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Part/Description	Varchar(30)
	Supplier	Varchar(30)
	Pieces Purchased	Integer
	Price Per Piece	Decimal(10,2)

Function Name	Generate Part ID	
Return Type	Int	
Input Arguments	**Argument Type**	**Type**
	Part ID	Integer
Output Arguments	**Argument Type**	**Type**
	Part ID	Integer
Error Messages	/	
Files Accessed	Parts File	
Files Changed	/	
Description	Function that Part Management calls to generate new Part's ID	

	Price Bulk	Decimal(10,2)
	Selling Price	Decimal(5,2)
	Pieces Sold	Integer
	Pieces in Stock	Integer
	Profit from Sales	Decimal(10,2)
Output Arguments	/	
Error Messages	"Could Not Save Part"	
Files Accessed	Parts File	
Files Changed	Parts File	
Description	Function that Parts Management calls to save new Part's data	

2.1.3.2 Delete

Function Name	View Part	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Part ID	Integer
Output Arguments	/	

Error Messages	/
Files Accessed	/
Files Changed	/
Description	Function that User calls to view selected Part's data

Function Name	Get Part	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Part ID	Integer
Output Arguments	/	
Error Messages	/	
Files Accessed	Parts File	
Files Changed	/	
Description	Function that Parts Management calls to get selected Part's data	

Function Name	Return Part Data	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Part/Description	Varchar(30)
	Supplier	Varchar(30)
	Pieces Purchased	Integer
	Price Per Piece	Decimal(10,2)

	Price Bulk	Decimal(10,2)
	Selling Price	Decimal(5,2)
	Pieces Sold	Integer
	Pieces in Stock	Integer
	Profit from Sales	Decimal(10,2)
Output Arguments	/	
Error Messages	/	
Files Accessed	Parts File	
Files Changed	/	
Description	Function that Parts calls to return selected Part's data	

Function Name	Show Part Data	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Part/Description	Varchar(30)
	Supplier	Varchar(30)
	Pieces Purchased	Integer

	Price Per Piece	Decimal(10,2)
	Price Bulk	Decimal(10,2)
	Selling Price	Decimal(5,2)
	Pieces Sold	Integer
	Pieces in Stock	Integer
	Profit from Sales	Decimal(10,2)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that Parts Management calls to show to the User selected Part's data	

Function Name	Show Confirmation Window	
Return Type	Boolean	
Input Arguments	/	
Output Arguments	**Argument Type**	**Type**
	Answer	Boolean

Error Messages	/
Files Accessed	/
Files Changed	/
Description	Function that User calls to show a confirmation window for deleting selected Part

Function Name	Delete Part	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Part ID	Integer
Output Arguments	/	
Error Messages	"Could Not Delete Part"	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to delete selected Part's information	

2.1.3.3 Edit

Function Name	Edit Part	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Part/Description	Varchar(30)

	Supplier	Varchar(30)
	Pieces Purchased	Integer
	Price Per Piece	Decimal(10,2)
	Price Bulk	Decimal(10,2)
	Selling Price	Decimal(5,2)
	Pieces Sold	Integer
	Pieces in Stock	Integer
	Profit from Sales	Decimal(10,2)
Output Arguments	/	
Error Messages	/	
Files Accessed	Parts File	
Files Changed	Parts File	
Description	Function that User calls to edit selected Part's information	

Function Name	Print Part	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Part ID	Integer

Output Arguments	/
Error Messages	/
Files Accessed	/
Files Changed	/
Description	Function that User calls to print selected Part's information

2.1.3.4 Print / Print List

Function Name	Show Printing Window	
Return Type	void	
Input Arguments	**Argument Type**	**Type**
	Part/Description	Varchar(30)
	Supplier	Varchar(30)
	Pieces Purchased	Integer
	Price Per Piece	Decimal(10,2)
	Price Bulk	Decimal(10,2)
	Selling Price	Decimal(5,2)
	Pieces Sold	Integer
	Pieces in Stock	Integer
	Profit from Sales	Decimal(10,2)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	

Description	Function that Parts Management calls to show printing window to the User

2.1.3.5 Search

Function Name	Search Part	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Part Name/Description	Varchar(30)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to search a Part	

2.1.4 Detailed Design for Customers

2.1.4.1 Add

Function Name	Add Customer
Return Type	String

	Argument Type	Type
Input Arguments	First Name	Varchar(20)
	Surname	Varchar(20)
	Company	Varchar(40)
	Address	Varchar(60)
	Phone	Varchar(15)
	Email	Varchar(100)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to add a new Customer	

	Argument Type	Type
Function Name	Validate Customer	
Return Type	String	
Input Arguments	First Name	Varchar(20)
	Surname	Varchar(20)
	Company	Varchar(40)
	Address	Varchar(60)
	Phone	Varchar(15)
	Email	Varchar(100)
Output Arguments	/	
Error Messages	"Incorrect Customer's Information"	

Files Accessed	/
Files Changed	/
Description	Function that Customer Manager calls to validate the new Customer's information

Function Name	Check Customer Exists	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	First Name	Varchar(20)
	Surname	Varchar(20)
	Phone	Varchar(15)
Output Arguments	/	
Error Messages	"Customer Already Exists"	
Files Accessed	Customers File	
Files Changed	/	
Description	Function that Customer Manager calls to check if the new Customer doesn't exist	

Function Name	Generate Customer ID	
Return Type	Int	
Input Arguments	**Argument Type**	**Type**
	Customer ID	Integer

Output Arguments	Argument Type	Type
	Customer ID	Integer

Error Messages	/

Files Accessed	Customers File

Files Changed	/

Description	Function that Customer Manager calls to generate new Customer's ID

Function Name	Save Customer Data

Return Type	String

Input Arguments	Argument Type	Type
	Customer ID	Integer
	First Name	Varchar(20)
	Surname	Varchar(20)
	Company	Varchar(40)
	Address	Varchar(60)
	Phone	Varchar(15)
	Email	Varchar(100)

Output Arguments	/

Error Messages	"Could Not Save Customer"

Files Accessed	Customers File

Files Changed	Customers File

Description	Function that Customer Manager calls to save new Customer's data

2.1.4.2 Delete

Function Name	Show Customer Data	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	First Name	Varchar(20)
	Surname	Varchar(20)
	Company	Varchar(40)
	Address	Varchar(60)
	Phone	Varchar(15)
	Email	Varchar(100)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that Customers Manager calls to show to the User selected Customer's data	

Function Name	Show Confirmation Window
Return Type	Boolean
Input Arguments	/

Output Arguments	Argument Type	Type
	Answer	Boolean

Error Messages	/
Files Accessed	/
Files Changed	/
Description	Function that User calls to show a confirmation window for deleting selected Customer

Function Name	Delete Customer	
Return Type	String	
Input Arguments	Argument Type	Type
	Customer ID	Integer
Output Arguments	/	
Error Messages	"Could Not Delete Customer"	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to delete selected Customer's information	

2.1.4.3 Edit

Function Name	Edit Customer
Return Type	String

Input Arguments	Argument Type	Type
	First Name	Varchar(20)
	Surname	Varchar(20)
	Company	Varchar(40)
	Address	Varchar(60)
	Phone	Varchar(15)
	Email	Varchar(100)
Output Arguments	/	
Error Messages	/	
Files Accessed	Customers File	
Files Changed	Customers File	
Description	Function that User calls to edit selected Customer's information	

2.1.4.4 Print / Print List

Function Name	Print Customer	
Return Type	Void	
Input Arguments	Argument Type	Type
	Customer ID	Integer
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to print selected Customer's information	

Function Name	Show Printing Window	
Return Type	void	
Input Arguments	**Argument Type**	**Type**
	First Name	Varchar(20)
	Surname	Varchar(20)
	Company	Varchar(40)
	Address	Varchar(60)
	Phone	Varchar(15)
	Email	Varchar(100)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that Customer Manager calls to show printing window to the User	

2.1.4.5 Search

Function Name	Search Customer

Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Username	Varchar(32)
	Email	Varchar(100)
	Password	Varchar (32)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that Admin calls to search a Customer	

2.1.5 Detailed Design for Accounting

2.1.5.1 Create Report

Function Name	Request Create Report	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	DateRange	Date
	ReportType	Varchar(20)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to create a new report	

Function Name	Sort And Filter Data	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	DateRange	Date
	ReportType	Varchar(20)
Output Arguments	/	
Error Messages	/	
Files Accessed	Invoices File, Expenses File	
Files Changed	/	

Description	Function that Reports Management calls to sort and filter data for the report

Function Name	Generate Report	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	ReportType	Varchar(20)
Output Arguments	/	
Error Messages	/	
Files Accessed	Invoices File, Expenses File	
Files Changed	/	
Description	Function that Reports calls to generate the report	

Function Name	Return Generated Report
Return Type	Void
Input Arguments	/
Output Arguments	/
Error Messages	/
Files Accessed	/
Files Changed	/
Description	Function that Reports calls to return the report

Function Name	Display Report
Return Type	Void
Input Arguments	/
Output Arguments	/
Error Messages	/
Files Accessed	/
Files Changed	/
Description	Function that Reports Management calls to display the report to the User

2.1.5.2 View Invoice

Function Name	Request View Invoices
Return Type	Void
Input Arguments	/
Output Arguments	/
Error Messages	/
Files Accessed	/
Files Changed	/
Description	Function that User calls to view invoices list

Function Name	Fetch Invoices List
Return Type	Void
Input Arguments	/
Output Arguments	/
Error Messages	/
Files Accessed	Invoices File
Files Changed	/
Description	Function that Invoice Management calls to fetch all invoices

Function Name	Return Invoices List
Return Type	Void
Input Arguments	/
Output Arguments	/
Error Messages	/
Files Accessed	/
Files Changed	/
Description	Function that Invoices calls to return the fetched invoices list

Function Name	Display Invoices List
Return Type	Void
Input Arguments	/
Output Arguments	/
Error Messages	/
Files Accessed	/
Files Changed	/
Description	Function that Invoices Management calls to display invoices list to the User

2.1.5.3 View Job Cards Details

Function Name	Request View Job Card	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	JobCardID	Int
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to create a report with Job Cards	

Function Name	Fetch Job Card Details	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	JobCardID	Int
Output Arguments	/	
Error Messages	/	
Files Accessed	Job Cards File	
Files Changed	/	
Description	Function that Job Card Management calls to fetch Job Card details	

2.1.5.4 View Parts Details

Function Name	Request View Parts	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	PartID	Int
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to create a report with Parts	

Function Name	Request View Parts	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	JobCardID	Int
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to create a report with Job Cards	

2.1.5.5 Add Extra Expense

Function Name	Add Expense	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Name	Varchar(20)
	Price	Decimal(5,2)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to add a new Expense	

Function Name	Validate Expense	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Name	Varchar(20)
	Price	Decimal(5,2)
Output Arguments	/	
Error Messages	"Incorrect Expense Information"	
Files Accessed	/	
Files Changed	/	
Description	Function that Accounting Manager calls to validate the new Expense information	

Function Name	Check Expense Exists	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Name	Varchar(20)
	Price	Decimal(5,2)
Output Arguments	/	
Error Messages	"Expense Already Exists"	
Files Accessed	Expenses File	
Files Changed	/	
Description	Function that Accounting Manager calls to check if the new Expense doesn't exist	

Function Name	Generate Expense ID	
Return Type	Int	
Input Arguments	**Argument Type**	**Type**
	Expense ID	Integer
Output Arguments	**Argument Type**	**Type**
	Expense ID	Integer
Error Messages	/	
Files Accessed	Expenses File	
Files Changed	/	
Description	Function that Accounting Manager calls to generate new Expense ID	

Function Name	Save Expense Data	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Expense ID	Integer
	Name	Varchar(20)
	Price	Decimal(5,2)
Output Arguments	/	
Error Messages	"Could Not Save Expense"	
Files Accessed	Expenses File	
Files Changed	Expenses File	
Description	Function that Accounting Manager calls to save new Expense data	

2.1.5.6 Delete Extra Expense

Function Name	View Expense	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Customer ID	Integer
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to view selected Customer's data	

Function Name	Get Expense	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Customer ID	Integer
Output Arguments	/	
Error Messages	/	
Files Accessed	Expenses File	
Files Changed	/	
Description	Function that Accounting Manager calls to get selected Customer's data	

Function Name	Return Expense Data	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Name	Varchar(20)
	Price	Decimal(5,2)
Output Arguments	/	
Error Messages	/	
Files Accessed	Expenses File	
Files Changed	/	
Description	Function that Expense calls to return selected Expenses data	

Function Name	Show Expense Data	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Name	Varchar(20)
	Price	Decimal(5,2)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that Accounting Manager calls to show to the User selected Expense data	

Function Name	Show Confirmation Window	
Return Type	Boolean	
Input Arguments	/	
Output Arguments	**Argument Type**	**Type**
	Answer	Boolean
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to show a confirmation window for deleting selected Expense	

Function Name	Delete Expense	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Customer ID	Integer
Output Arguments	/	
Error Messages	"Could Not Delete Expense"	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to delete selected Expense information	

2.1.5.7 Edit Extra Expense

Function Name	Edit Expense	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Name	Varchar(20)
	Price	Decimal(5,2)
Output Arguments	/	
Error Messages	/	
Files Accessed	Expenses File	
Files Changed	Expenses File	
Description	Function that User calls to edit selected Expense information	

2.1.6 Detailed Design for User

2.1.6.1 Add

Function Name	Add User	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Username	Varchar(32)
	Email	Varchar(100)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that Admin calls to add a new User	

Function Name	Validate User	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Username	Varchar(32)
	Email	Varchar(100)
Output Arguments	/	
Error Messages	"Incorrect User's Information"	
Files Accessed	/	
Files Changed	/	

Description	Function that User Management calls to validate the new User's information

Function Name	Check User Exists	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Username	Varchar(32)
	Email	Varchar(100)
Output Arguments	/	
Error Messages	"User Already Exists"	
Files Accessed	Users File	
Files Changed	/	
Description	Function that User Management calls to check if the new User doesn't exist	

Function Name	Generate User ID	
Return Type	Int	
Input Arguments	**Argument Type**	**Type**
	User ID	Integer
Output Arguments	**Argument Type**	**Type**
	User ID	Integer
Error Messages	/	
Files Accessed	Users File	
Files Changed	/	
Description	Function that User Management calls to generate new User's ID	

Function Name	Save User Data	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Username	Varchar(32)
	Email	Varchar(100)
	Password	Varchar (32)
Output Arguments	/	
Error Messages	"Could Not Save User"	
Files Accessed	User File	
Files Changed	Users File	
Description	Function that Users Management calls to save new User's data	

2.1.6.2 Delete

Function Name	View User	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	User ID	Integer
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that Admin calls to view selected User's data	

Function Name	Get User	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	User ID	Integer
Output Arguments	/	
Error Messages	/	
Files Accessed	Users File	
Files Changed	/	
Description	Function that User Management calls to get selected User's data	

Function Name	Return User Data	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Username	Varchar(32)
	Email	Varchar(100)
	Password	Varchar (32)
Output Arguments	/	
Error Messages	/	
Files Accessed	Users File	
Files Changed	/	
Description	Function that Admin calls to return selected User's data	

Function Name	Show User Data	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Username	Varchar(32)
	Email	Varchar(100)
	Password	Varchar (32)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that Users Management calls to show to the Admin selected User's data	

Function Name	Show Confirmation Window	
Return Type	Boolean	
Input Arguments	/	
Output Arguments	**Argument Type**	**Type**
	Answer	Boolean
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that Admin calls to show a confirmation window for deleting selected Part	

Function Name	Delete User	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	User ID	Integer
Output Arguments	/	
Error Messages	"Could Not Delete User"	
Files Accessed	/	
Files Changed	/	
Description	Function that Admin calls to delete selected User's information	

2.1.6.3 Edit

Function Name	Edit User	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Username	Varchar(32)
	Email	Varchar(100)
	Password	Varchar (32)
Output Arguments	/	
Error Messages	/	
Files Accessed	Users File	
Files Changed	Users File	

Description	Function that Admin calls to edit selected User's information

2.1.6.4 Search

Function Name	Search User	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Username	Varchar(32)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to search a Part	

2.1.7 Detailed Design for Invoice

2.1.7.1 Add

Function Name	Add Invoice	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Invoice Number	Integer
	Date Created	Date
	Supplier	Varchar(50)
	Supplier Phone	Varchar(20)
	Supplier Email	Varchar(100)
	VAT	Decimal(10,2)
	Invoice Total Price	Decimal(10,2)
	Part/Description	Varchar(255)
	Pieces Purchased	Decimal(10,2)
	Price Per Piece	Decimal(10,2)
	Selling Price	Decimal(10,2)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to add a new Invoice	

Function Name	Validate Invoice	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Invoice Number	Integer
	Date Created	Date
	Supplier	Varchar(50)
	Supplier Phone	Varchar(20)
	Supplier Email	Varchar(100)
	VAT	Decimal(10,2)
	Invoice Total Price	Decimal(10,2)
	Part/Description	Varchar(255)
	Pieces Purchased	Decimal(10,2)
	Price Per Piece	Decimal(10,2)
	Selling Price	Decimal(10,2)
Output Arguments	/	
Error Messages	"Incorrect Invoice's Information"	
Files Accessed	/	
Files Changed	/	
Description	Function that Invoice Management calls to validate the new Invoice's information	

Function Name	Check Invoice Exists	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Invoice Number	Integer
Output Arguments	/	

Error Messages	"Invoice Already Exists"
Files Accessed	Invoice File
Files Changed	/
Description	Function that Invoice Management calls to check if the new Invoice doesn't exist

Function Name	Generate Invoice ID	
Return Type	Int	
Input Arguments	**Argument Type**	**Type**
	Invoice ID	Integer
Output Arguments	**Argument Type**	**Type**
	Invoice ID	Integer
Error Messages	/	
Files Accessed	Invoice File	
Files Changed	/	
Description	Function that Invoice Management calls to generate new Invoice's ID	

Function Name	Save Invoice Data	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Invoice Number	Integer
	Date Created	Date
	Supplier	Varchar(50)
	Supplier Phone	Varchar(20)
	Supplier Email	Varchar(100)

	VAT	Decimal(10,2)
	Invoice Total Price	Decimal(10,2)
	Part/Description	Varchar(255)
	Pieces Purchased	Decimal(10,2)
	Price Per Piece	Decimal(10,2)
	Selling Price	Decimal(10,2)
Output Arguments	/	
Error Messages	"Could Not Save Invoice"	
Files Accessed	Invoices File	
Files Changed	Invoices File	
Description	Function that Invoices Management calls to save new Invoice's data	

2.1.7.2 Delete

Function Name	View Invoice	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Invoice ID	Integer
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to view selected Invoice's data	

Function Name	Get Invoice	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Invoice ID	Integer
Output Arguments	/	
Error Messages	/	
Files Accessed	Invoice File	
Files Changed	/	
Description	Function that Invoice Management calls to get selected Invoice's data	

Function Name	Return Invoice Data	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Invoice Number	Integer
	Date Created	Date
	Supplier	Varchar(50)
	Supplier Phone	Varchar(20)
	Supplier Email	Varchar(100)
	VAT	Decimal(10,2)
	Invoice Total Price	Decimal(10,2)
	Part/Description	Varchar(255)
	Pieces Purchased	Decimal(10,2)
	Price Per Piece	Decimal(10,2)
	Selling Price	Decimal(10,2)
Output Arguments	/	

Error Messages	/
Files Accessed	Invoice File
Files Changed	/
Description	Function that Invoices calls to return selected Invoice's data

Function Name	Show Invoice Data	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Invoice Number	Integer
	Date Created	Date
	Supplier	Varchar(50)
	Supplier Phone	Varchar(20)
	Supplier Email	Varchar(100)
	VAT	Decimal(10,2)
	Invoice Total Price	Decimal(10,2)
	Part/Description	Varchar(255)
	Pieces Purchased	Decimal(10,2)
	Price Per Piece	Decimal(10,2)
	Selling Price	Decimal(10,2)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that Invoices Management calls to show to the User selected Invoice's data	

Function Name	Show Confirmation Window	
Return Type	Boolean	
Input Arguments	/	
Output Arguments	**Argument Type**	**Type**
	Answer	Boolean
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to show a confirmation window for deleting selected Invoice	

Function Name	Delete Invoice	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Invoice ID	Integer
Output Arguments	/	
Error Messages	"Could Not Delete Invoice"	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to delete selected Invoice's information	

2.1.7.3 Edit

Function Name	Edit Invoice	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Invoice Number	Integer
	Date Created	Date
	Supplier	Varchar(50)
	Supplier Phone	Varchar(20)
	Supplier Email	Varchar(100)
	VAT	Decimal(10,2)
	Invoice Total Price	Decimal(10,2)
	Part/Description	Varchar(255)
	Pieces Purchased	Decimal(10,2)
	Price Per Piece	Decimal(10,2)
	Selling Price	Decimal(10,2)
Output Arguments	/	
Error Messages	/	
Files Accessed	Invoice File	
Files Changed	Invoice File	
Description	Function that User calls to edit selected Invoice's information	

2.1.7.4 Print / Print List

Function Name	Print Invoice	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Invoice ID	Integer
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to print selected Invoice's information	

2.1.7.5 Search

Function Name	Show Printing Window	
Return Type	void	
Input Arguments	**Argument Type**	**Type**
	Invoice Number	Integer
	Date Created	Date
	Supplier	Varchar(50)
	Supplier Phone	Varchar(20)
	Supplier Email	Varchar(100)
	VAT	Decimal(10,2)
	Invoice Total Price	Decimal(10,2)
	Part/Description	Varchar(255)

