



جامعة القاهرة
كلية الدراسات العليا للبحوث الإحصائية



العام الجامعى
2022/2021

Auto
Samir Rayan

Team Members



Under Supervision of Dr / Mostafa Ezzat

Introduction

Auto Samir Rayan Company Trades in all types of Cars and is considered one of the Largest Distributors in Cairo, where it is ranked first or second with the banks in the installment section in terms of the number of cars sold, and AMIC Corporation Depends on them in Evaluating the Egyptian Market.

The company is always keen on providing Cars at real prices; therefore, a website has been designed to market cars in ASP.Net Technology, and we hope that this work will be useful to our community, and we hope that you will like it.

Scope For Project Of Auto Rayan Cars(Website)

- This system is a type of **Interactive Transaction Based Application**.
- This system is a website for the sale and marketing of cars and access the car details before purchasing them and know the price, color, features, brandy, payment methods and installments.
- The team used the technology **Asp.net** with the programming language **C#** and using the technology of **Entity Framework** in the creation of this system as this system is affiliated with **Auto Rayan Cars** and the beneficiaries of this site are people who are looking to buy all new and modern cars by cash payment or installment and the scope of this company within the Arab Republic of Egypt .
- The website is accessed by globally familiar browsers such as google chrome and other browsers and search engines.
- This website provides the user to display the specifications of their modern cars and brands.
- The user also provides access to their installment and payment systems.

Auto Rayan (Purpose)

- 1- Ability to view the latest models and international brands of cars from home
- 2- Decrease routine of restrictive papers
- 3- Ability to buy cars from website by visa
- 4- Ability to view all car news from home
- 5- Increase the number of company's customers because digital marketing include whole the world

Requirement Specification

- 1-The System shall provide a functionality of Create a new user.
- 2- The System shall provide a functionality of login.
- 3-The System shall provide an Edit Property for any user has been registered.
- 4-The System shall provide a property of Change Password for any registered user.
- 5-The System should provide a property of unsubscribe from our site.
- 6- The System shall provide a property of log out from our site.
- 7- The System shall provide a property of View the page of Car Description Details.
- 8- The System shall provide a property of View the page of Car Brand.
- 9- The System shall provide a property of Payment through Cash or Credit.
- 10- The System shall provide a property of View the page of installments systems.
- 11-The system shall provide administrator the full control of Car Page.
- 12- The System shall provide administrator the full control of Brand Page.

identifier	priority	Requirement
REQ 1	5	The System shall provide a functionality of Create a new user.
REQ 2	5	The System shall provide a functionality of login.
REQ 3	3	The System shall provide an Edit Property for any user has been registered.
REQ 4	4	The System shall provide a property of Change Password for any registered user
REQ 5	1	The System should provide a property of unsubscribe from our site.
REQ 6	2	The System shall provide a property of log out from our site.
REQ 7	5	The System shall provide a property of View the page of Car Description Details.
REQ 8	5	The System shall provide a property of View the page of Car Brand.
REQ 9	4	The System shall provide a property of Payment through Cash or Credit.
REQ 10	4	The System shall provide a property of View the page of installments systems.
REQ 11	3	The system shall provide administrator the full control of Car Page.
REQ 12	3	The System shall provide administrator the full control of Brand Page.

Identifier	User story	size
ST-1	As an authorized customer, I can do a functionality of Create a new user.	2 pt
ST-2	As an authorized customer, I can do Login.	2 pt
ST-3	As an authorized customer, I can edit the account details, I was created on the site in advance.	2 pt
ST-4	As an authorized customer, I can do a property of Change Password	3 pt
ST-5	As an authorized customer, I can cancel the subscription or cancel the validity of the account I created in advance.	2 pt
ST-6	As an authorized customer, I can also log out of my account as a user on this site.	2 pt
ST-7	As an authorized customer, I can also view the page of containing the car specifications.	8 pt
ST-8	As an authorized customer, I can also view the page of containing the brand car.	5 pt
ST-9	As an authorized customer, I can view the page of containing the installment systems.	7 pt
ST-10	As an authorized customer, I can view the page of containing payment methods such as visa payment or cash payment.	4 pt
ST-11	As an authorized administrator, I can do the full control of Car Page.	3 pt
ST-12	As an authorized administrator, I can do the full control of Brand Page.	3 pt

<i>Work Item</i>	<i>User Story</i>	<i>Iteration.NO</i>	<i>Estimated Work duration</i>
1	St-1 Create User	Iteration 1	2pt(0.5day)
2	St-2 Edit profile	Iteration5	2pt(0.5day)
3	St-3 Login	Iteration 1	2pt(0.5day)
4	St-4 Change password	Iteration1	3pt(1day)
5	St-5 UN Subscribe	Iteration5	2pt(0.5day)
6	St-6 Log out	Iteration6	2pt(0.5day)
7	St-7 View Car	Iteration2	8pt(3day)
8	St-8 View Brand	Iteration2	5pt(1.5day)
9	St-9 View installment	Iteration3	7pt(2.5day)
10	St-10 View payment method	Iteration3	4pt(1.5day)
11	St-11 Control of page	Iteration4	3pt(1day)
12	St-12 Control of Brand	Iteration4	3pt(1day)

Time and effort estimation

Time velocity :-

Our team can do 3 points per 1day.