	Pieces Purchased	Decimal(10,2)
	Price Per Piece	Decimal(10,2)
	Selling Price	Decimal(10,2)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that Invoice Management calls to show printing window to the User	

2.1.8 Detailed Design for Cars

2.1.8.1 Add

Function Name	Add Car	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Brand	varchar (50)
	Model	varchar (50)
	License Number	varchar (20)
	VIN	varchar (20)
	Manufacture Date	date
	Fuel Type	varchar (20)
	Kw/Horsepower	int
	Engine Type	varchar (30)
	Km/Miles	int
	Color	varchar (30)
	Comments	String
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to add a new Car	

Function Name	Validate Car	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Brand	varchar (50)
	Model	varchar (50)
	License Number	varchar (20)
	VIN	varchar (20)
	Manufacture Date	date
	Fuel Type	varchar (20)
	Kw/Horsepower	int
	Engine Type	varchar (30)
	Km/Miles	int
	Color	varchar (30)
	Comments	String
Output Arguments	/	
Error Messages	"Incorrect Car's Information"	
Files Accessed	/	
Files Changed	/	
Description	Function that Car Manager calls to validate the new Car's information	

Function Name	Check Car Exists	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	License Number	varchar (20)
	VIN	varchar (20)

Output Arguments	/
Error Messages	"Car Already Exists"
Files Accessed	Car File
Files Changed	/
Description	Function that Car Manager calls to check if the new Car doesn't exist

Function Name	Save Car Data	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Brand	varchar (50)
	Model	varchar (50)
	License Number	varchar (20)
	VIN	varchar (20)
	Manufacture Date	date
	Fuel Type	varchar (20)
	Kw/Horsepower	int
	Engine Type	varchar (30)
	Km/Miles	int
	Color	varchar (30)
	Comments	String
Output Arguments	/	
Error Messages	"Could Not Save Car "	
Files Accessed	Car File	
Files Changed	Car File	

Description	Function that Car Manager calls to save new Car 's data

2.1.8.2 Delete

Function Name	View Car	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	License Number	varchar (20)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to view selected Car 's data	

Function Name	Get Car	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	License Number	varchar (20)
Output Arguments	/	
Error Messages	/	
Files Accessed	Car File	
Files Changed	/	

Description	Function that Car Manager calls to get selected Car 's data

Function Name	Return Car Data	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Brand	varchar (50)
	Model	varchar (50)
	License Number	varchar (20)
	VIN	varchar (20)
	Manufacture Date	date
	Fuel Type	varchar (20)
	Kw/Horsepower	int
	Engine Type	varchar (30)
	Km/Miles	int
	Color	varchar (30)
	Comments	String
Output Arguments	/	
Error Messages	/	
Files Accessed	Car File	
Files Changed	/	
Description	Function that Car calls to return selected Car's data	

Function Name	Show Car Data	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Brand	varchar (50)
	Model	varchar (50)
	License Number	varchar (20)
	VIN	varchar (20)
	Manufacture Date	date
	Fuel Type	varchar (20)
	Kw/Horsepower	int
	Engine Type	varchar (30)
	Km/Miles	int
	Color	varchar (30)
	Comments	String
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that Car Manager calls to show to the User selected Car's data	

Function Name	Show Confirmation Window	
Return Type	Boolean	
Input Arguments	/	
Output Arguments	**Argument Type**	**Type**
	Answer	Boolean

Error Messages	/
Files Accessed	/
Files Changed	/
Description	Function that User calls to show a confirmation window for deleting selected Car

Function Name	Delete Car	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	License Number	varchar (20)
Output Arguments	/	
Error Messages	"Could Not Delete Car"	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to delete selected Car's information	

2.1.8.3 Edit

Function Name	Edit Car	
Return Type	String	
Input Arguments	**Argument Type**	**Type**
	Brand	varchar (50)
	Model	varchar (50)
	License Number	varchar (20)
	VIN	varchar (20)
	Manufacture Date	date
	Fuel Type	varchar (20)
	Kw/Horsepower	int
	Engine Type	varchar (30)
	Km/Miles	int
	Color	varchar (30)
	Comments	String
Output Arguments	/	
Error Messages	/	
Files Accessed	Car File	
Files Changed	Car File	
Description	Function that User calls to edit selected Car's information	

2.1.8.4 Print

Function Name	Print Car	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	License Number	varchar (20)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to print selected Car's information	

Function Name	Show Printing Window	
Return Type	void	
Input Arguments	**Argument Type**	**Type**
	Brand	varchar (50)
	Model	varchar (50)
	License Number	varchar (20)
	VIN	varchar (20)
	Manufacture Date	date
	Fuel Type	varchar (20)
	Kw/Horsepower	int
	Engine Type	varchar (30)
	Km/Miles	int
	Color	varchar (30)
	Comments	String

Output Arguments	/
Error Messages	/
Files Accessed	/
Files Changed	/
Description	Function that Car Manager calls to show printing window to the User

2.1.8.5 Search

Function Name	Search Car	
Return Type	Void	
Input Arguments	**Argument Type**	**Type**
	Brand	varchar (50)
	Model	varchar (50)
	License Number	varchar (20)
	VIN	varchar (20)
Output Arguments	/	
Error Messages	/	
Files Accessed	/	
Files Changed	/	
Description	Function that User calls to search a Car	

2.2 Interaction Diagrams

2.2.1 Interaction Diagrams for User Access

2.2.1.1 Sequence Diagram for Login
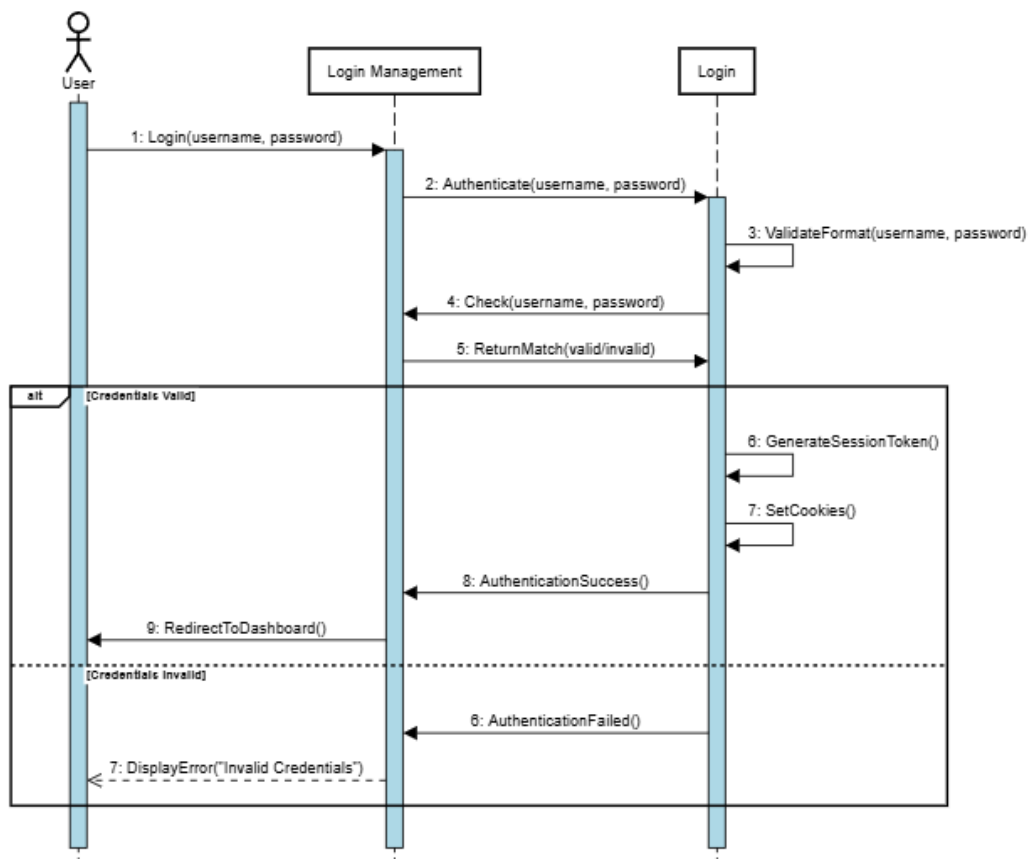
2.2.1.2 Collaboration Diagram for Login
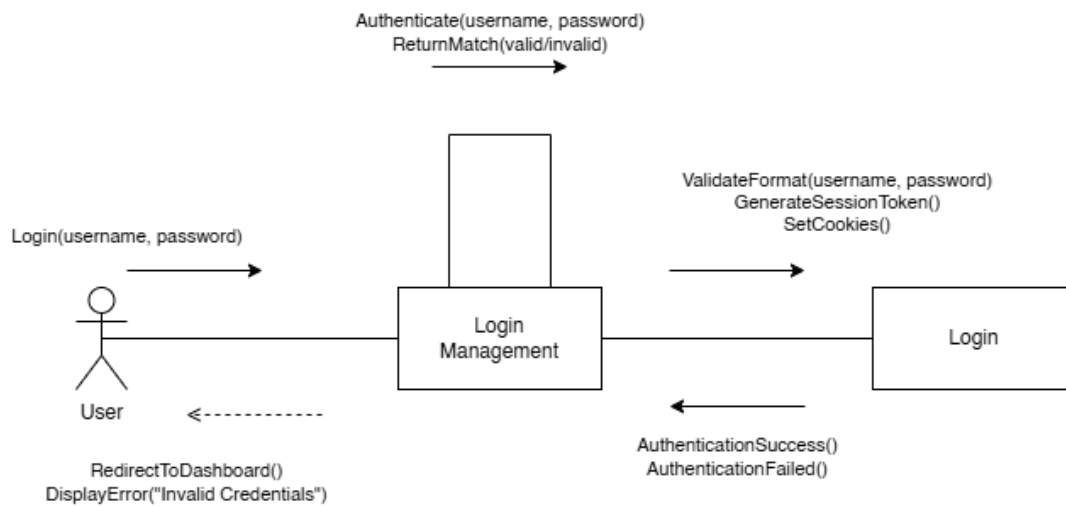
2.2.1.3 Sequence Diagram for Forgot Password
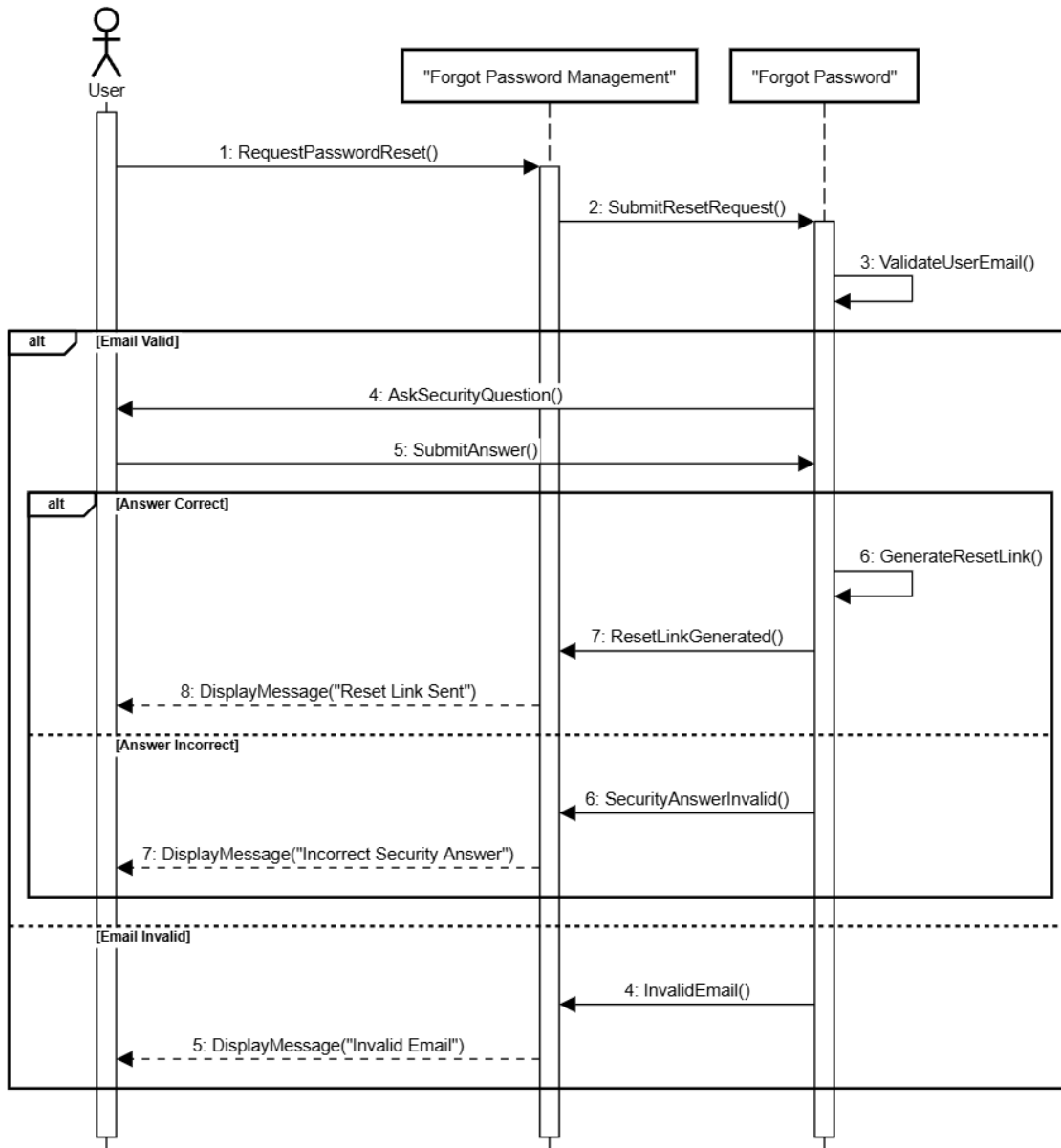
2.2.1.4 Collaboration Diagram for Forgot Password
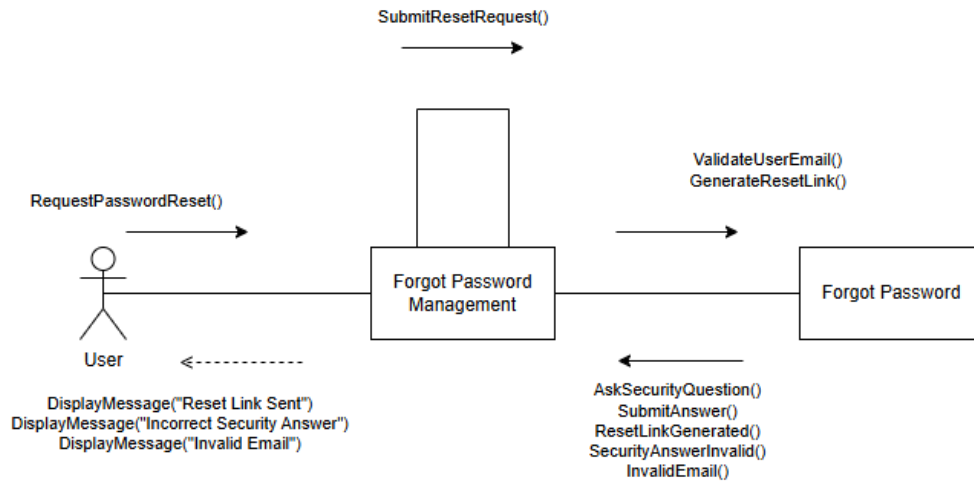
2.2.1.5 Sequence Diagram for Log Out
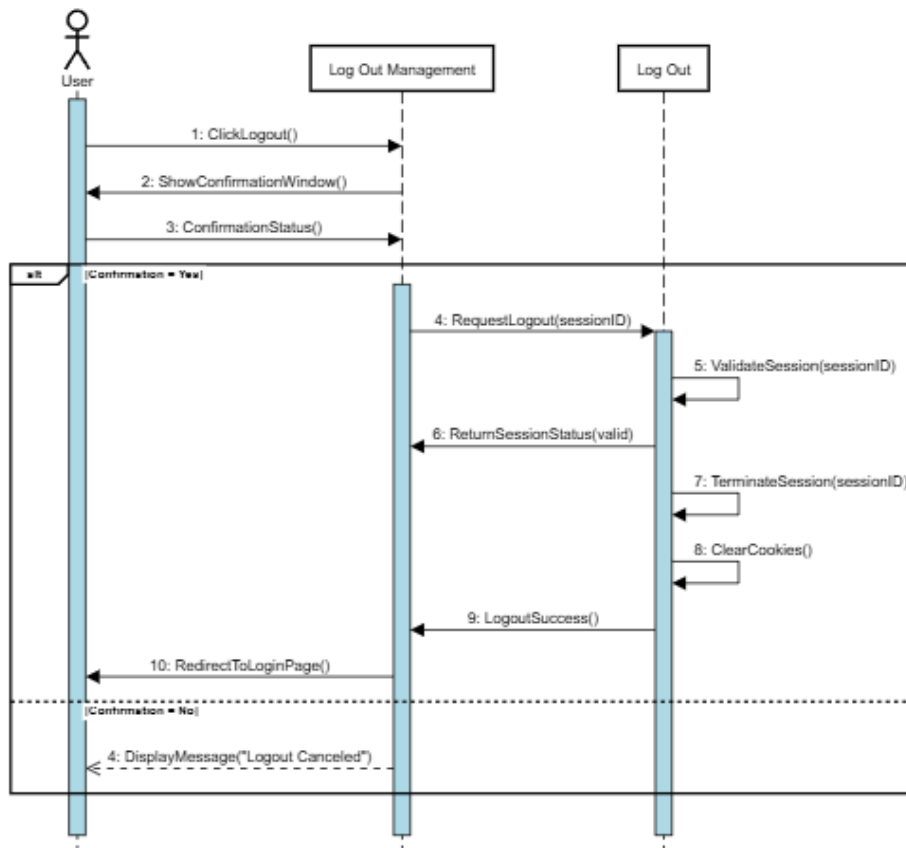
2.2.1.6 Collaboration Diagram for Log Out
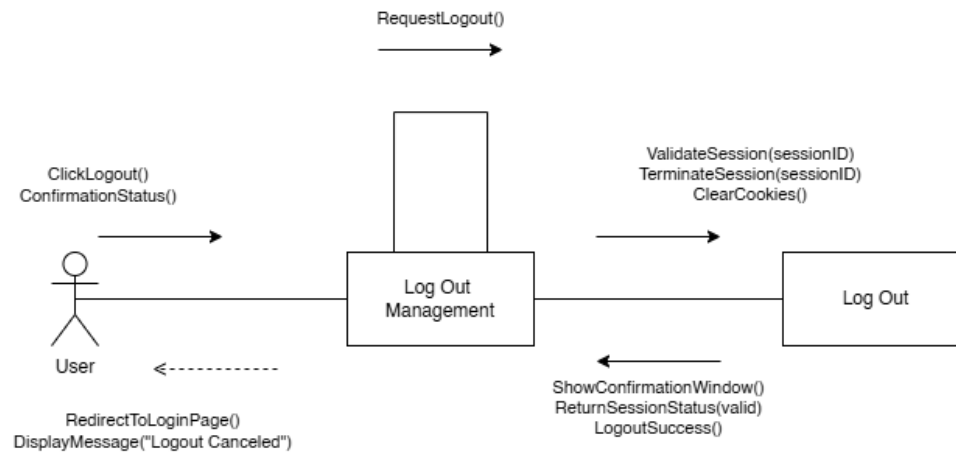
2.2.2 Interaction Diagrams for Jobs Management

2.2.2.1 Sequence Diagram for Add Job Card
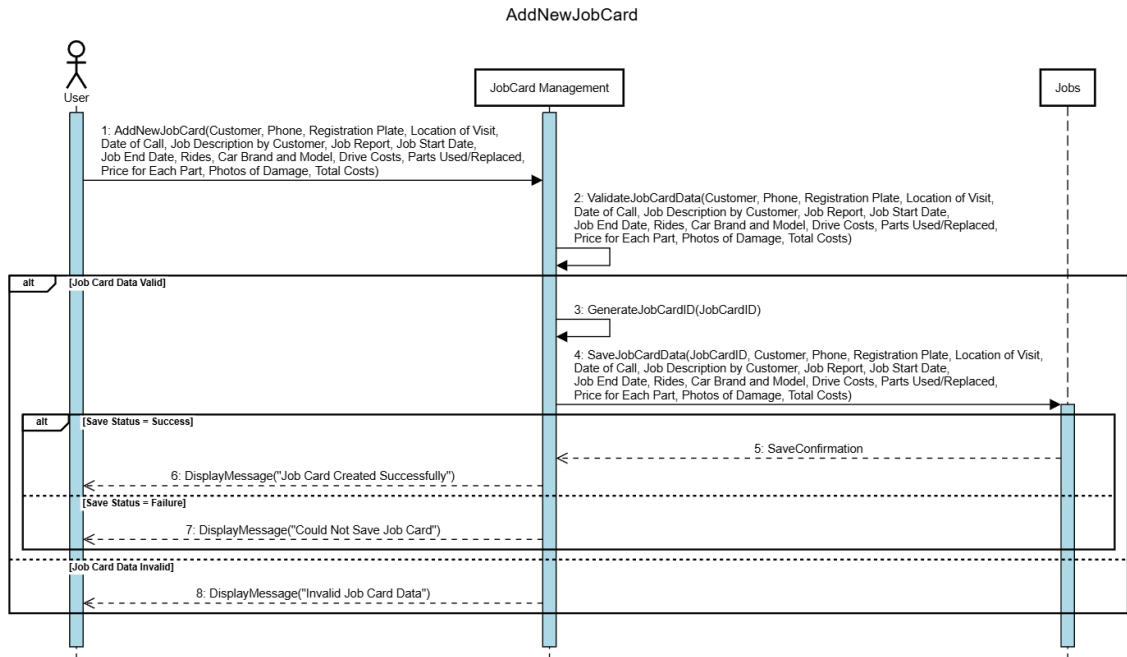
2.2.2.2 Collaboration Diagram for Add Job Card
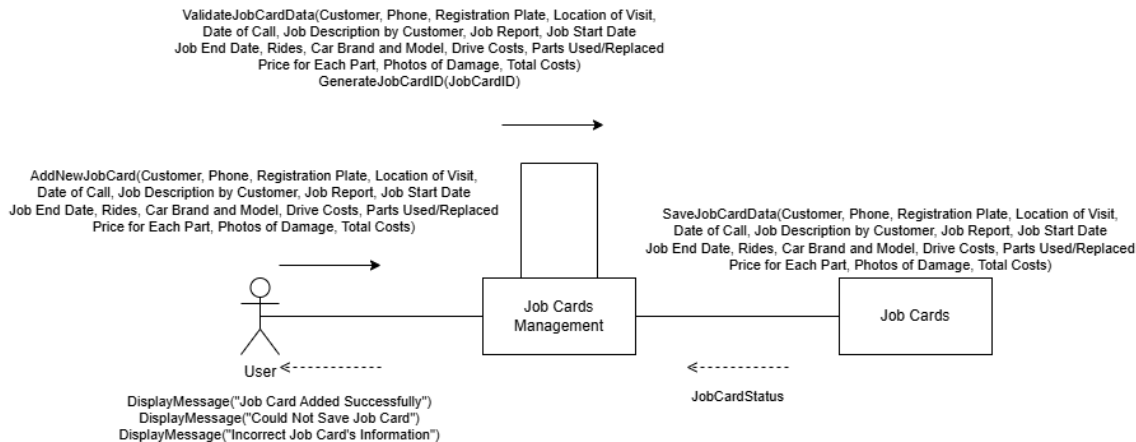
2.2.2.3 Sequence Diagram for Edit Job Card
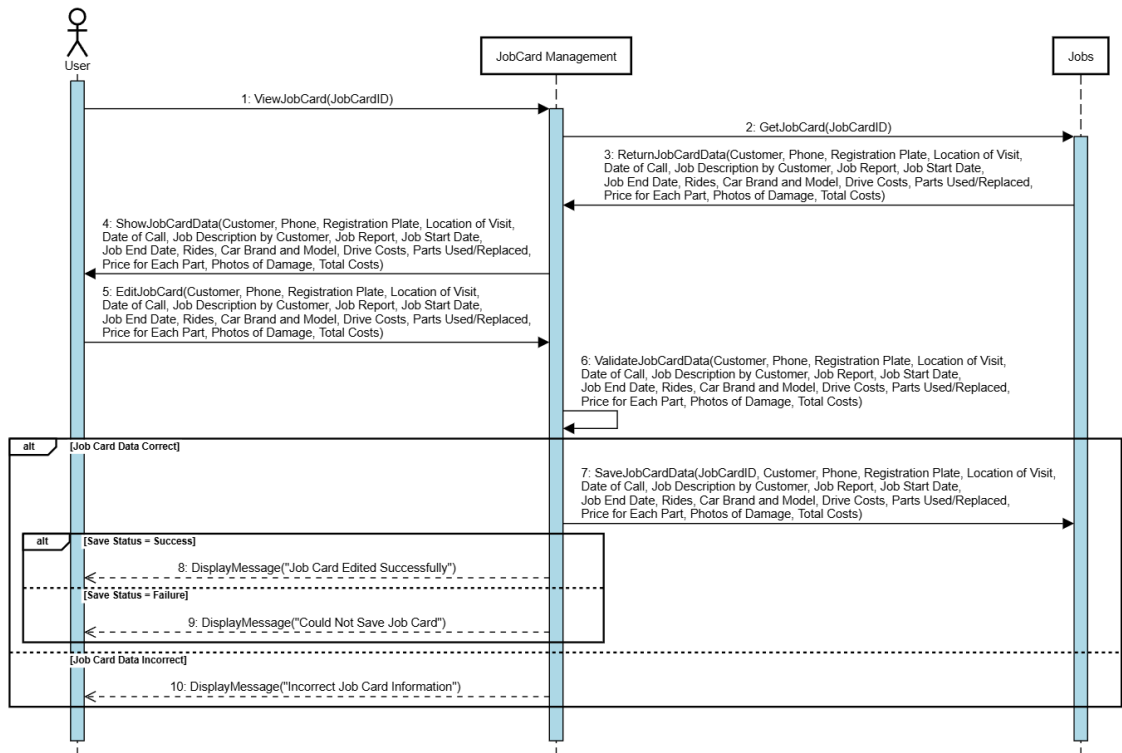
2.2.2.4 Collaboration Diagram for Edit Job Card
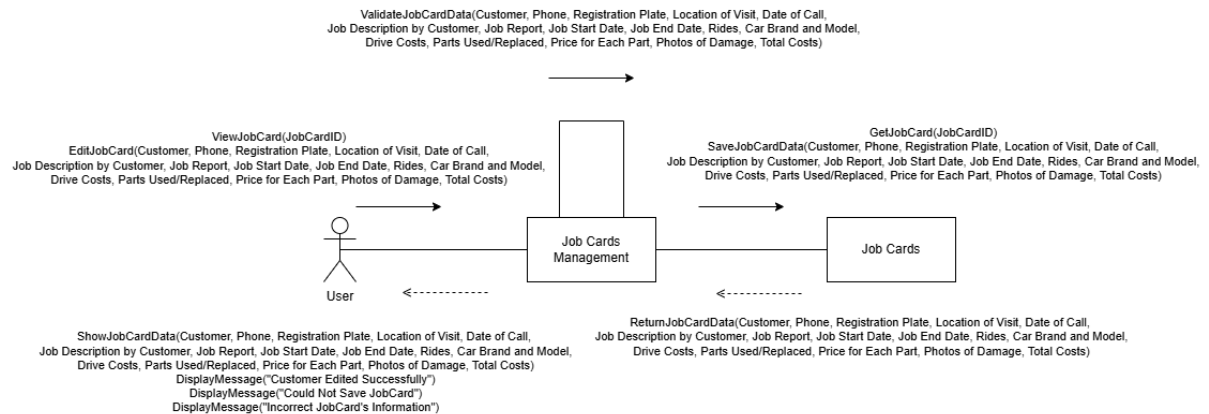
2.2.2.5 Sequence Diagram for Delete Job Card
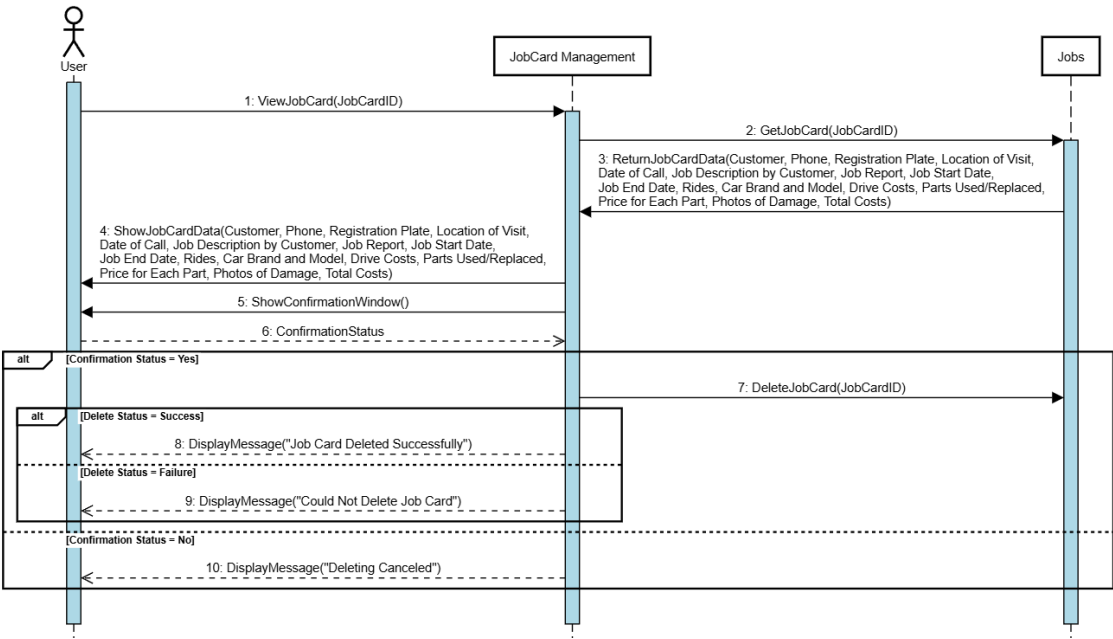
2.2.2.6 Collaboration Diagram for Delete Job Card
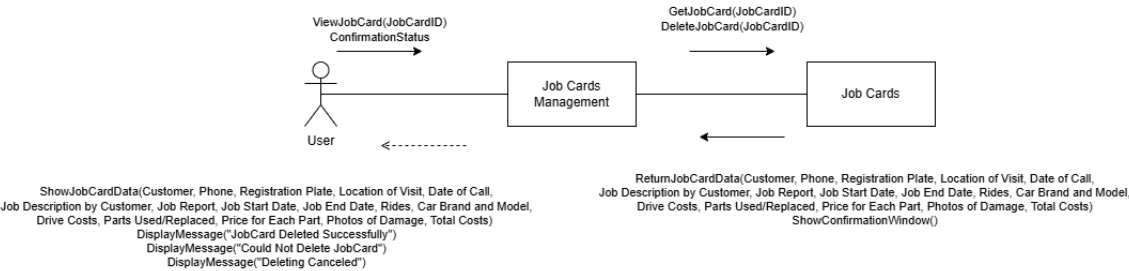
2.2.2.7 Sequence Diagram for Print Job Card List
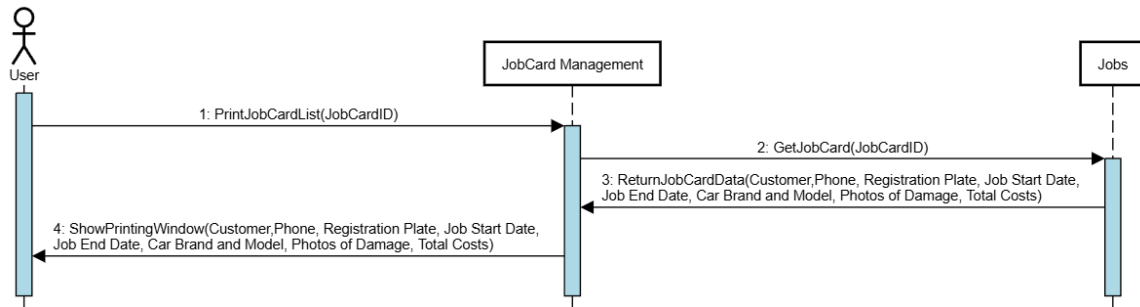
2.2.2.8 Collaboration Diagram for Print Job Card List
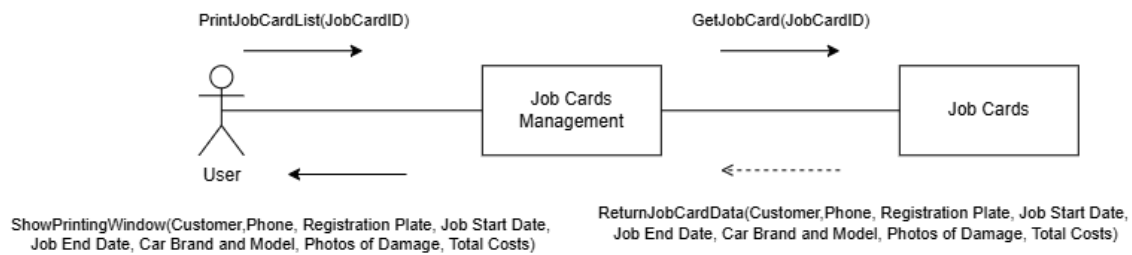
2.2.2.9 Sequence Diagram for Print Job Card
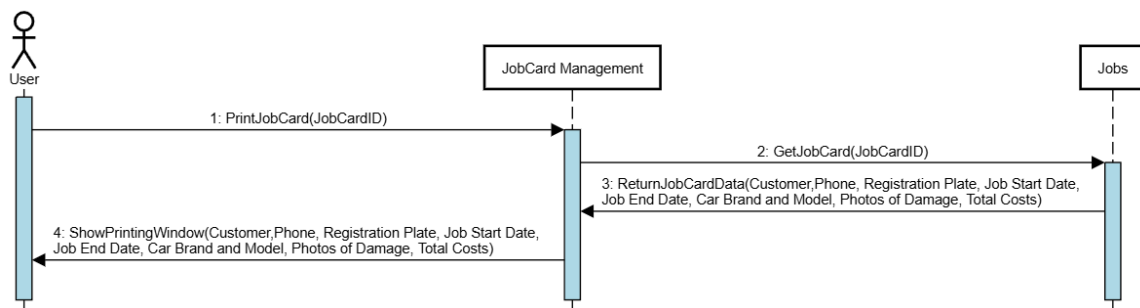
2.2.2.10 Collaboration Diagram for Print Job Card
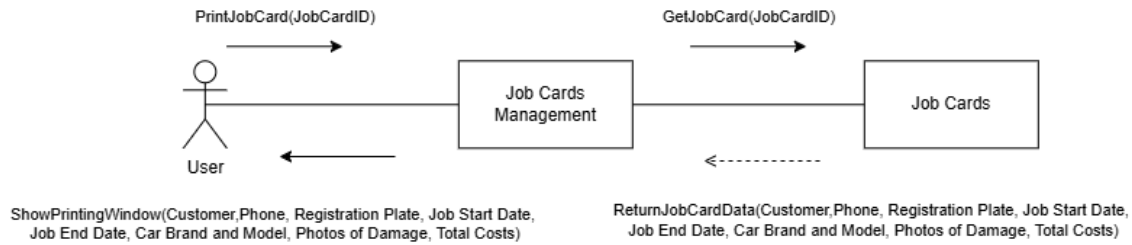
2.2.2.11 Sequence Diagram for Search Job Card
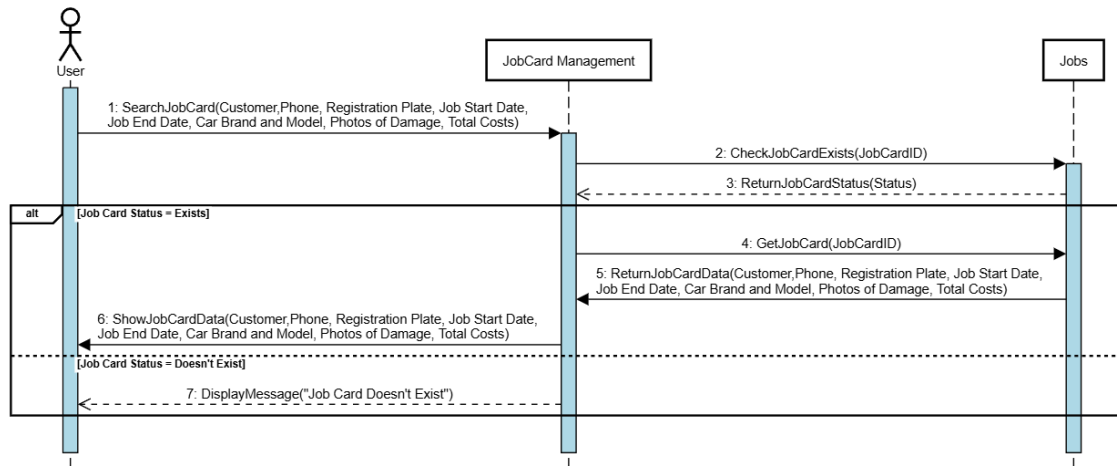
2.2.2.12 Collaboration Diagram for Search Job Card
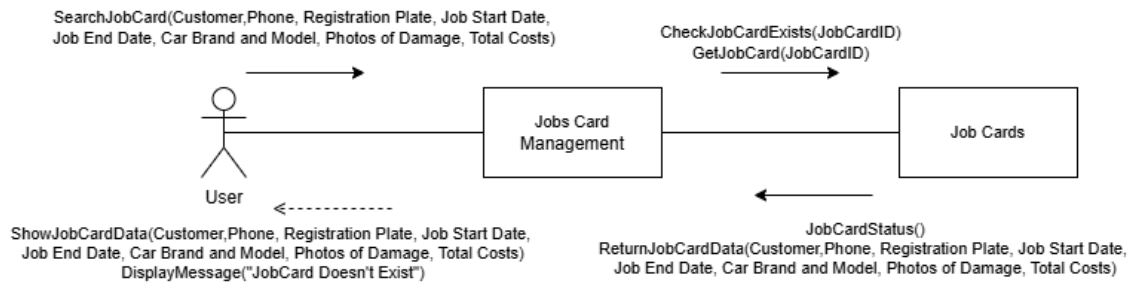
2.2.3 Interaction Diagrams for Part Management