Project duration

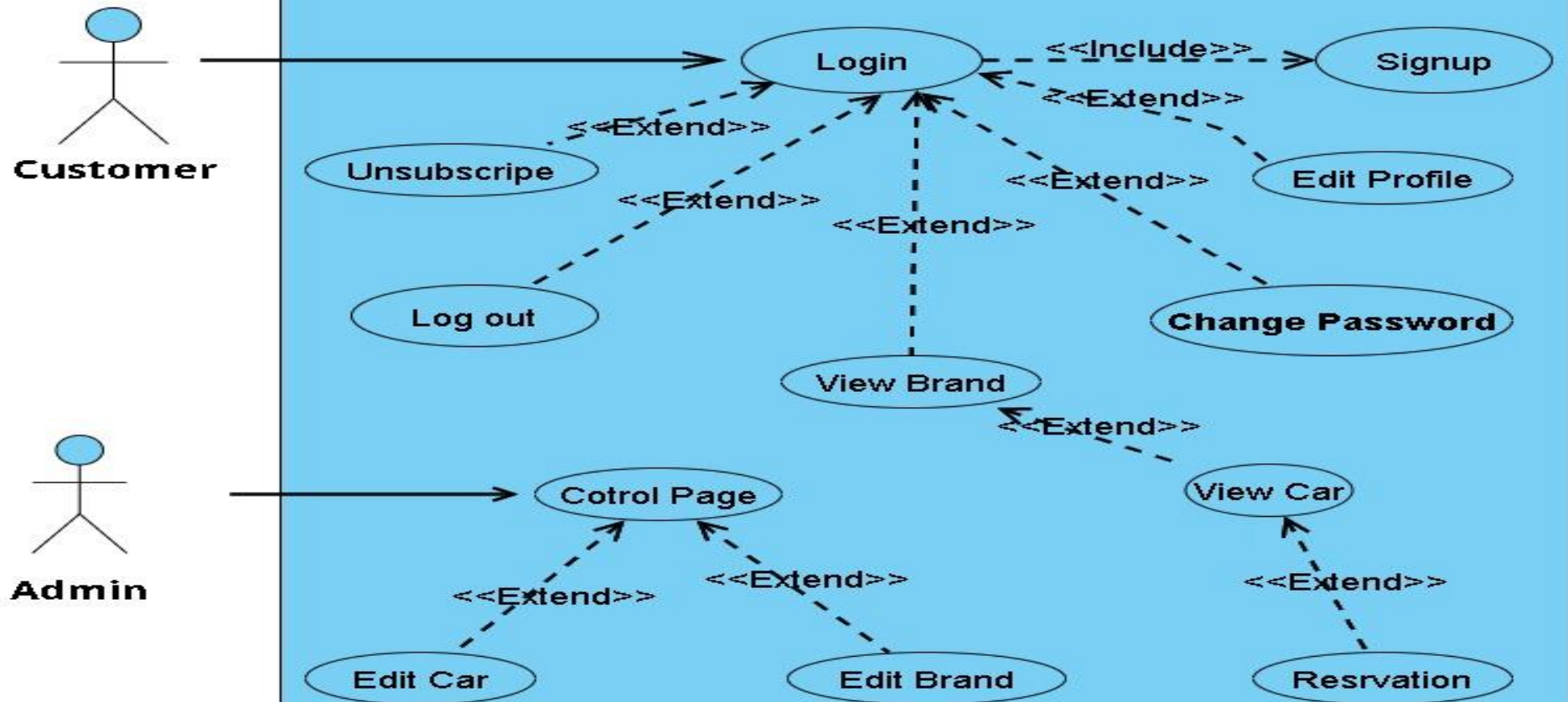
Total work size= $4+5+10+5+7+4+3+2+3$
= 43 points.

Project duration = $\frac{\text{path size}}{\text{Travel velocity}}$

Project duration = $43 / 3 = 14$ days .