2.2.3.1 Sequence Diagram for Add Part
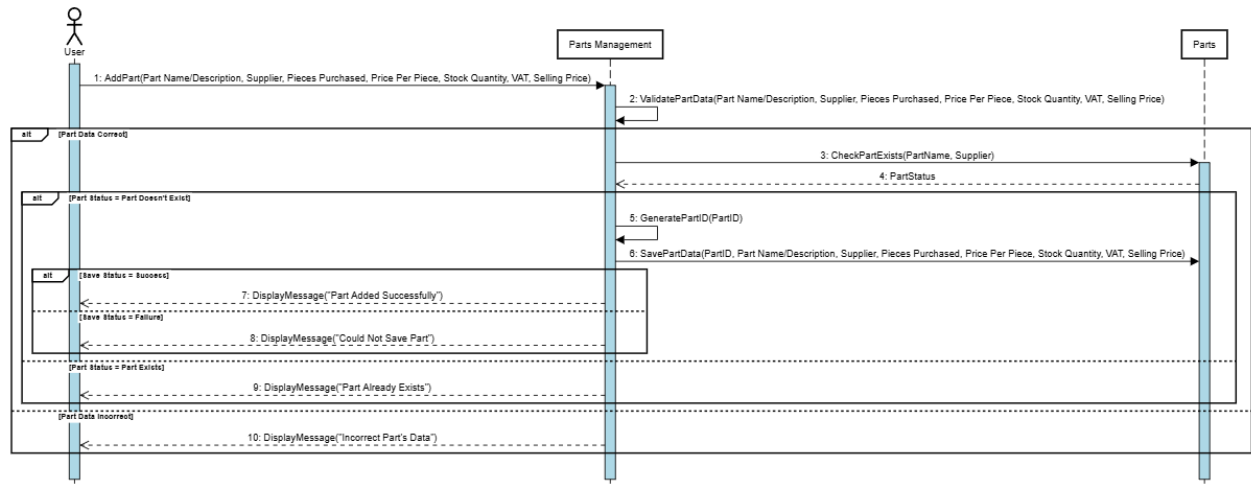
2.2.3.2 Collaboration Diagram for Add Part
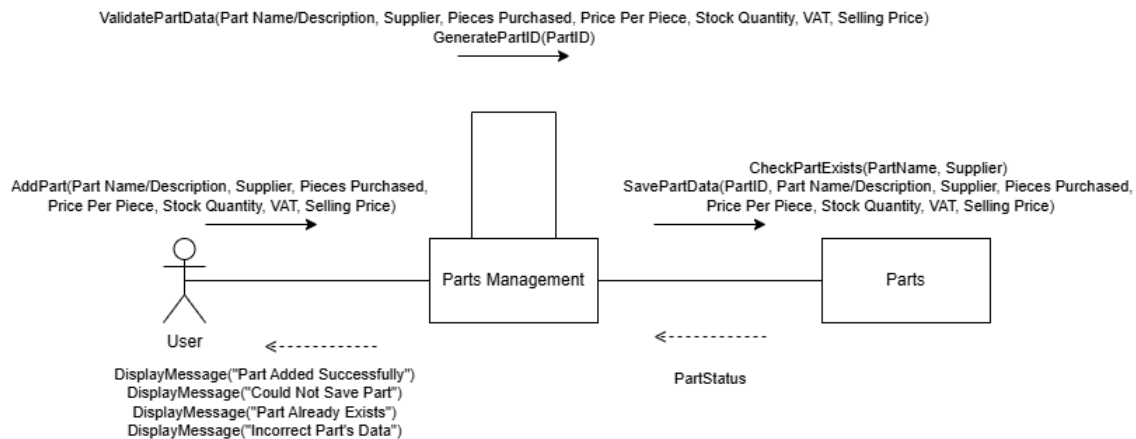
2.2.3.3 Sequence Diagram for Edit Part
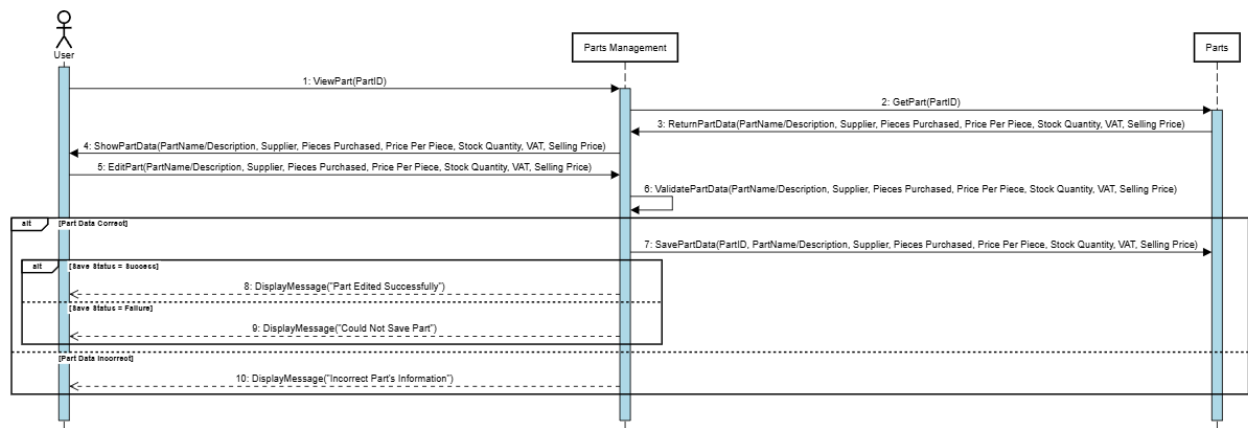
2.2.3.4 Collaboration Diagram for Edit Part
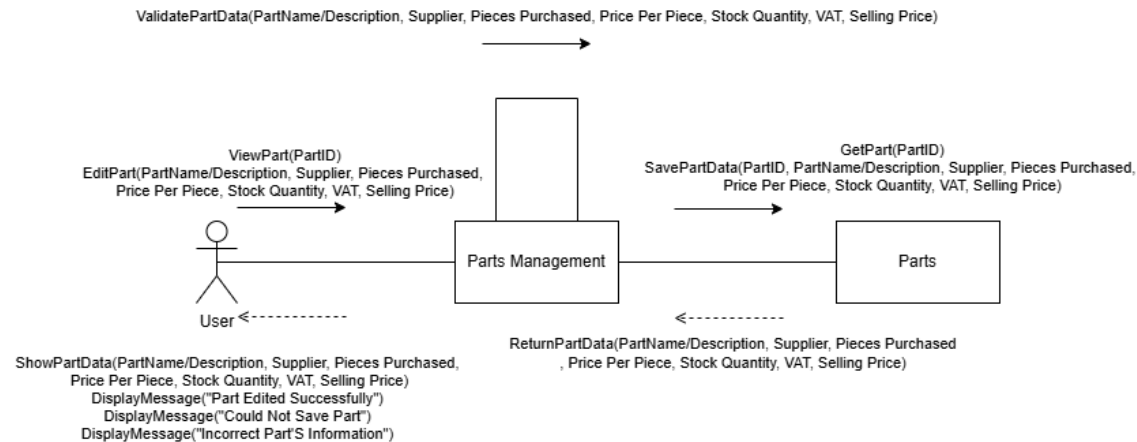
2.2.3.5 Sequence Diagram for Delete Part
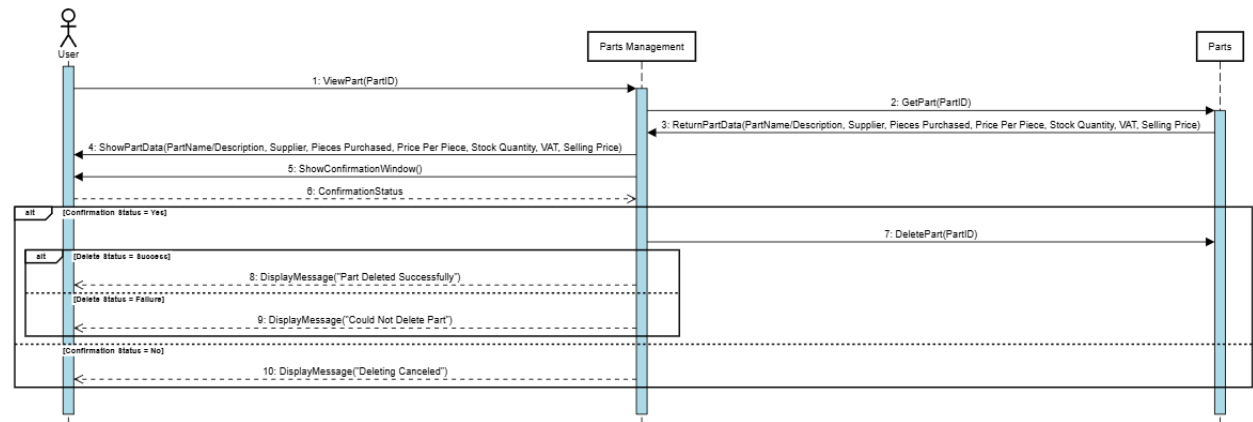
2.2.3.6 Collaboration Diagram for Delete Part
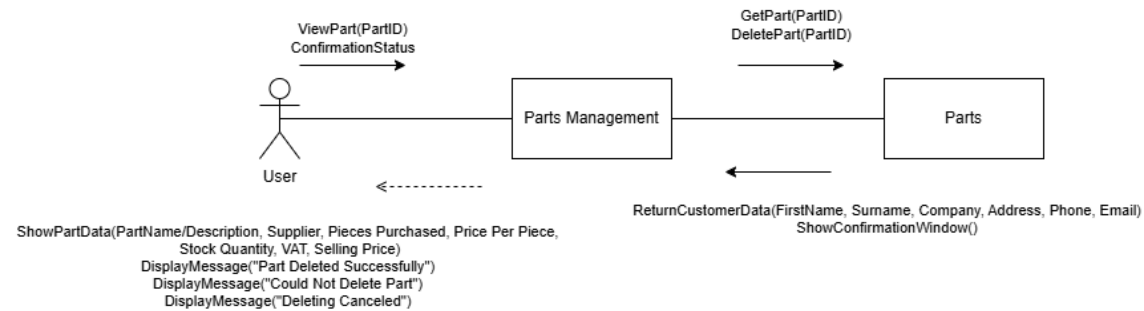
2.2.3.7 Sequence Diagram for Print Part List

2.2.3.8 Collaboration Diagram for Print Part List

PrintPartList(PartID)

GetPart(PartID)

Parts Management

Parts

User

ShowPrintingWindow(PartName/Description, Supplier, Price Per Piece, Stock Quantity)

ReturnPartData(PartName/Description, Supplier, Price Per Piece, Stock Quantity)
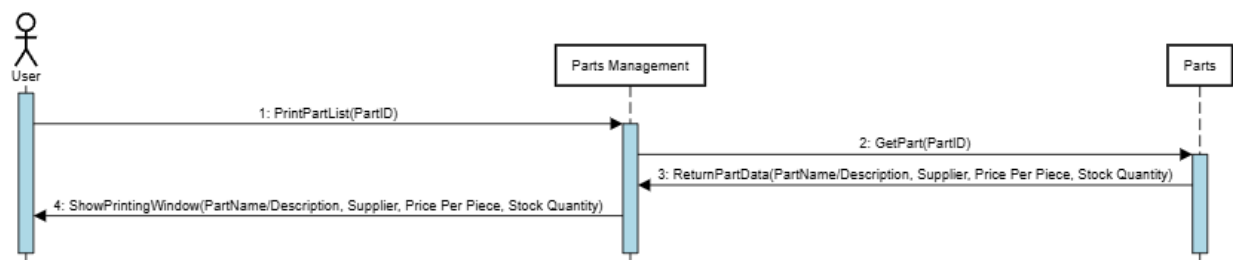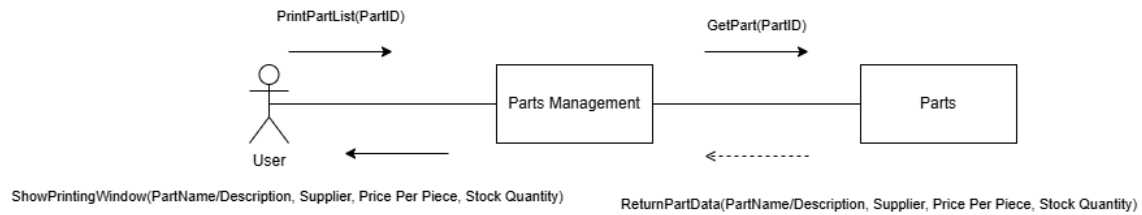
2.2.3.9 Sequence Diagram for Print Part
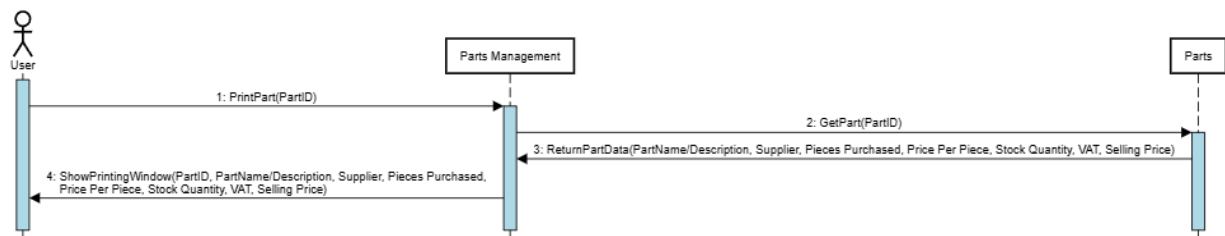
2.2.3.10 Collaboration Diagram for Print Part
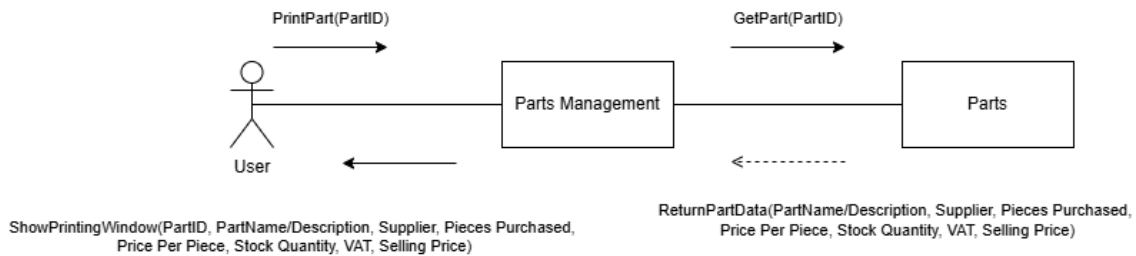
2.2.3.11 Sequence Diagram for Search Part
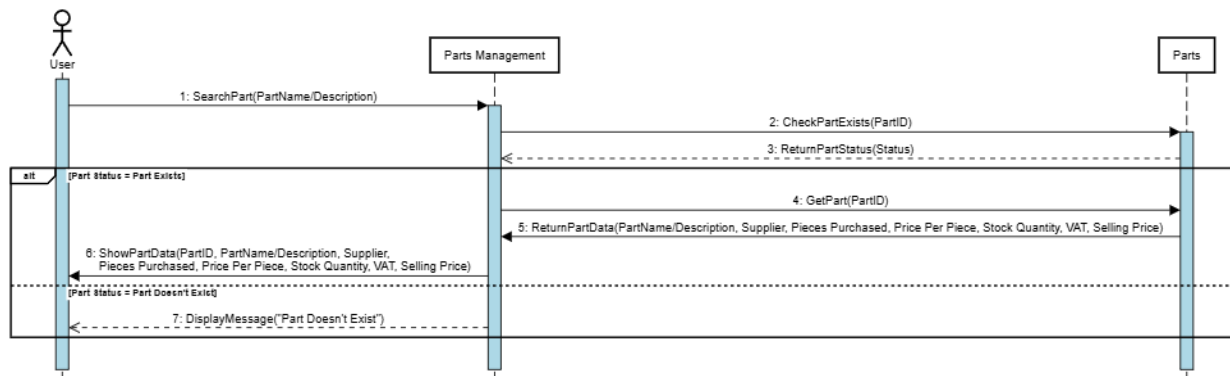
2.2.3.12 Collaboration Diagram for Search Part
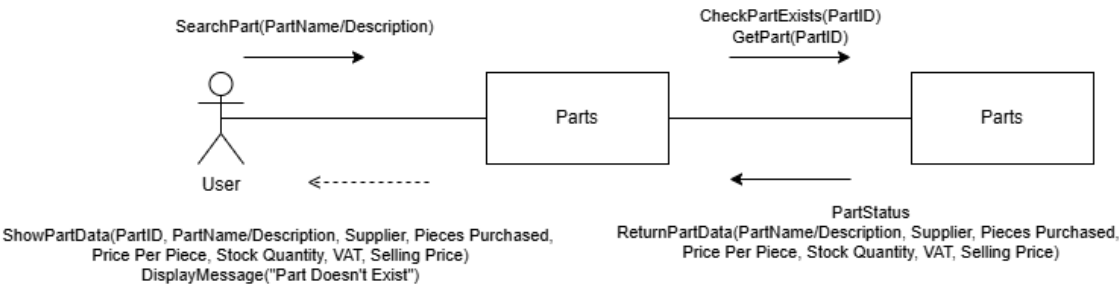
2.2.4 Interaction Diagrams for Customer Management

2.2.4.1 Sequence Diagram for Add Customer
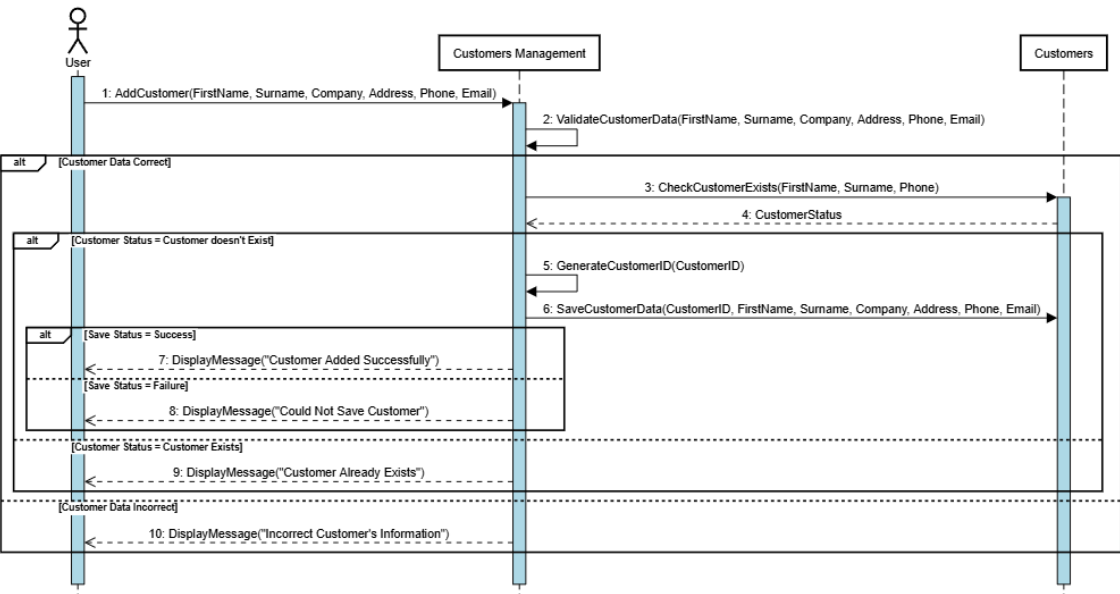
2.2.4.2 Collaboration Diagram for Add Customer
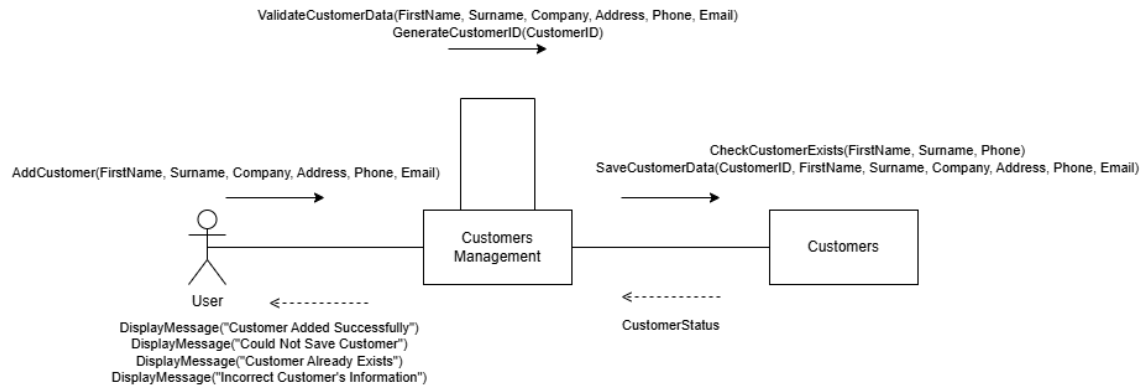
2.2.4.3 Sequence Diagram for Edit Customer
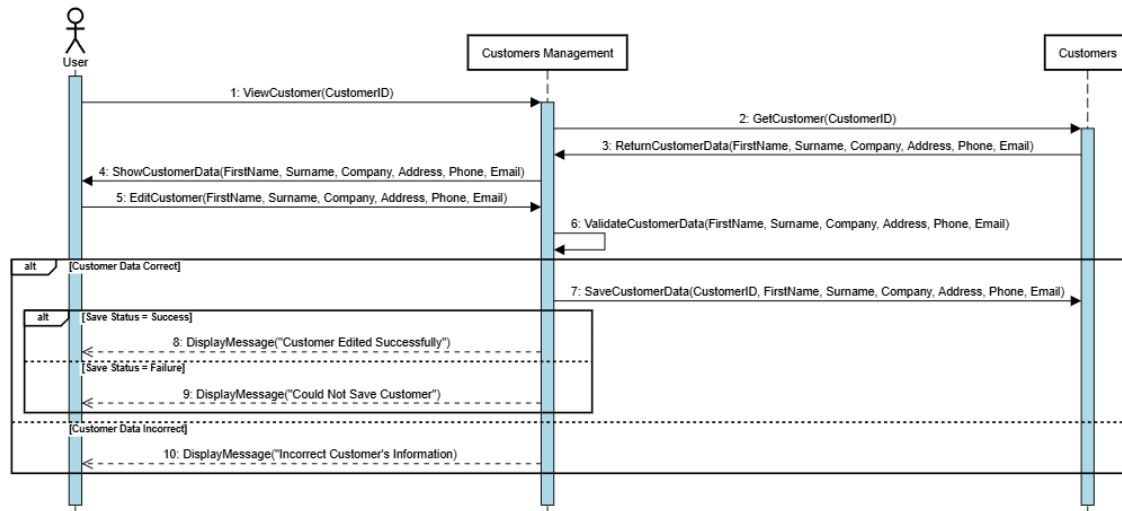
2.2.4.4 Collaboration Diagram for Edit Customer
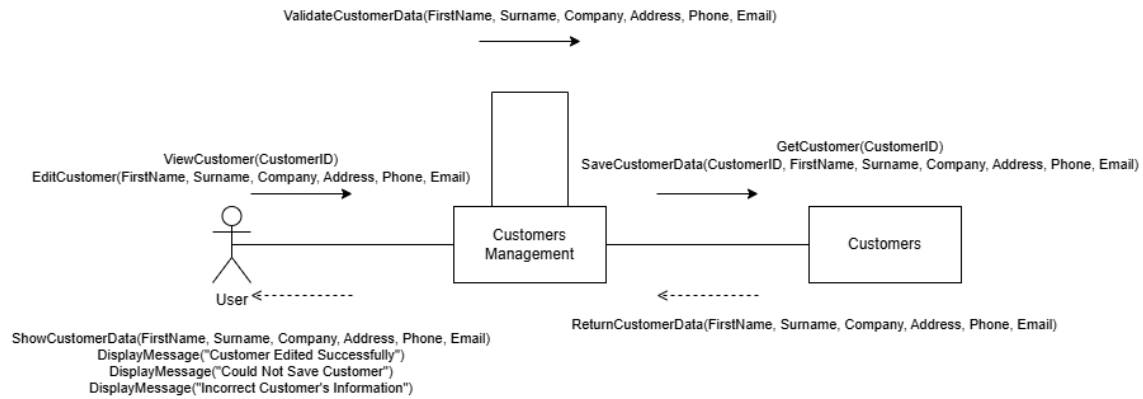
2.2.4.5 Sequence Diagram for Delete Customer
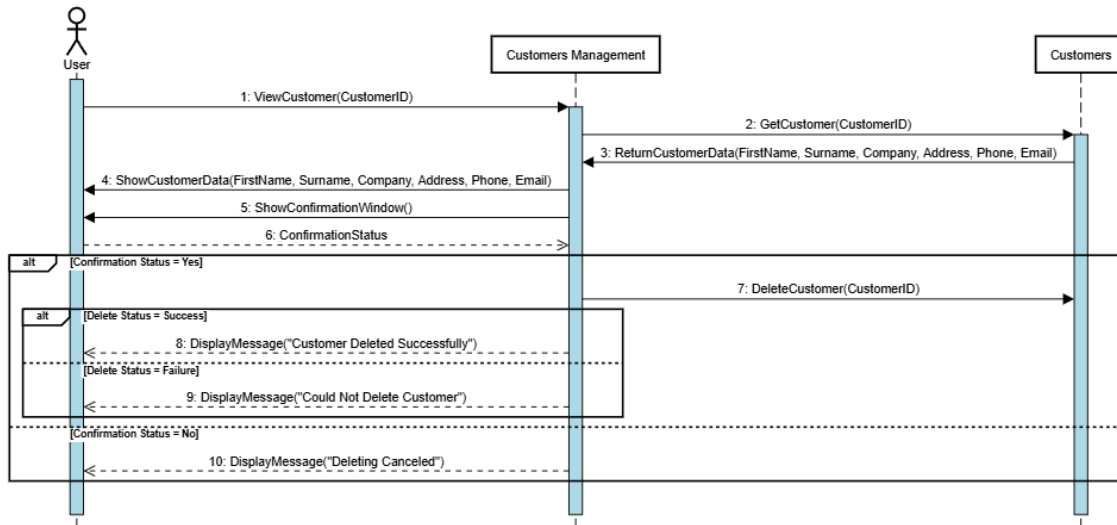
2.2.4.6 Collaboration Diagram for Delete Customer
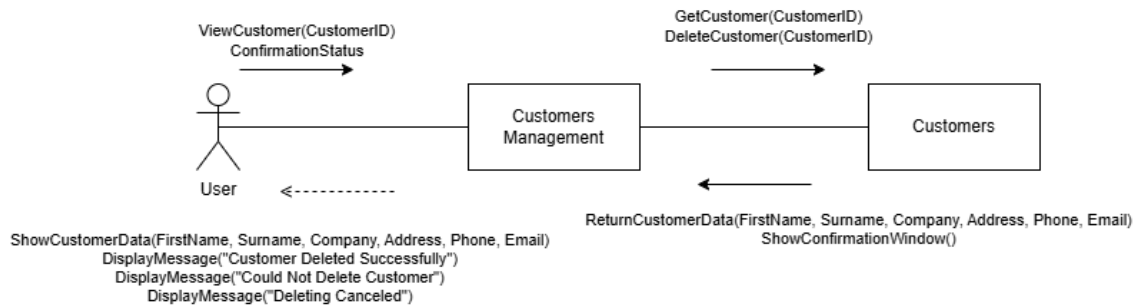
2.2.4.7 Sequence Diagram for Print Customer List
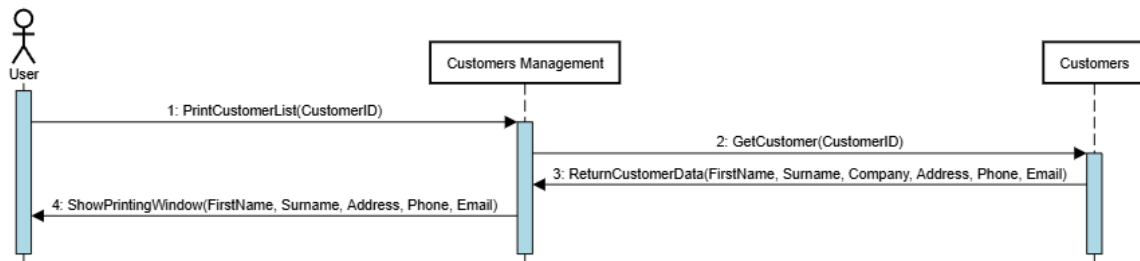
2.2.4.8 Collaboration Diagram for Print Customer List
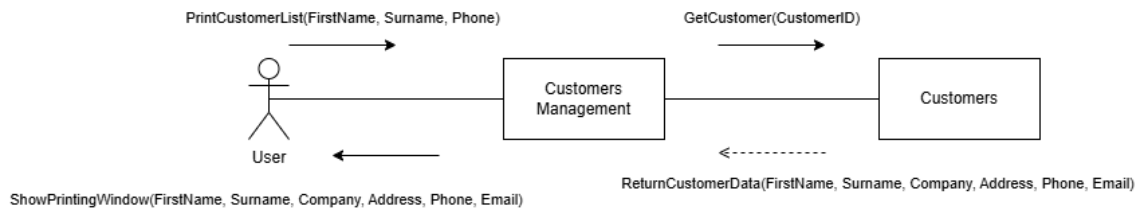
2.2.4.9 Sequence Diagram for Print Customer
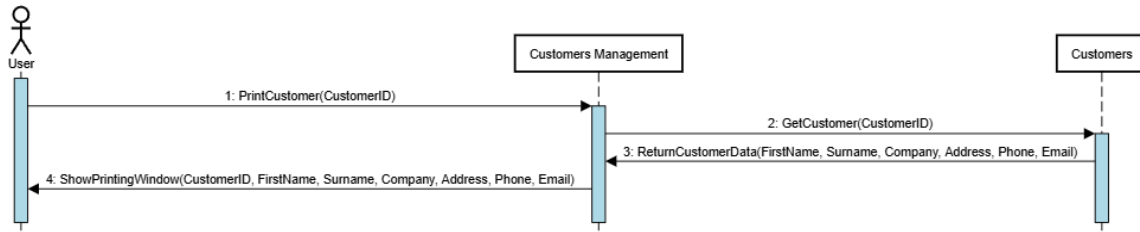
2.2.4.10 Collaboration Diagram for Print Customer
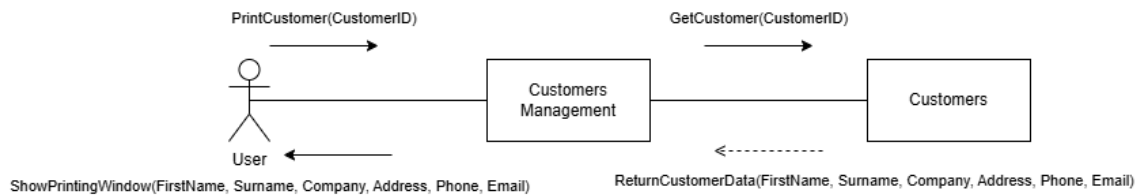
2.2.4.11 Sequence Diagram for Search Customer
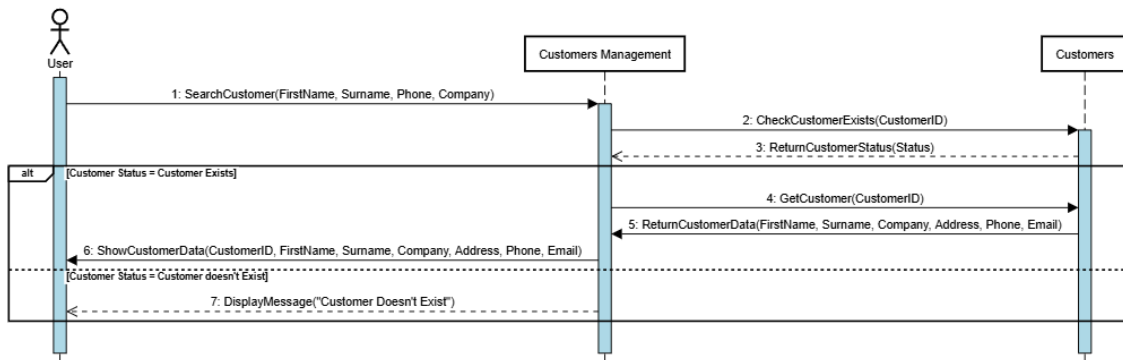
2.2.4.12 Collaboration Diagram for Search Customer
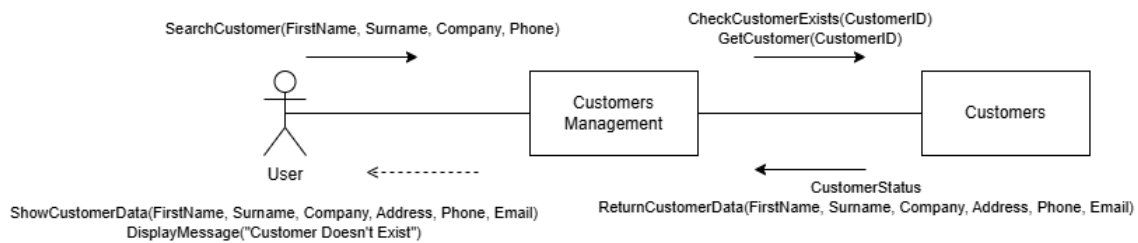
2.2.5 Interaction Diagrams for Accounting Management