Usecase

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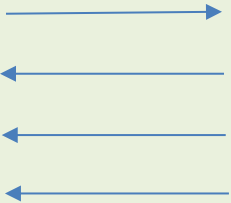
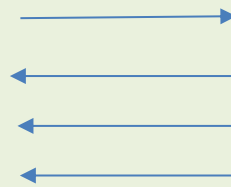


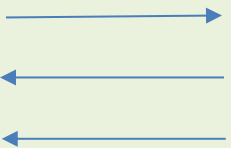
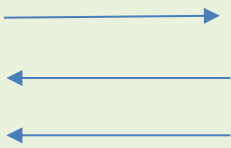
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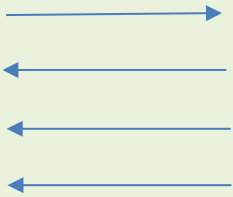
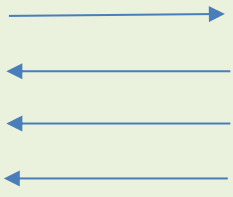
Auto Rayan actors description

Actor	Actor's Goal	Use case name
Customer	Create a new user	Signup
Customer	Login to the site	Login
Customer	He modifies his account data that he created before	Edit profile
Customer	He changes the password on his account he created before	Change password
Customer	Cancels its subscription on the site	Unsubscribe
Customer	Logging out of his personal account on the site	Logout
Customer	It displays the page containing the car brand	View Brand
Customer	It displays the page containing the car.	View Car
Customer	He also booked the car through the reservation page on the site	Reservation
Admin	It controls and edits the data of the brand and car page	Control page
Admin	It controls and edits the car page	Edit Car
Admin	It controls and edits the brand page	Edit Brand

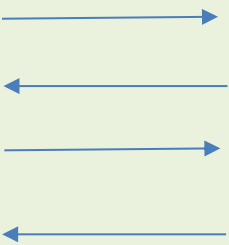
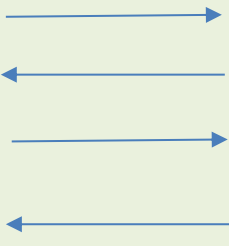
Usecase Description


Use case 1-(uc-1)	
Related Requirements	REQ-1
Initiating Actor:	Customer
Actor's Goal:	Create a new user
Participating Actors	
Preconditions:	-the system has a function of register for a new user.
Post conditions:	-the system will check the validity of data for the user. -the system will save the user data in the database.
Flow of Events for main success scenario:	
	1-the user will enter his personal data required for registration. 2--the system will check if the data is valid or not. 3-if the data is valid the system will show message "created successfully" 4-the system will save the data in the database.
Flow of Events for Extensions (Alternate scenarios):	
	1-the user will enter an invalid data. 2--the system will check if the data is valid or not. 3-if the data is invalid the system will show message "invalid data" 3-the system will reject these data and request from him a valid data.

Use case 2-(uc-2)	
Related Requirements	REQ-2
Initiating Actor:	Customer
Actor's Goal:	Login customer to the site
Participating Actors	
Preconditions:	-the system has a function of login to the website
Post conditions:	-the system will check the user data for login Then view the main page.
Flow of Events for main success scenario:	
	1-the user will enter his personal data required for login 2--the system will check if the data is valid or not. 3-if the user name and password is correct then the system forward him to the main page.
Flow of Events for Extensions (Alternate scenarios):	
	1-the user will enter his personal data required for login 2--the system will check if the data is valid or not. 3-if the user name and password is incorrect then the system will show message" incorrect user name and password".

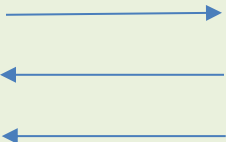
Use case 3-(uc-3)	
Related Requirements	REQ-3
Initiating Actor:	Customer
Actor's Goal:	Modify user data
Participating Actors	
Preconditions:	-the system has a function of edit the user data
Post conditions:	-the system will save the new data after edit
Flow of Events for main success scenario:	
	1-the user will enter his personal data which need to modify 2--the system will check if the data is valid or not. 3-if the data is valid the system will show message "saved successfully" 4-the system will save the new data in the database.
Flow of Events for Extensions (Alternate scenarios):	
	1-the user will enter his personal data which need to modify 2--the system will check if the data is valid or not. 3-if the data is invalid the system will show message "invalid data" 4-the system will refuse the new data.

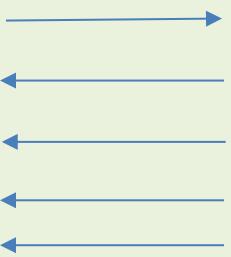
Use case 4-(uc-4)	
Related Requirements	REQ-4
Initiating Actor:	Customer
Actor's Goal:	Change the user password
Participating Actors	
Preconditions:	-the system has a function of change password
Post conditions:	-the system will check if the new password is valid or not and then saved the new password.
Flow of Events for main success scenario:	
<pre> sequenceDiagram actor Customer Customer->>System: System-->>Customer: Customer->>System: System-->>Customer: Customer->>System: System-->>Customer: </pre>	1-the user will enter the old password and the new password. 2--the system will check if the data is valid or not. 3-if the data is valid the system will show message "saved successfully" 4-the system will save the new password in the database.
Flow of Events for Extensions (Alternate scenarios):	
<pre> sequenceDiagram actor Customer Customer->>System: System-->>Customer: Customer->>System: System-->>Customer: Customer->>System: System-->>Customer: </pre>	1-the user will enter his personal data which need to modify 2--the system will check if the data is valid or not. 3-if the data is invalid the system will show message "invalid data" 4-the system will refuse the new data.

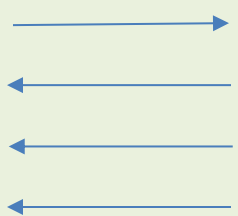
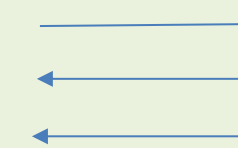
Use case 5-(uc-5)	
Related Requirements	REQ-5
Initiating Actor:	Customer
Actor's Goal:	Unsubscribe user from the site
Participating Actors	
Preconditions:	-the system has a function of unsubscribe
Post conditions:	-the system will make unsubscribe for the user and the remove his data from database
Flow of Events for main success scenario:	
 <pre> sequenceDiagram participant User participant System User->>System: 1-the user will enter his personal data required for login page System-->>User: 2--the system will check if the data is valid or not. User->>System: 3-the user will choose unsubscribe from the home page and then choose the reason. System-->>User: 4-the system will make unsubscribe and remove the data. </pre>	
Flow of Events for Extensions (Alternate scenarios):	
 <pre> sequenceDiagram participant User participant System User->>System: 1-the user will enter his personal data required for login page System-->>User: 2--the system will check if the data is valid or not. User->>System: 3-the user will chose unsubscribe from the home page and leave the reason. System-->>User: 4-the system will refuse unsubscribe without choose any reason. </pre>	

Use case 6-(uc-6)	
Related Requirements	REQ-6
Initiating Actor:	Customer
Actor's Goal:	Logout user from the site
Participating Actors	
Preconditions:	-the system has a function of logout from the website
Post conditions:	-the system will make logout without remove any data
Flow of Events for main success scenario:	
 <pre> sequenceDiagram actor Customer usecase UC6 as UC-6 Customer->>UC6: 1-the user will enter his personal data required for login page UC6-->>Customer: 2--the system will check if the data is valid or not. Customer->>UC6: 3-the user will choose logout from the home page UC6-->>Customer: 4-the system will make logout without remove any data saved. </pre>	1-the user will enter his personal data required for login page 2--the system will check if the data is valid or not. 3-the user will choose logout from the home page 4-the system will make logout without remove any data saved.
Flow of Events for Extensions (Alternate scenarios):	

Use case 7-(uc-7)		
Related Requirements		REQ-7
Initiating Actor:		Customer
Actor's Goal:		Display the page containing the car brand
Participating Actors		
Preconditions:		-the system has a function of displaying the car brand page.
Post conditions:		-the system will displaying the car brand page and view the available stock from any car.
Flow of Events for main success scenario:		
<div><div></div><div></div><div></div></div>		1-the user will enter his personal data required for login. 2--the system will check if the data is valid or not. 3-the system will view the brand car page for the customer from view brand.
Flow of Events for Extensions (Alternate scenarios):		

Use case 8-(uc-8)	
Related Requirements	REQ-8
Initiating Actor:	Customer
Actor's Goal:	Display the page containing the car
Participating Actors	
Preconditions:	-the system has a function of displaying the car page
Post conditions:	-the system will displaying the car page and view the available stock from any car.
Flow of Events for main success scenario:	
	1-the user will enter his personal data required for login. 2--the system will check if the data is valid or not. 3-the system will view the car page for the customer from view car.
Flow of Events for Extensions (Alternate scenarios):	