2.2.5.1 Sequence Diagram for Create Report
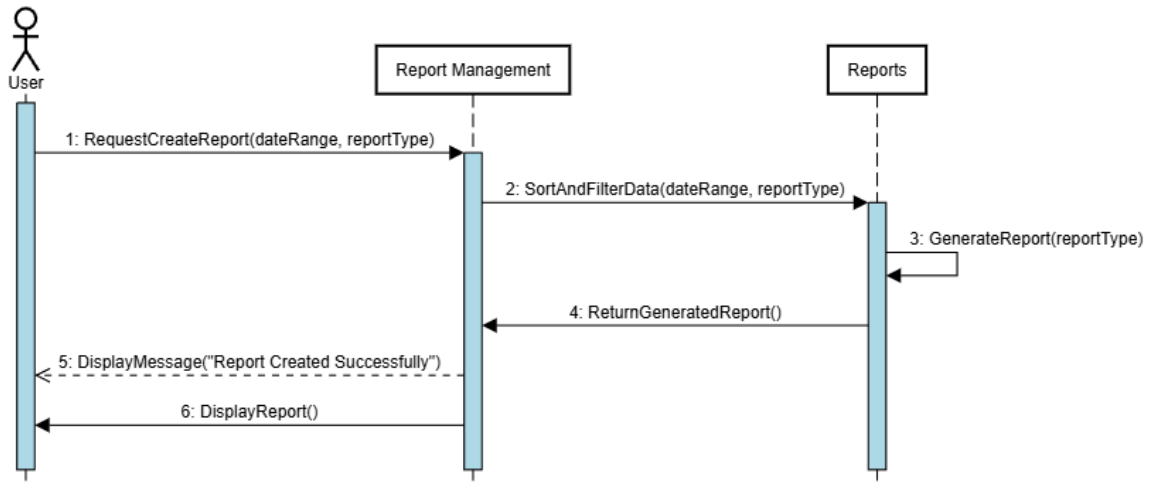
2.2.5.2 Collaboration Diagram for Create Report
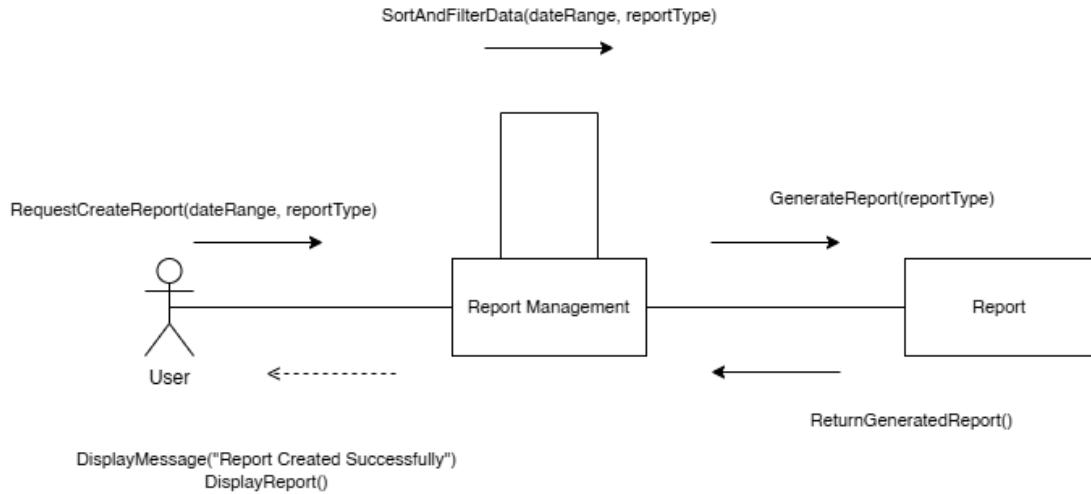
2.2.5.3 Sequence Diagram for View Invoices
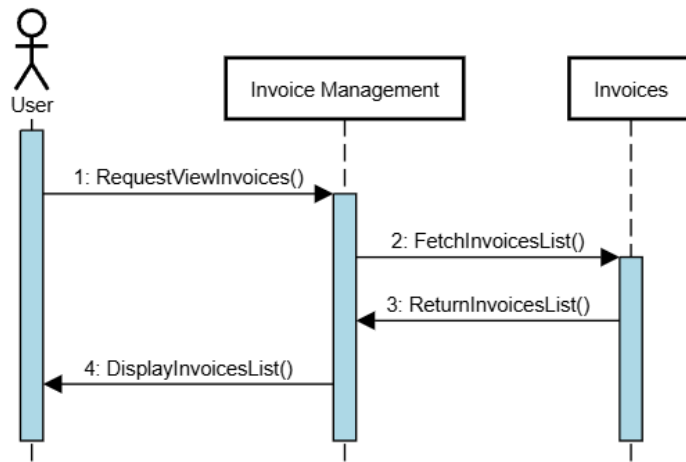
2.2.5.4 Collaboration Diagram for View Invoices
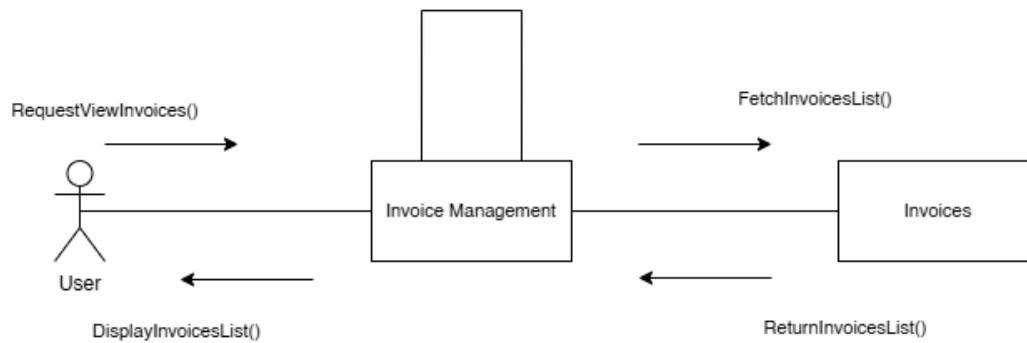
2.2.5.5 Sequence Diagram for View Job Cards Details
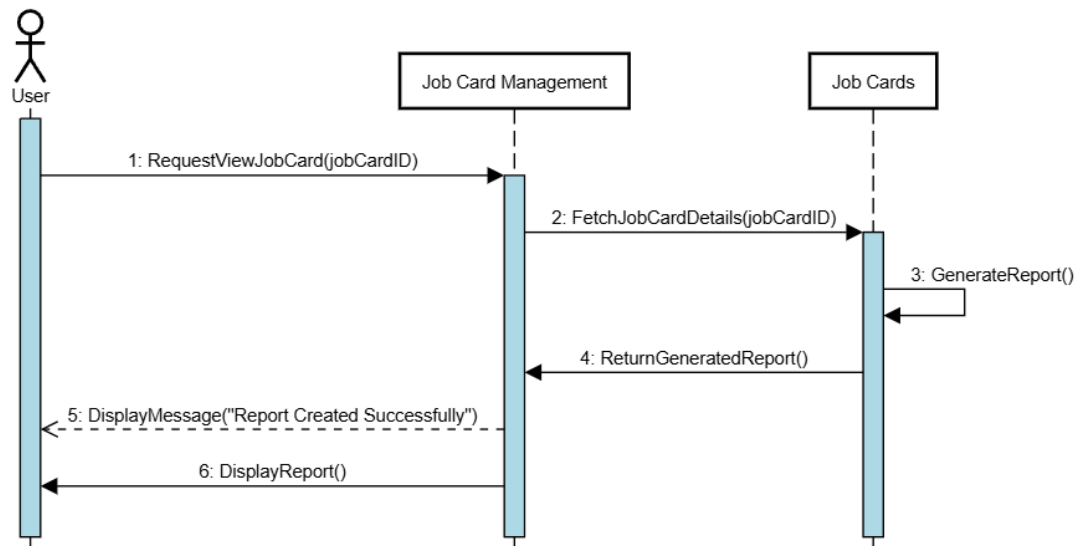
2.2.5.6 Collaboration Diagram for View Job Cards Details
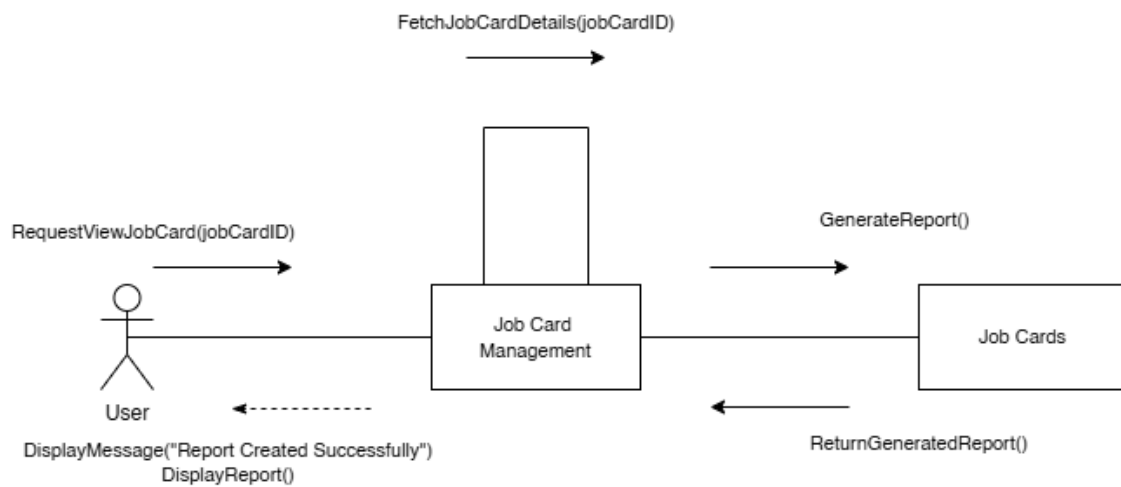
2.2.5.7 Sequence Diagram for View Parts Details
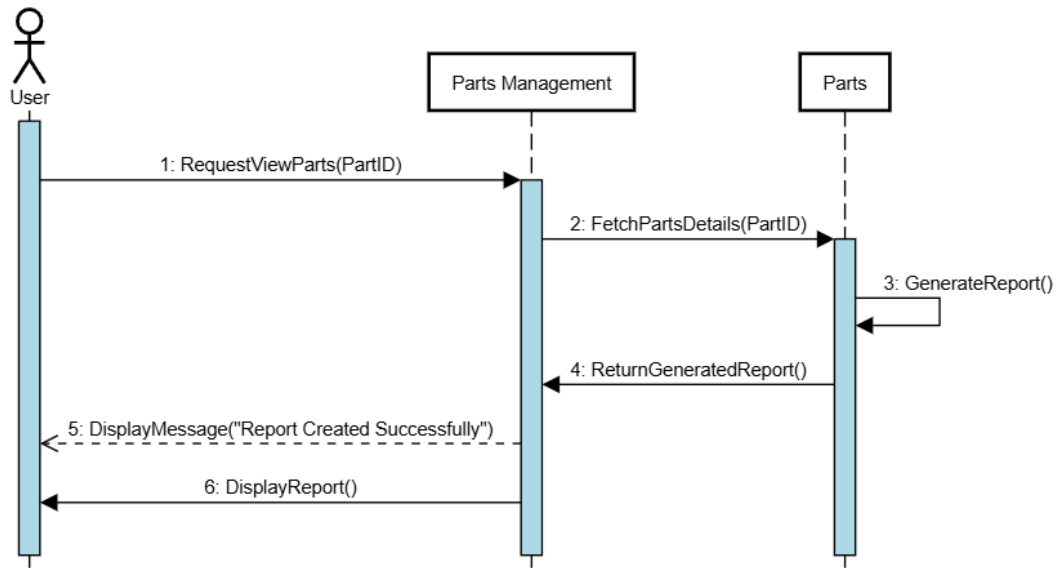
2.2.5.8 Collaboration Diagram for View Parts Details
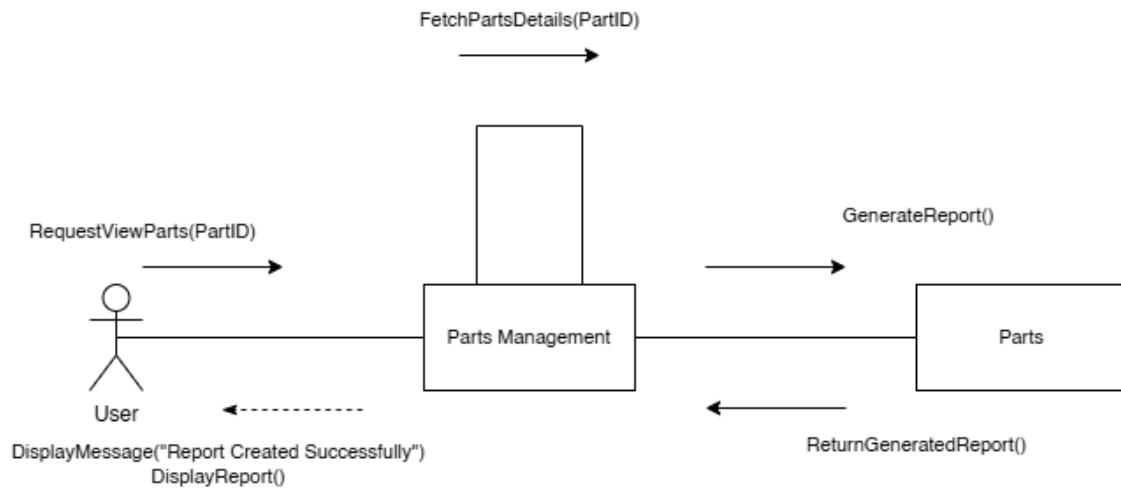
2.2.5.9 Sequence Diagram for Add Extra Expenses
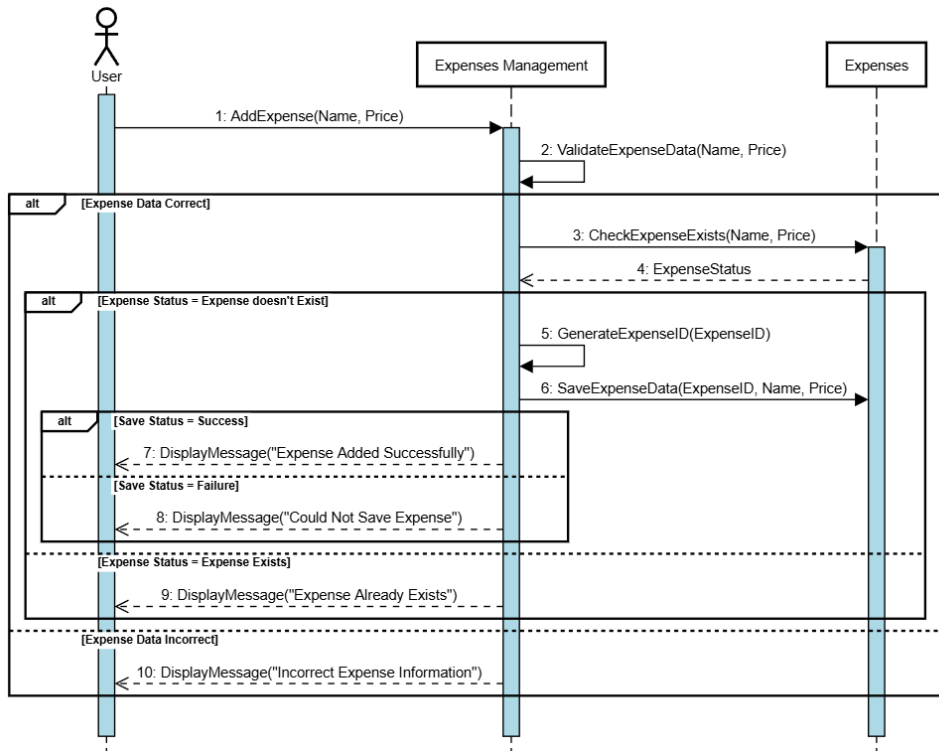
2.2.5.10 Collaboration Diagram for Add Extra Expenses
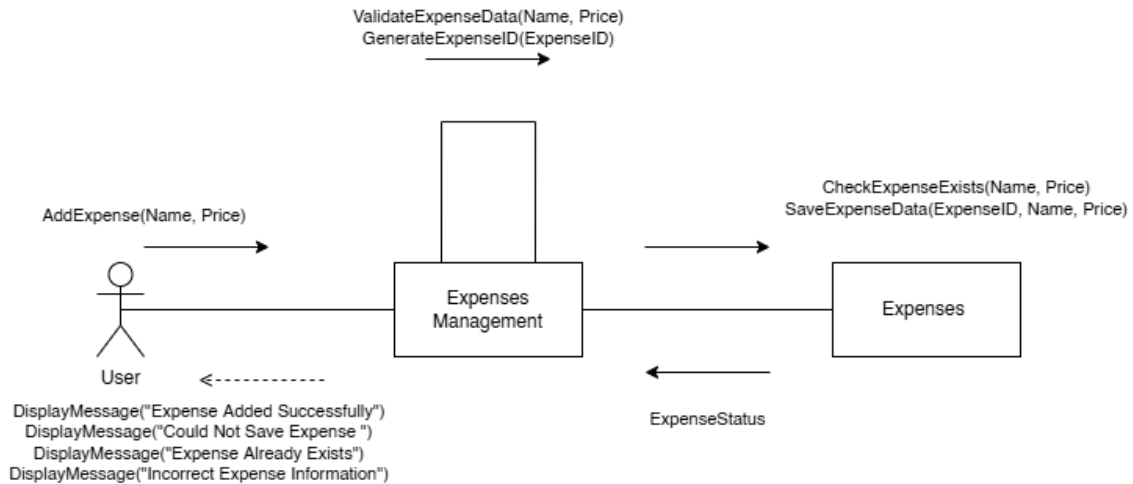
2.2.5.11 Sequence Diagram for Edit Extra Expenses
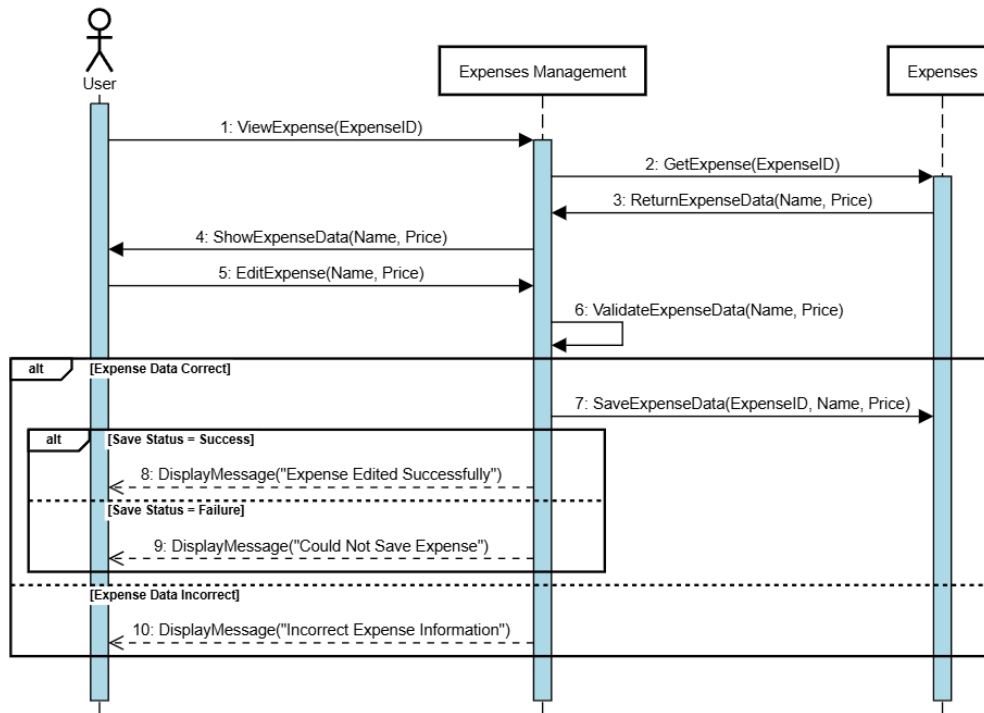
2.2.5.12 Collaboration Diagram for Edit Extra Expenses
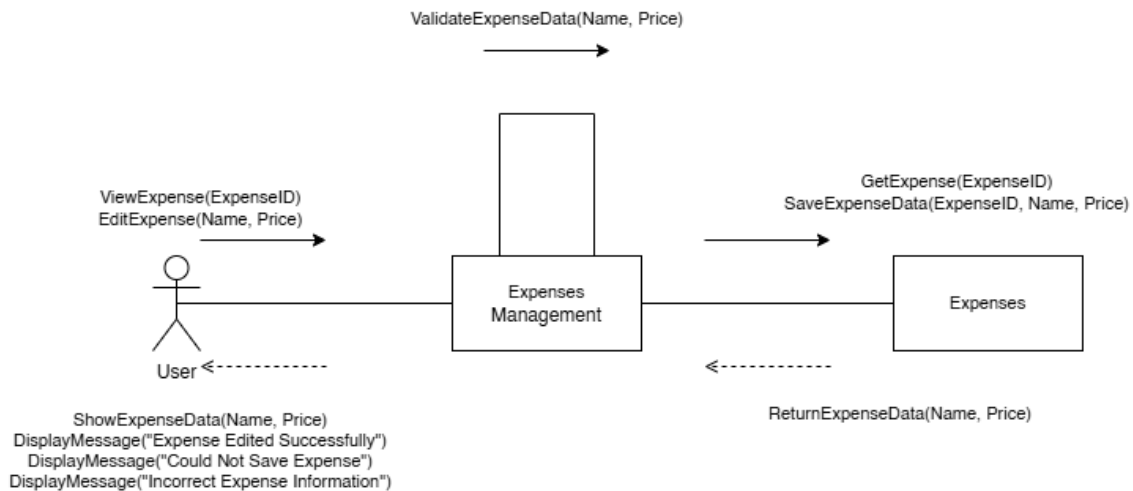
2.2.5.13 Sequence Diagram for Delete Extra Expenses
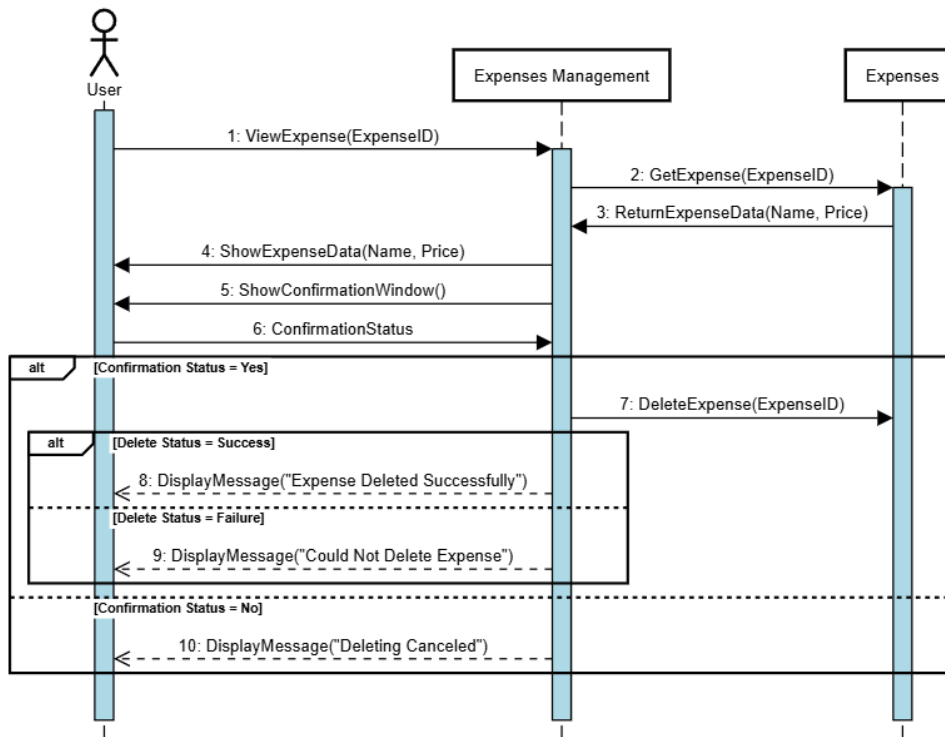
2.2.5.14 Collaboration Diagram for Delete Extra Expenses
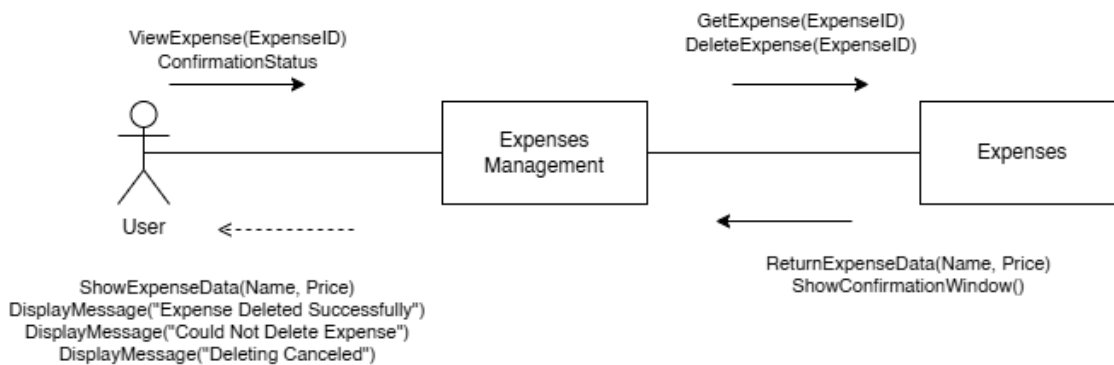
## 2.2.6 Interaction Diagrams for User Management