Use case 9-(uc-9)	
Related Requirements	REQ-9
Initiating Actor:	Customer
Actor's Goal:	Book the car through the reservation page
Participating Actors	
Preconditions:	-the system has a function of reservation
Post conditions:	-the system will validate the payment card through reservation process.
Flow of Events for main success scenario:	
	1-the user will enter his personal data required for login 2--the system will check if the data is valid or not. 3-the system will view the reservation page after choose the car. 4-the system will validate the payment card. 5-the system will save the reservation data.
Flow of Events for Extensions (Alternate scenarios):	

Use case 10-(uc-10)	
Related Requirements	REQ-10
Initiating Actor:	admin
Actor's Goal:	Control and edit the brand and car page
Participating Actors	
Preconditions:	-the system has a function of control and edit car page through admin.
Post conditions:	-the system will save the modifications occurred by admin.
Flow of Events for main success scenario:	
	1-the admin will enter the user name and password. 2--the system will check if the data is valid or not. 3-if the data is valid then the system will view the control page. 4-the system will save the data which has been modified in the database.
Flow of Events for Extensions (Alternate scenarios):	
	1-the admin will enter the user name and password. 2--the system will check if the data is valid or not. 3-if the data is invalid then the system will show message “wrong user name and password”.

Traceability Matrix

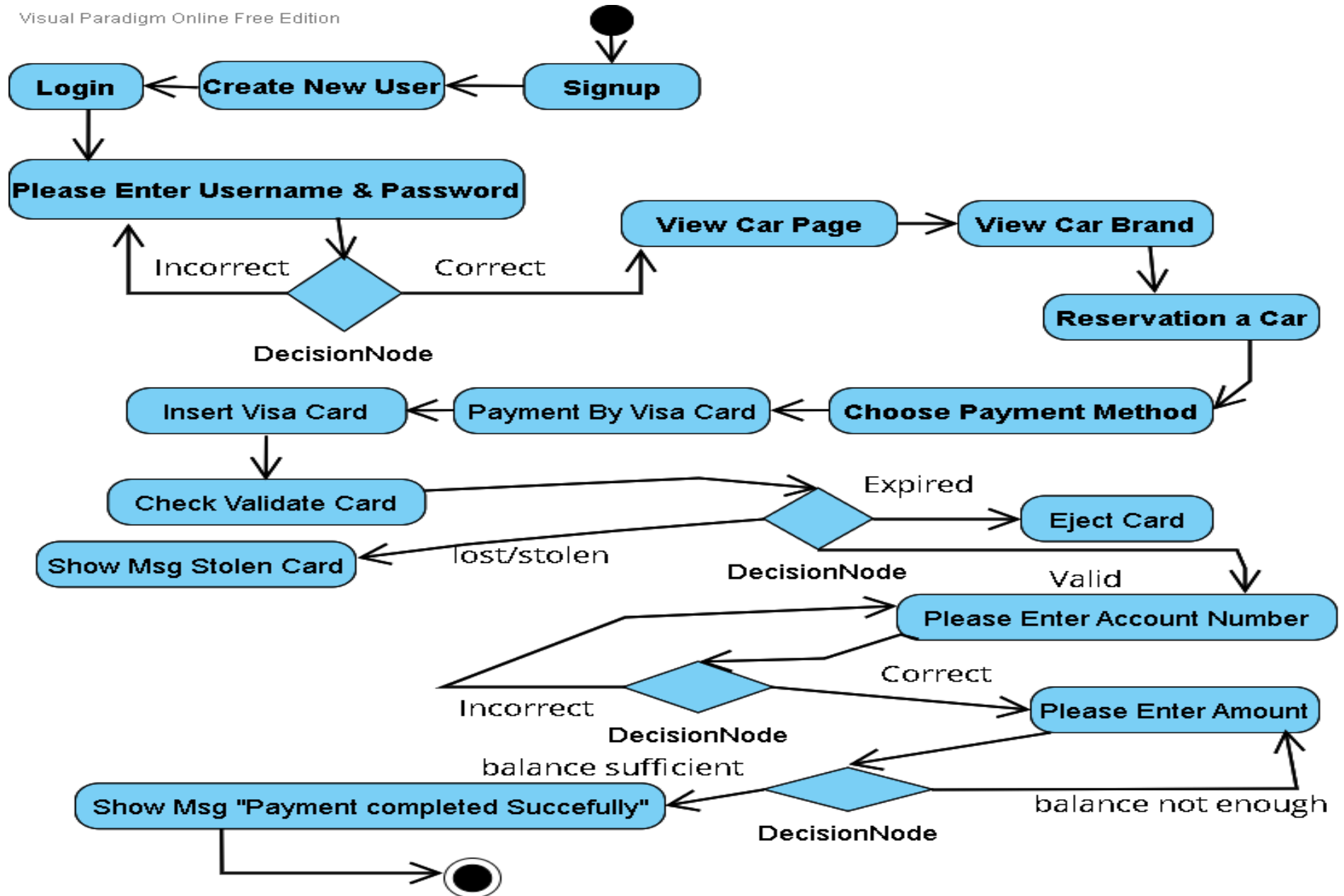
requirements	Pw	uc _1	uc _2	uc _3	uc _4	uc _5	uc _6	uc_ 7	uc_ 8	uc_ 9	uc _10	uc _11	uc_ 12
Req 1	5	x											
Req 2	5		x										
Req 3	4			x									
Req 4	1				x								
Req 5	2					x							
Req 6	5						x						
Req 7	5							x					
Req 8	4								x				
Req 9	4									x			
Req 10	3										x		
Req 11	3											x	
Req 12	5												x
Max Pw		5	5	4	1	2	5	5	4	4	3	3	5
Total Pw		5	5	4	1	2	5	5	4	4	3	3	5

According To Traceability Matrix

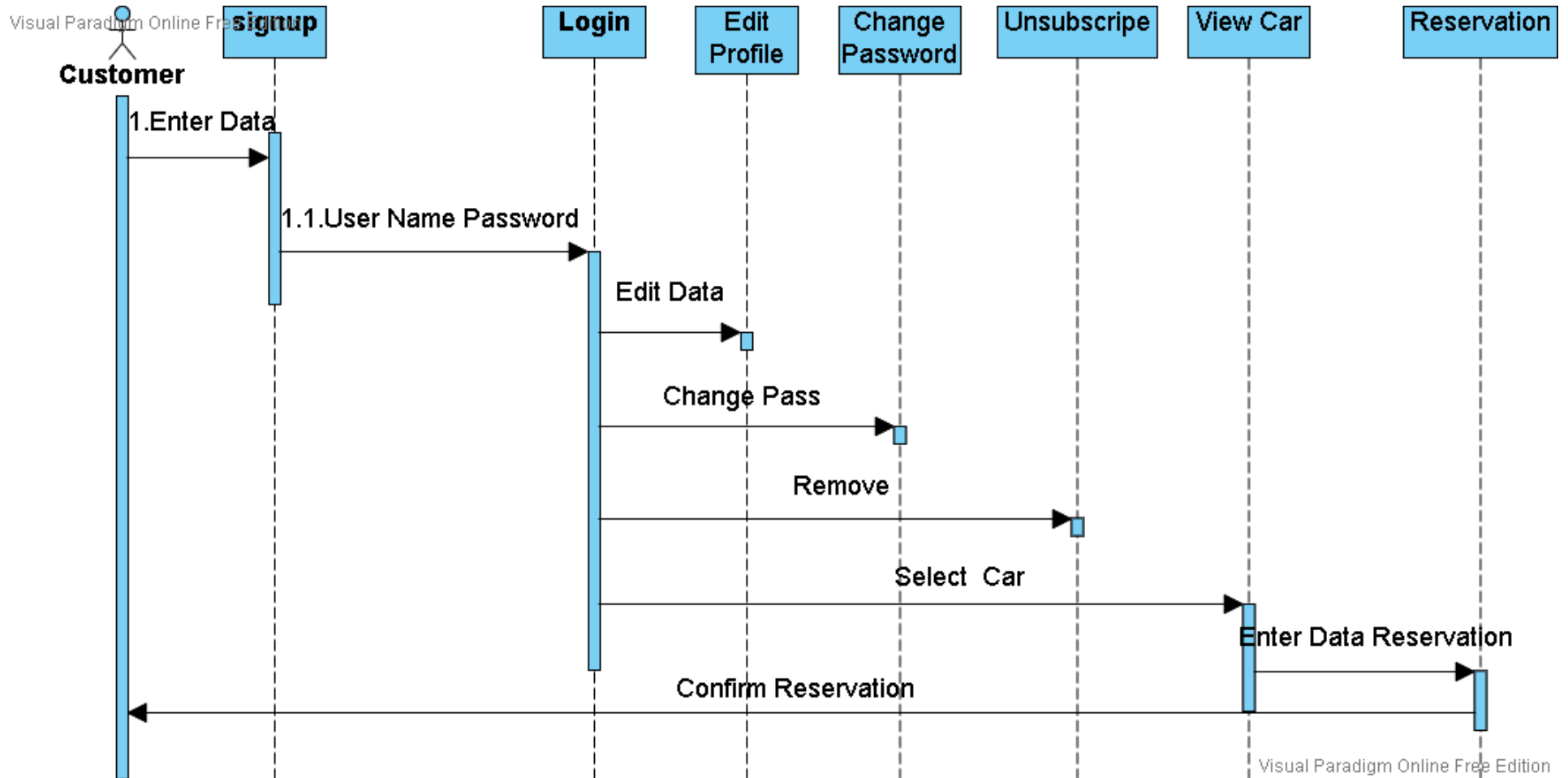
Usecase	Max Pw	Total Pw	Order of Implementation
Uc_1	5	5	1
Uc_2	5	5	2
Uc_3	5	5	3
Uc_4	5	5	4
Uc_5	5	5	5
Uc_6	4	4	6
Uc_7	4	4	7
Uc_8	4	4	8
Uc_9	3	3	9
Uc_10	3	3	10
Uc_11	2	2	11
Uc_12	1	1	12