### 2.2.6.1 Sequence Diagram for Add User
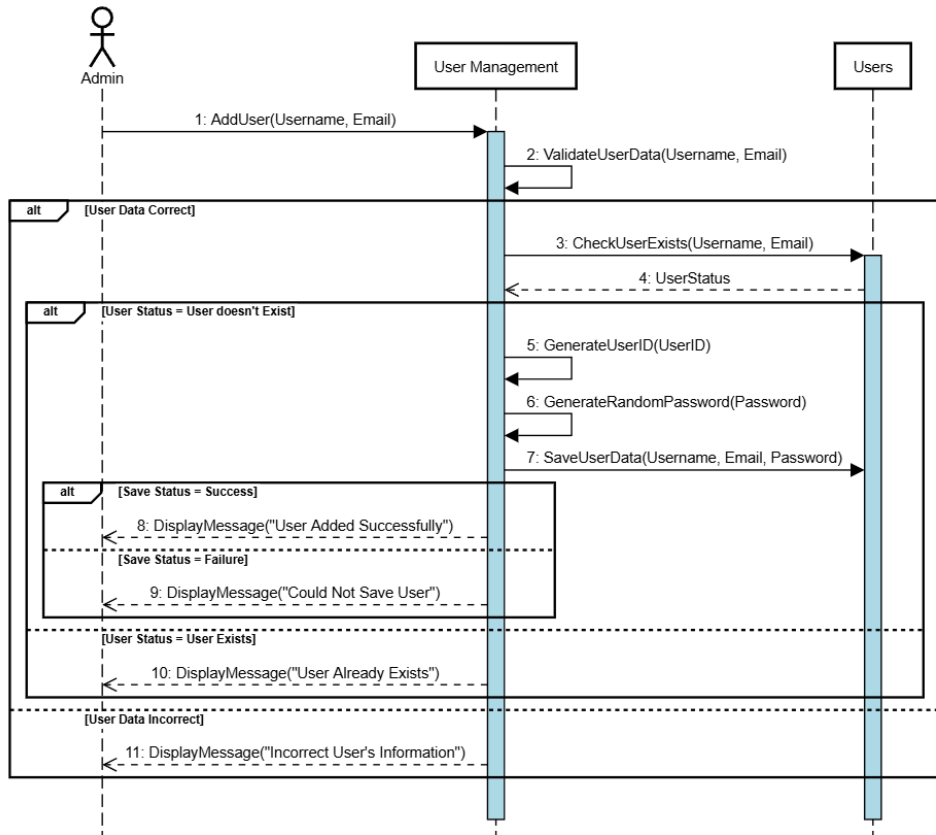
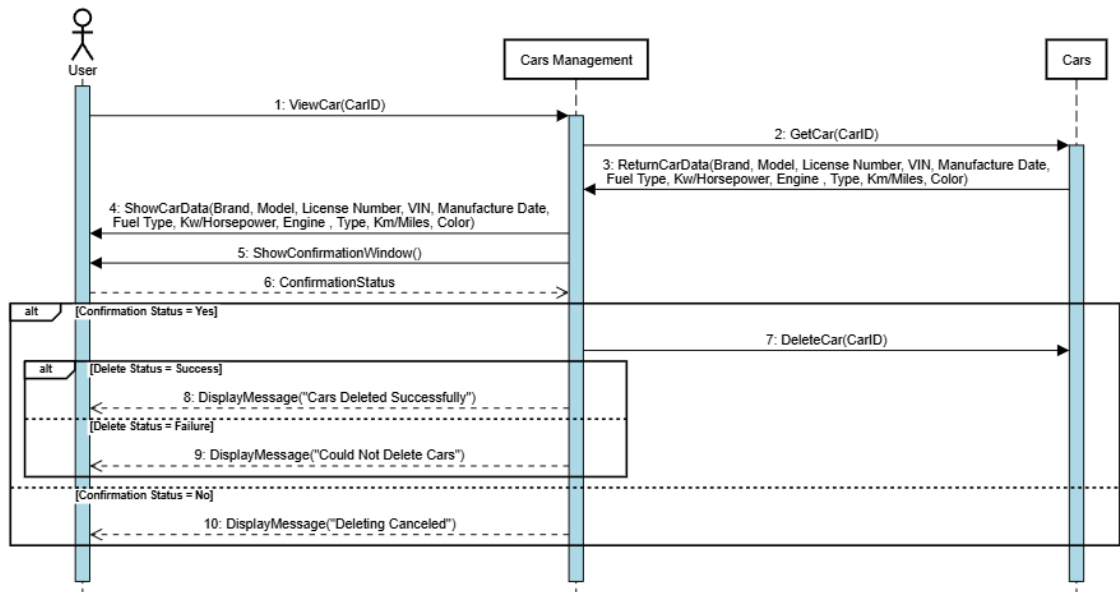### 2.2.6.2 Collaboration Diagram for Add User
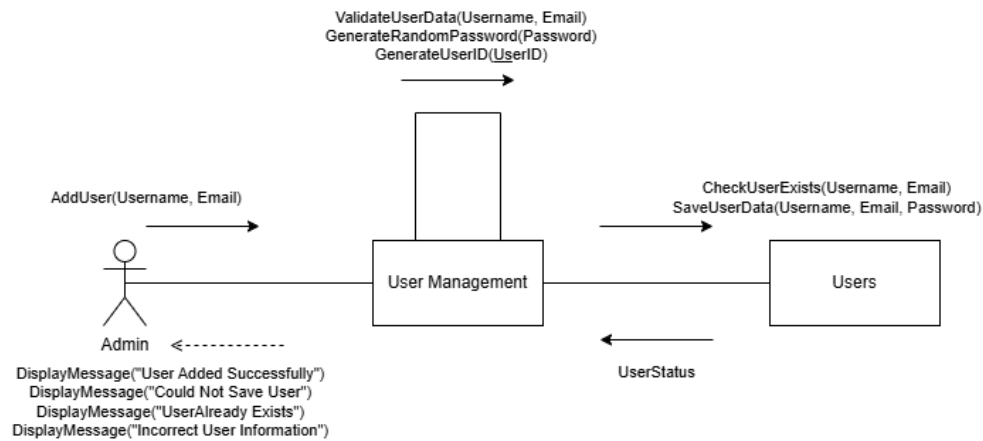
### 2.2.6.3 Sequence Diagram for Edit User
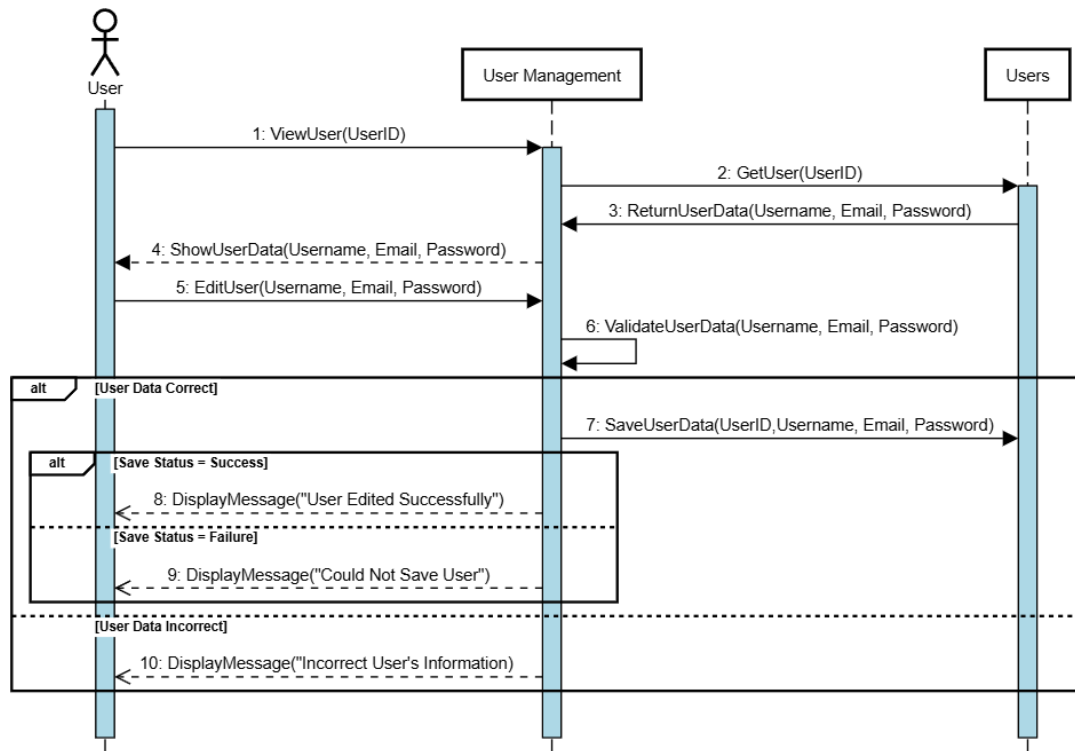
2.2.6.4 Collaboration Diagram for Edit User
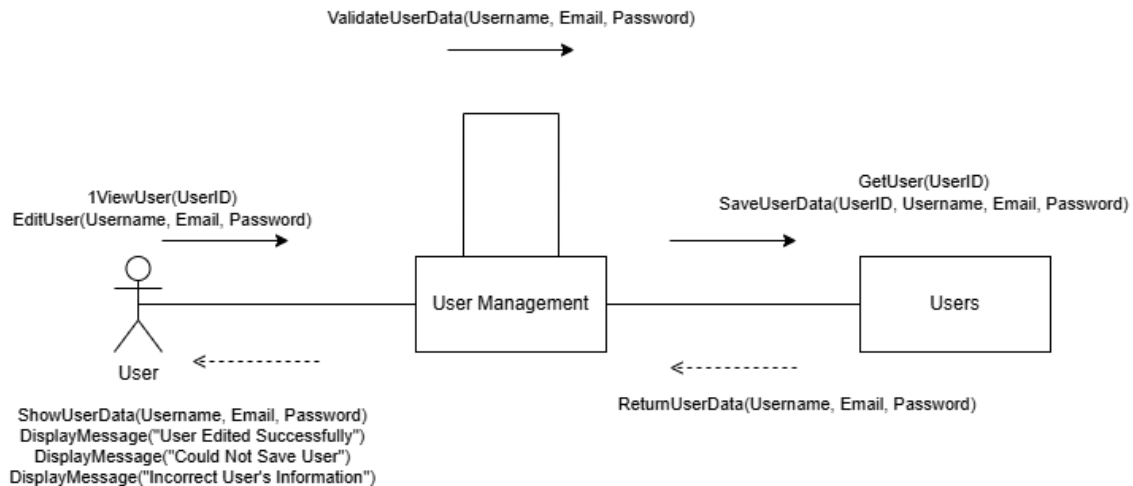
2.2.6.5 Sequence Diagram for Delete User
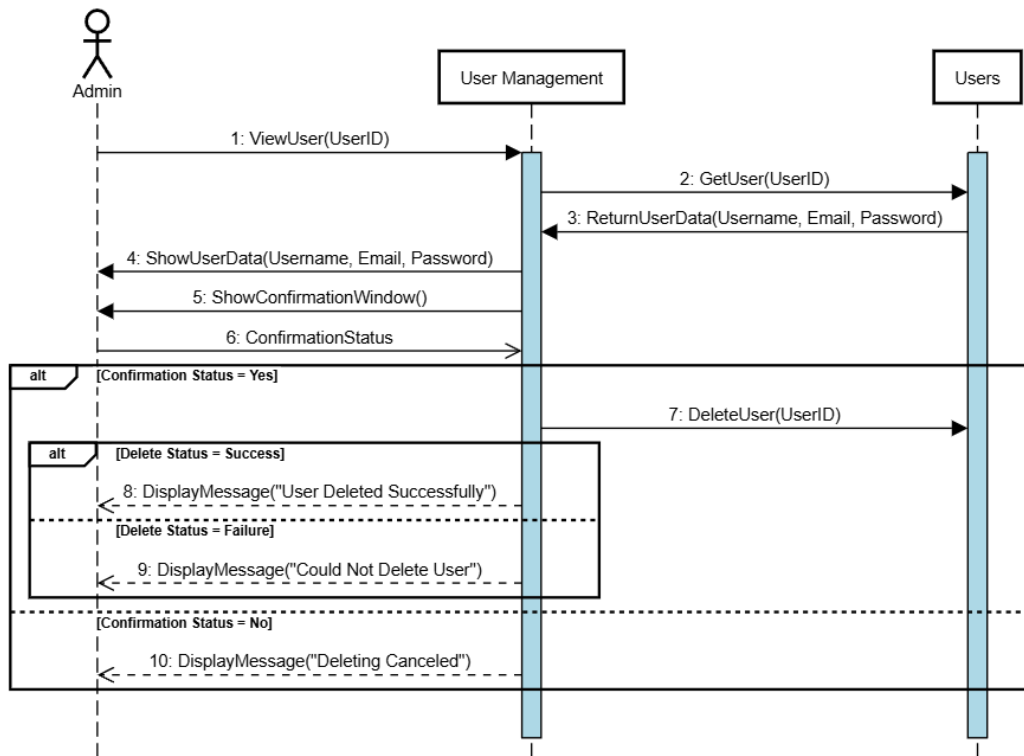
2.2.6.6 Collaboration Diagram for Delete User
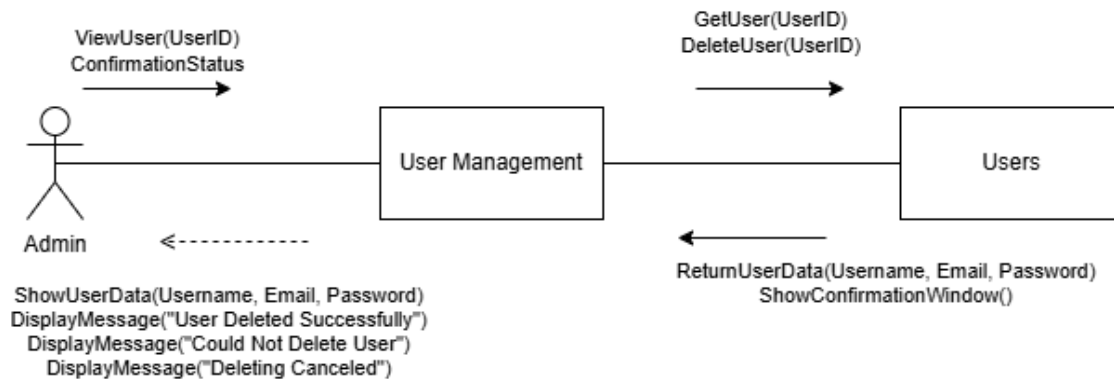
2.2.6.7 Sequence Diagram for Search User
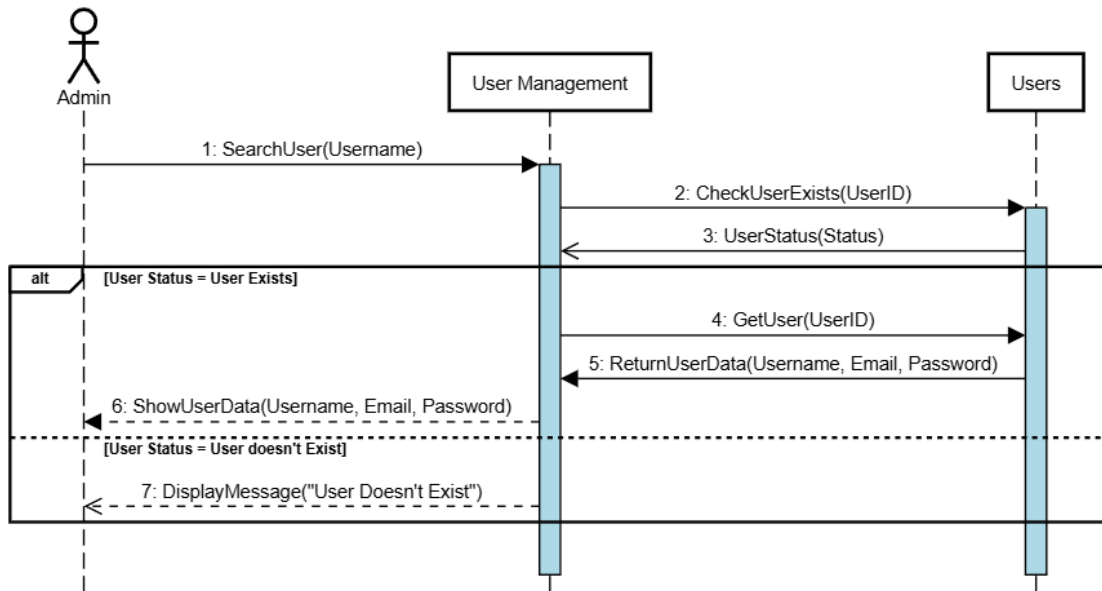
2.2.6.8 Collaboration Diagram for Search User
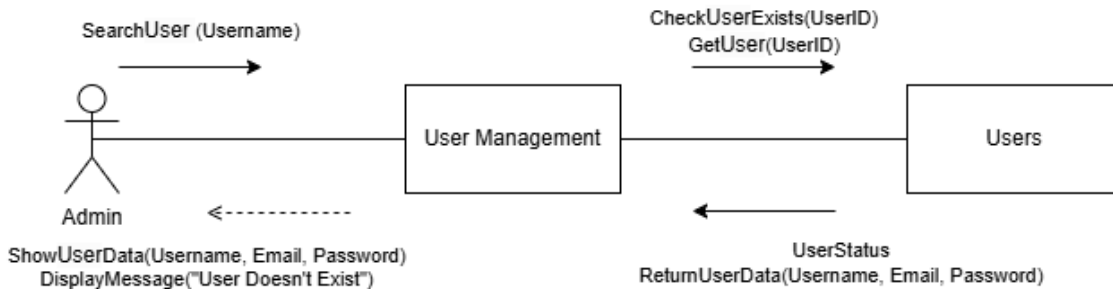
2.2.7 Interaction Diagrams for Invoice Management