Activity Diagram

Visual Paradigm Online Free Edition



Sequence Diagram



Non Functional Requirements

- **Performance Requirements:-**

- The system must be able to respond quickly to the commands and functions performed by the user.

- **System Requirements:-**

- Providing the site with the feature of printing or issuing a report on purchases or reservations that take place, and a report must be issued for each separate process.
- This site is used on all computers and operating systems.

- **Usability Requirements:-**

- The design of the interfaces and icons of the site should be simple and easy to use so that the user can interact with the site and learn to use it from the first time.

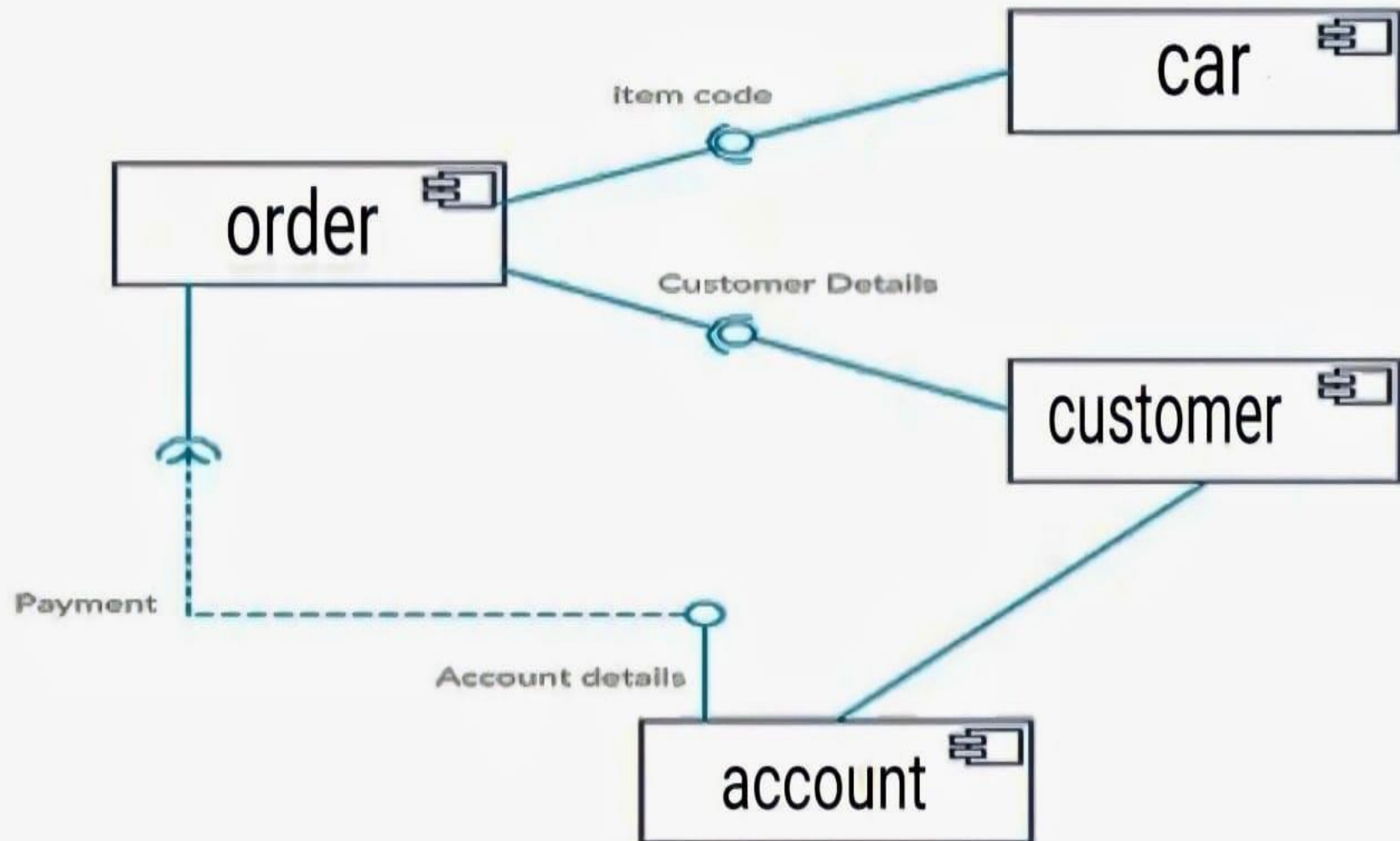
- **Availability Requirements:-**

- The site accommodates 1000 users at the same time.