2.2.7.1 Sequence Diagram for Add Invoice
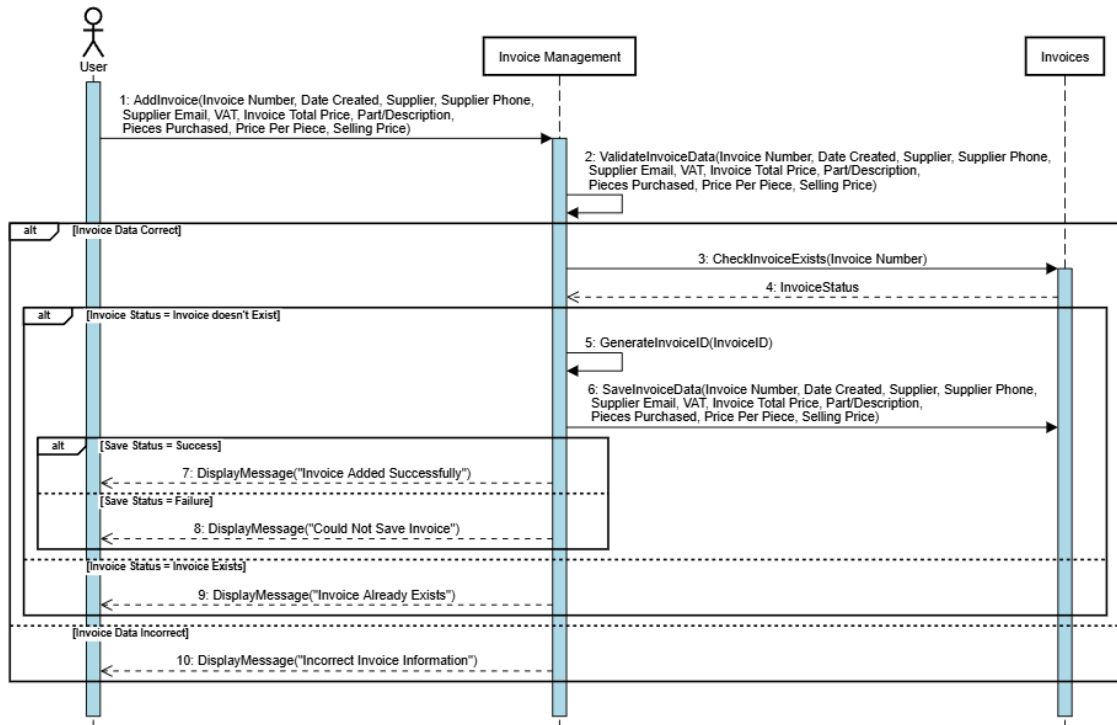
2.2.7.2 Collaboration Diagram for Add Invoice
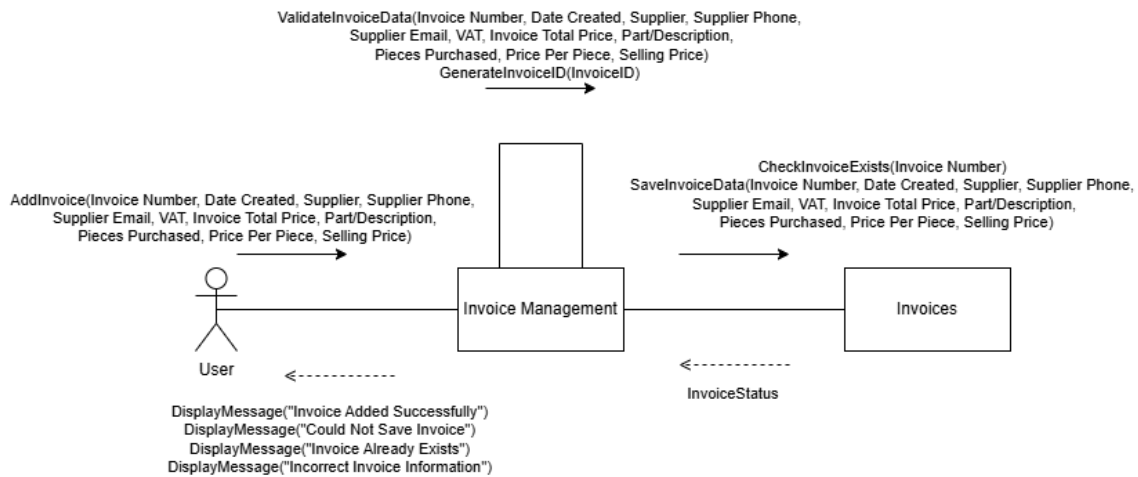
2.2.7.3 Sequence Diagram for Edit Invoice
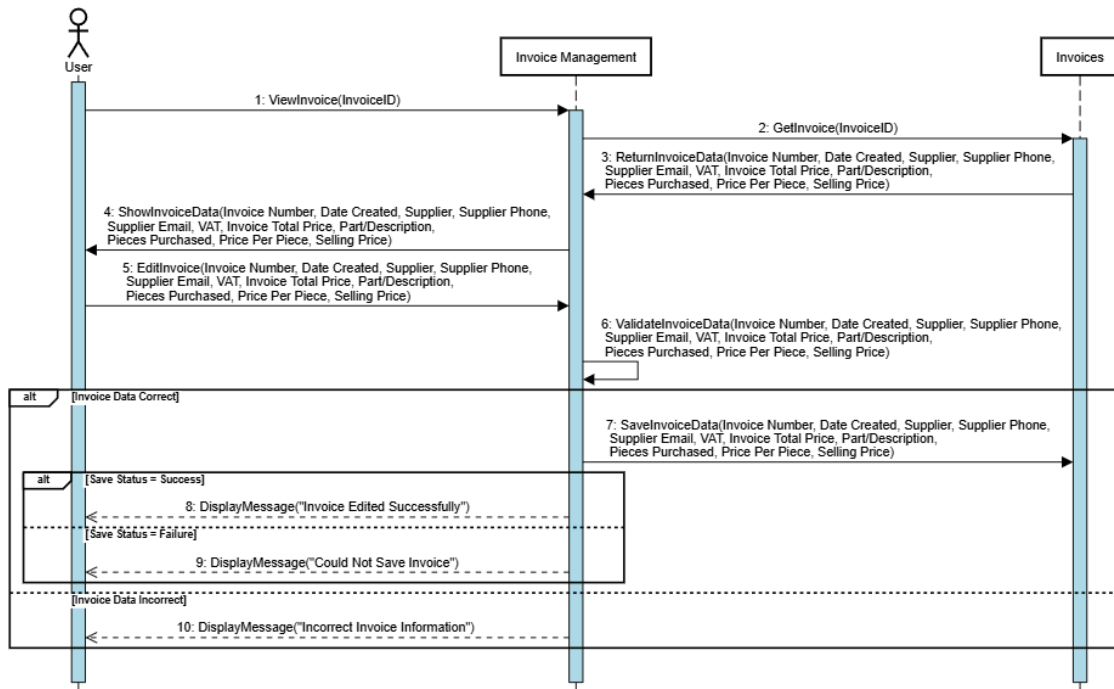
2.2.7.4 Collaboration Diagram for Edit Invoice
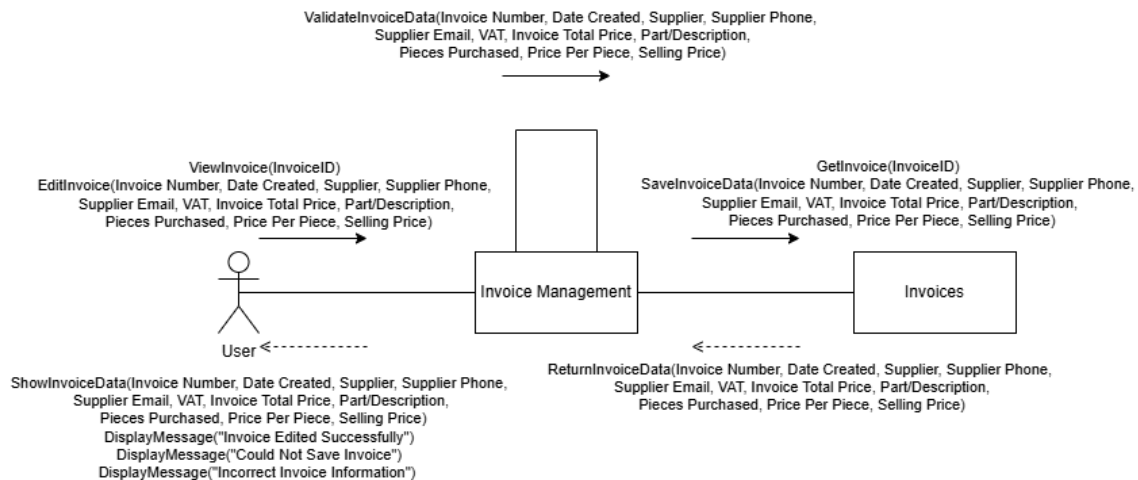
2.2.7.5 Sequence Diagram for Delete Invoice
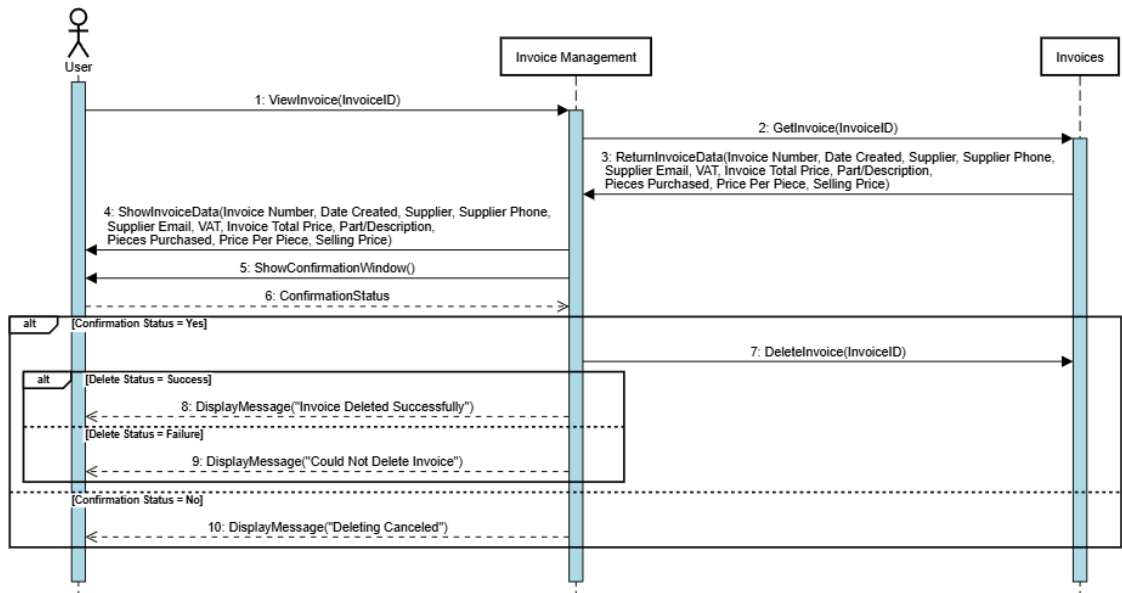
2.2.7.6 Collaboration Diagram for Delete Invoice
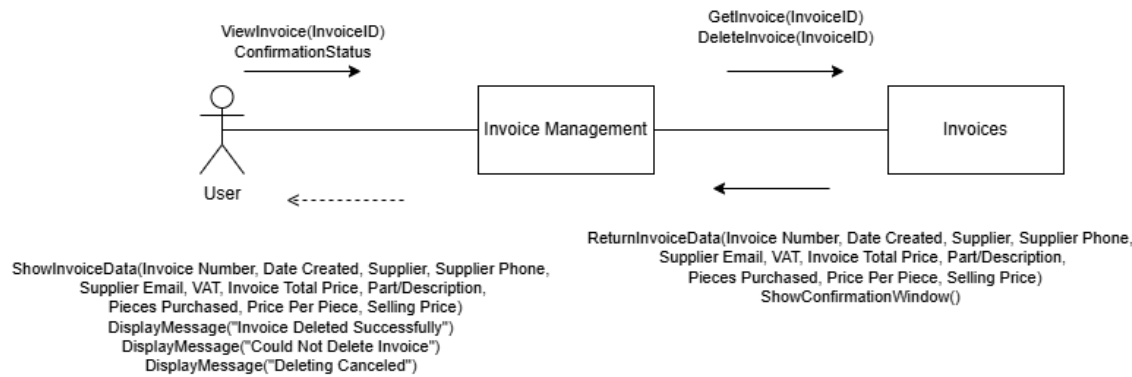
2.2.7.7 Sequence Diagram for Print Invoice List
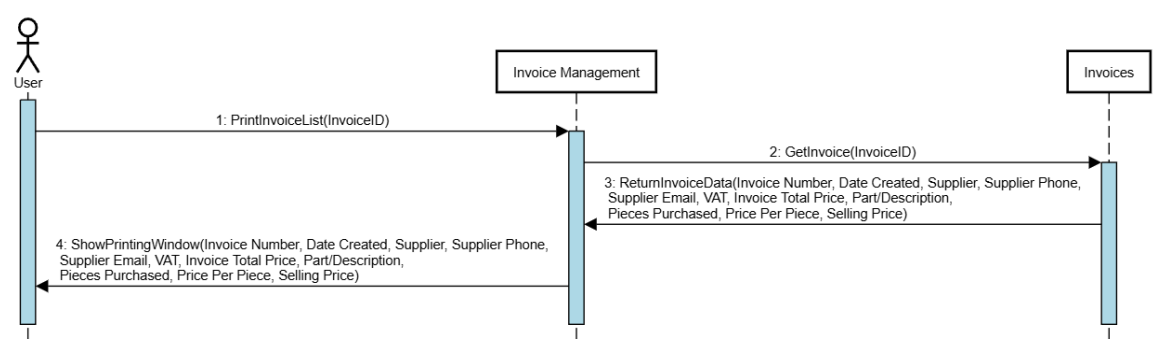
2.2.7.8 Collaboration Diagram for Print Invoice List
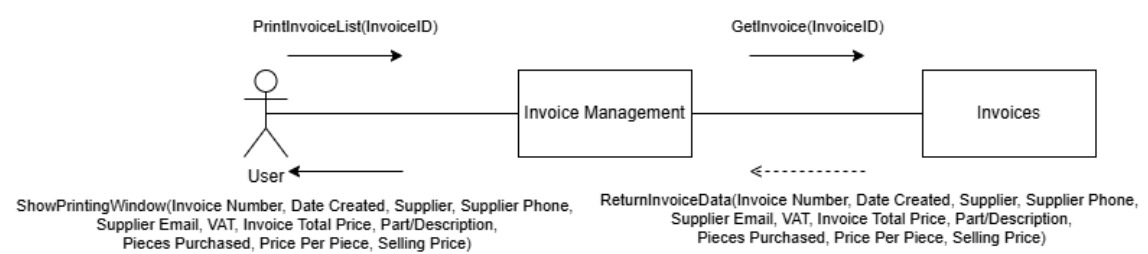
2.2.7.9 Sequence Diagram for Print Invoice
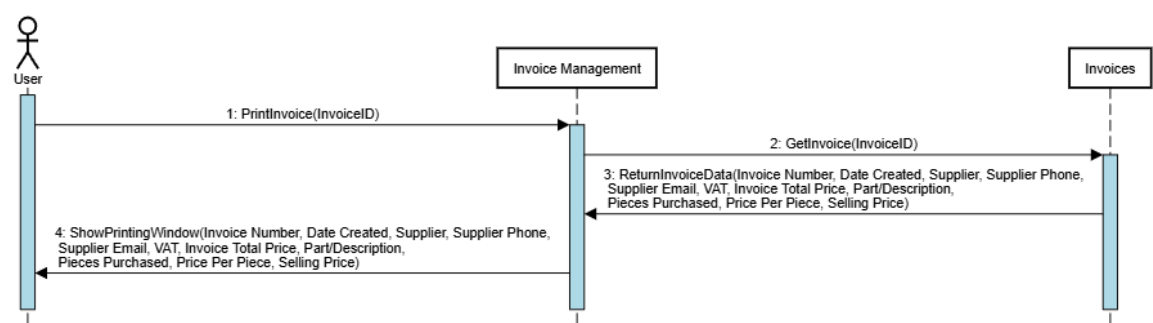
2.2.7.10 Collaboration Diagram for Print Invoice
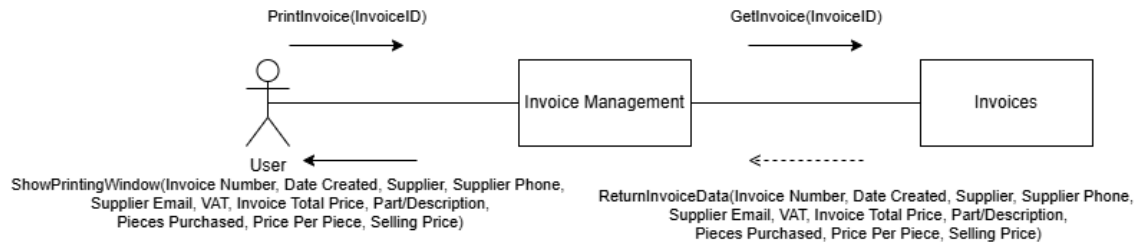
2.2.7.11 Sequence Diagram for Search Invoice
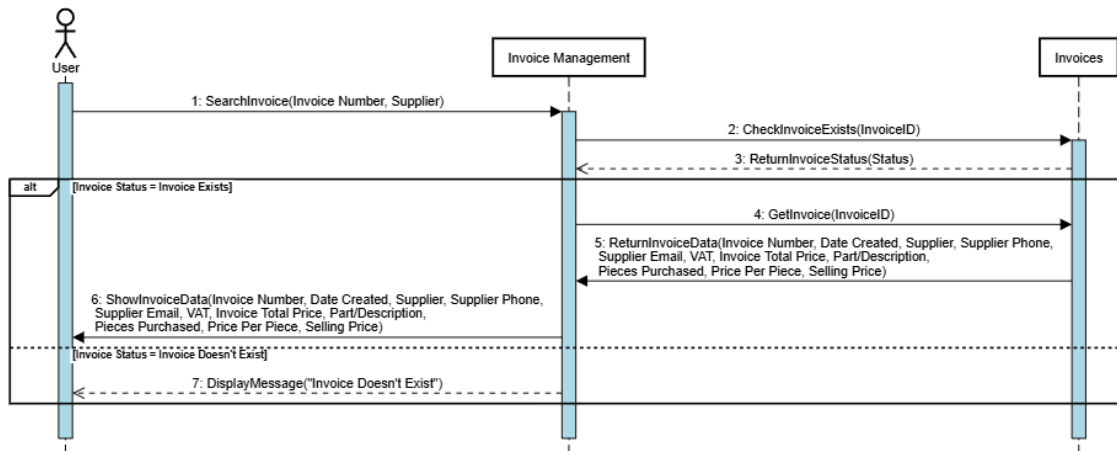
2.2.7.12 Collaboration Diagram for Search Invoice
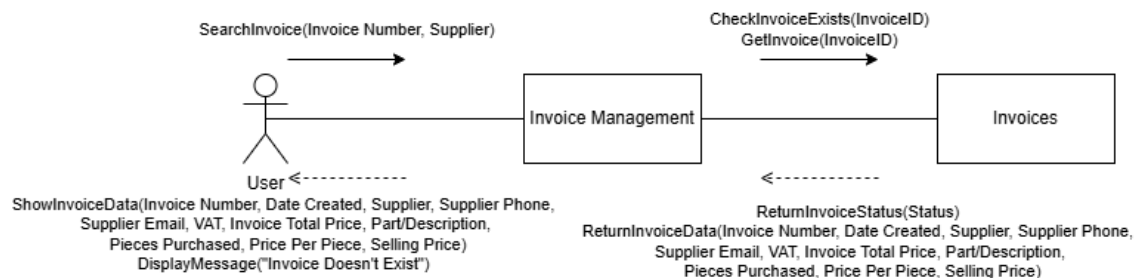
2.2.8 Interaction Diagrams for Cars Management

2.2.8.1 Sequence Diagram for Add Car
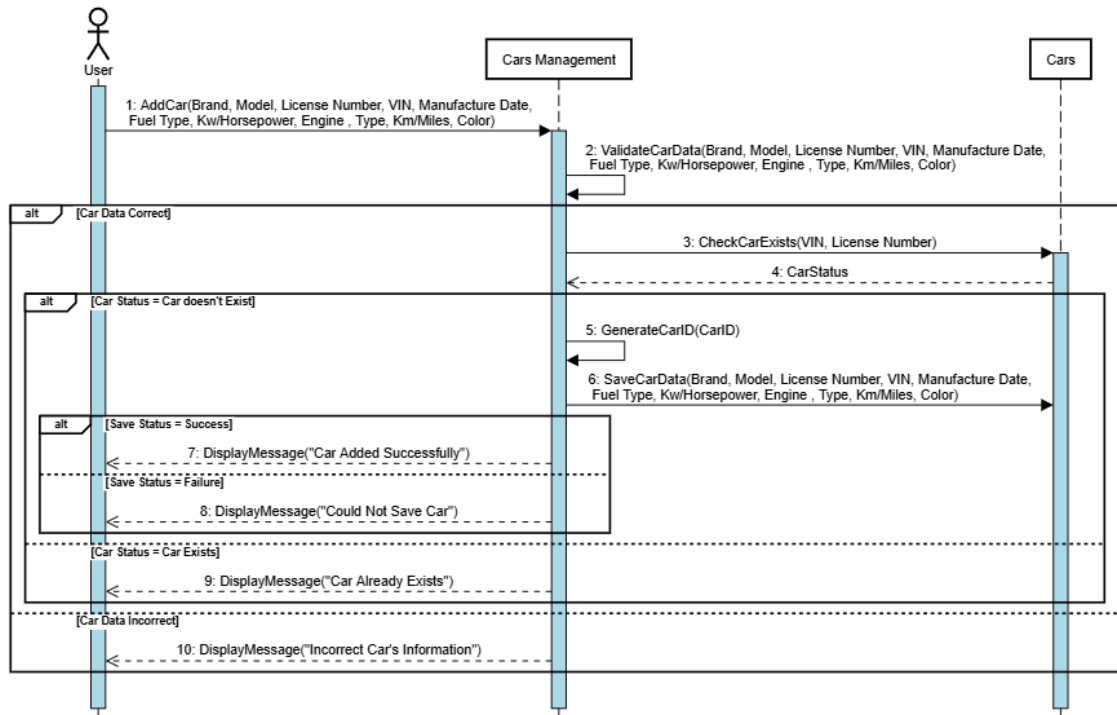
2.2.8.2 Collaboration Diagram for Add Car
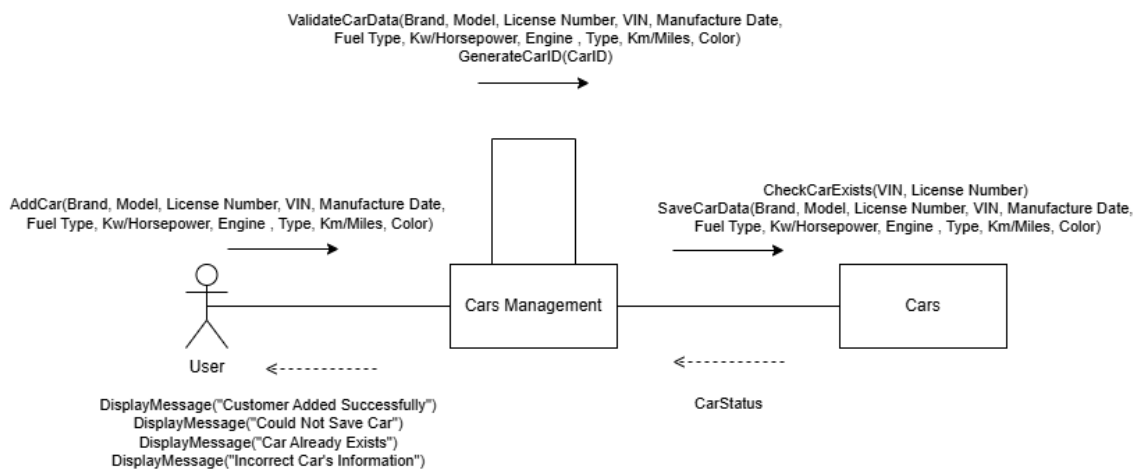
2.2.8.3 Sequence Diagram for Edit Car
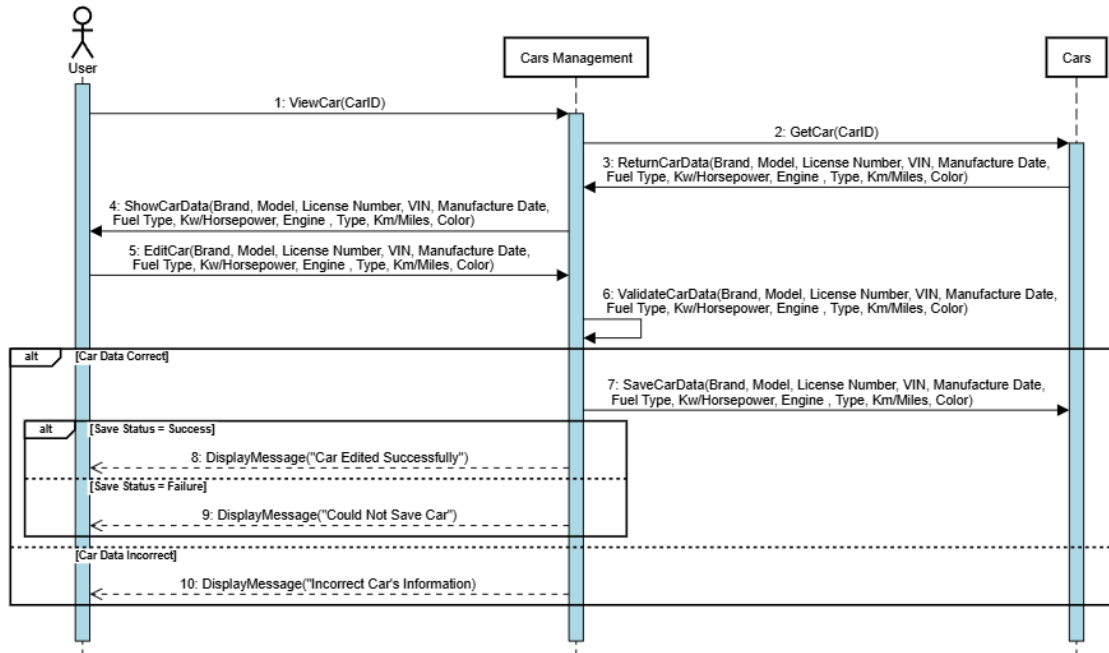
2.2.8.4 Collaboration Diagram for Edit Car
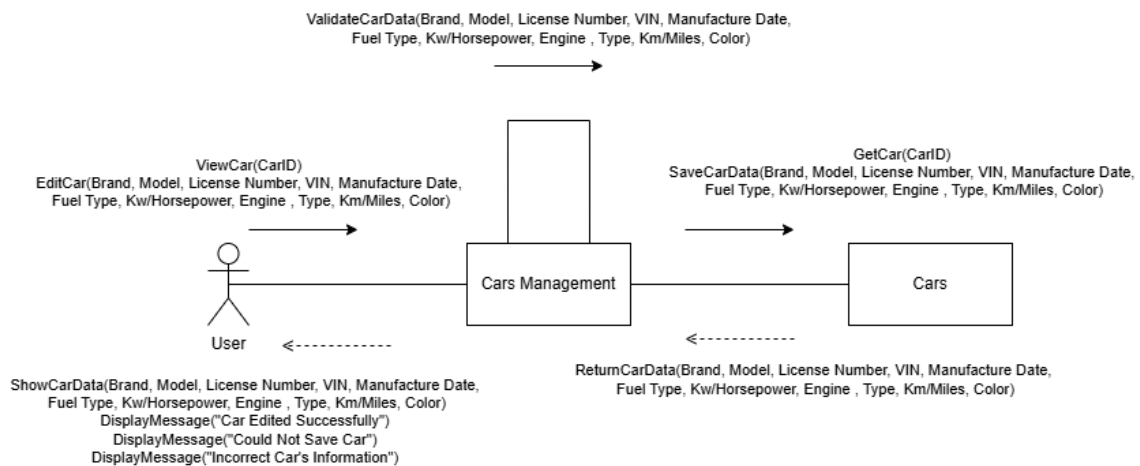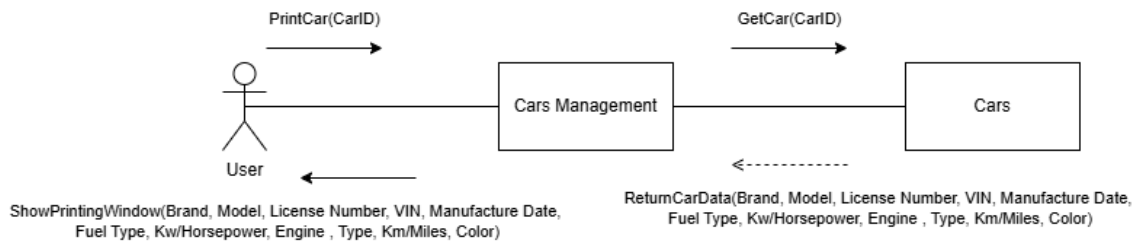
2.2.8.5 Sequence Diagram for Delete Car

2.2.8.6 Collaboration Diagram for Delete Car
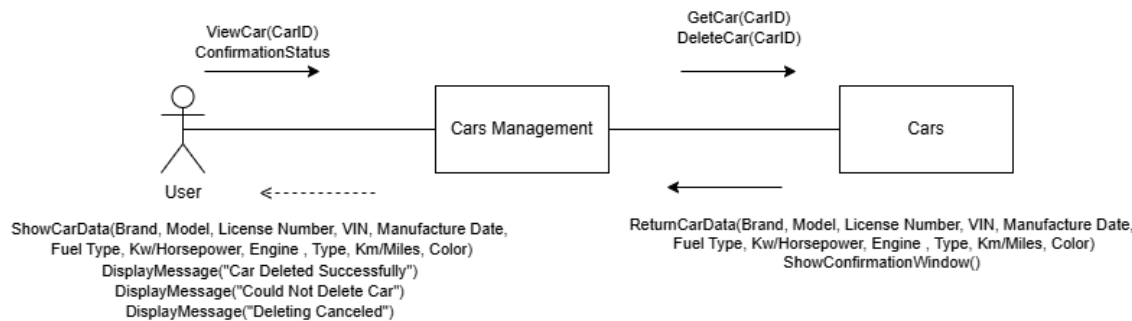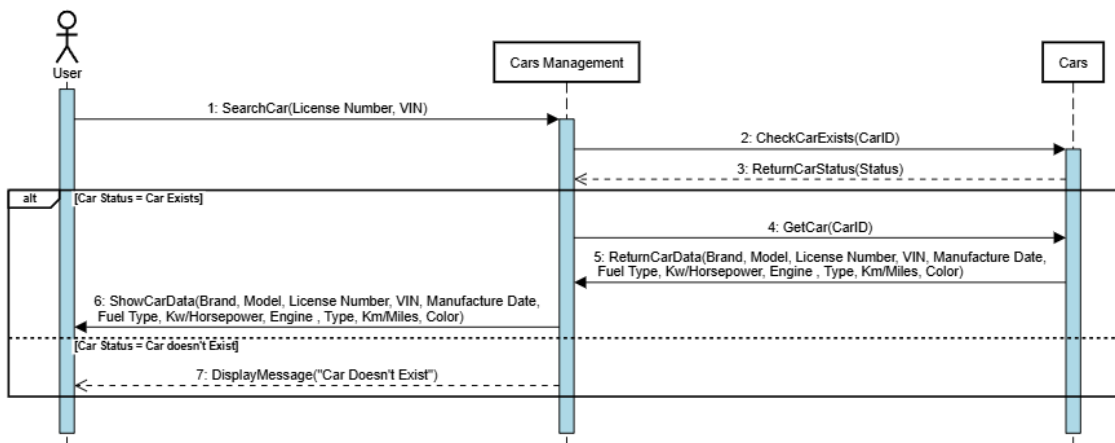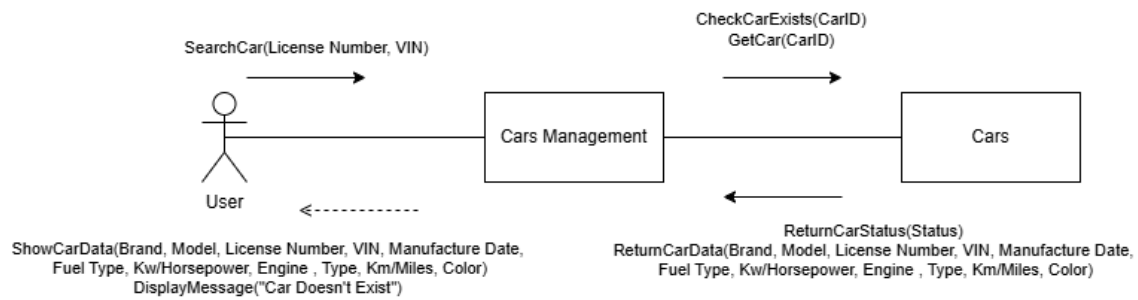
2.2.8.7 Sequence Diagram for Print Car
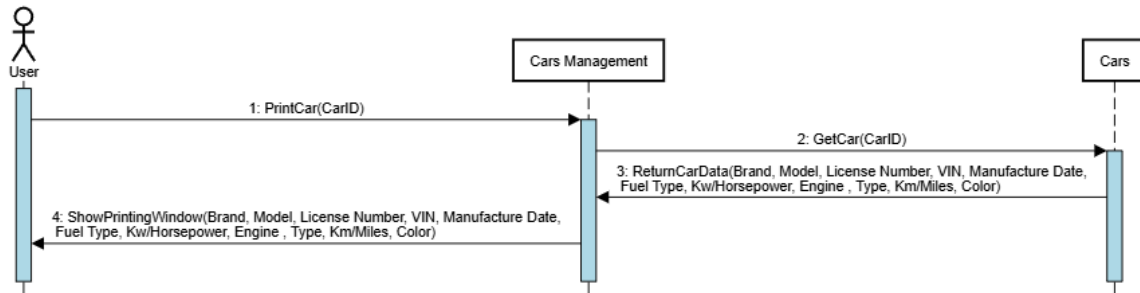
2.2.8.8 Collaboration Diagram for Print Car

2.2.8.9 Sequence Diagram for Search Car

2.2.8.10 Collaboration Diagram for Search Car

2.3 Detailed Class Diagram

2.4 Clients of Objects