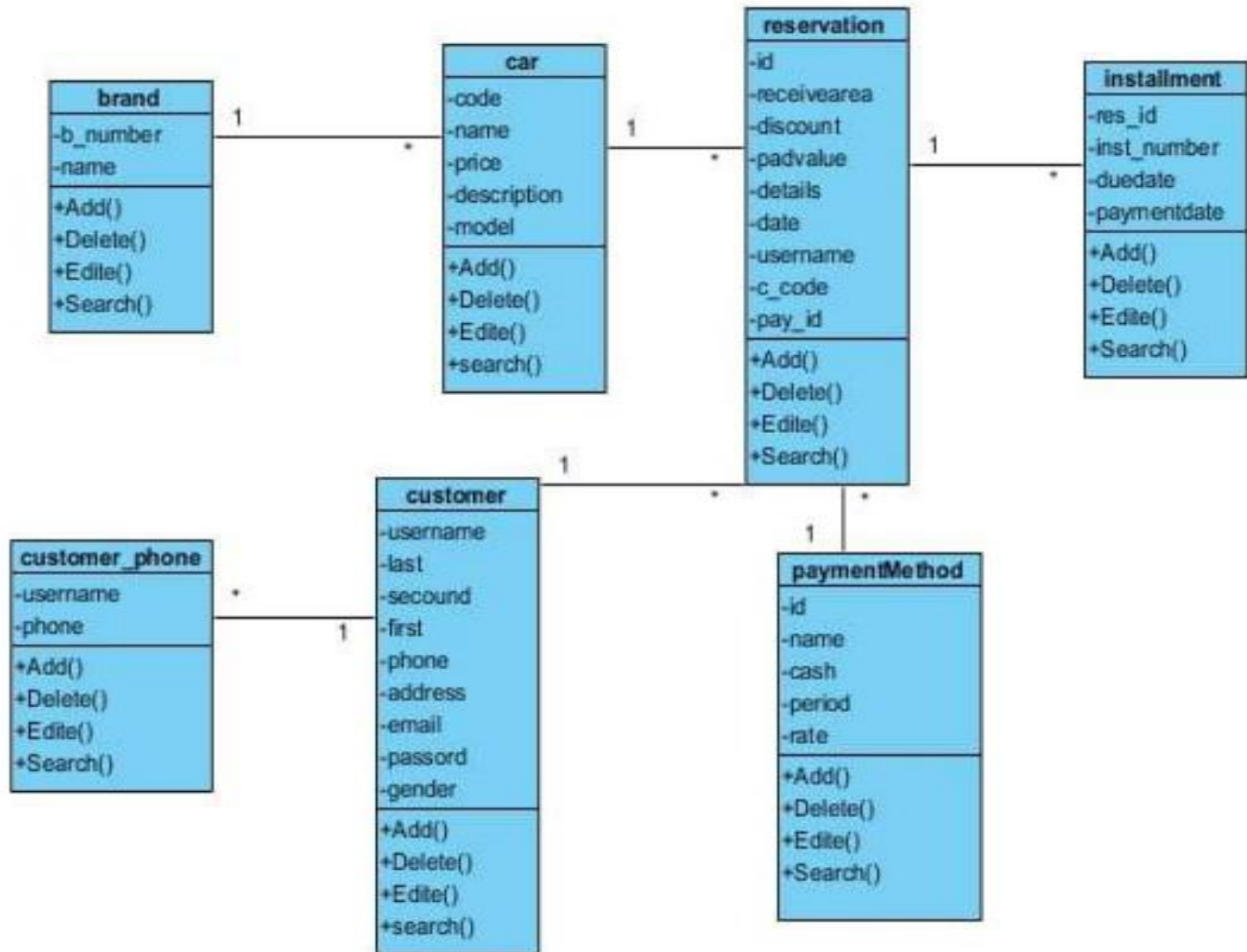
- **Security Requirements:-**

- The site must have the feature of keeping customer data and not sharing it with parties that do not have the right to use it or even steal it from the site.

Component Diagram

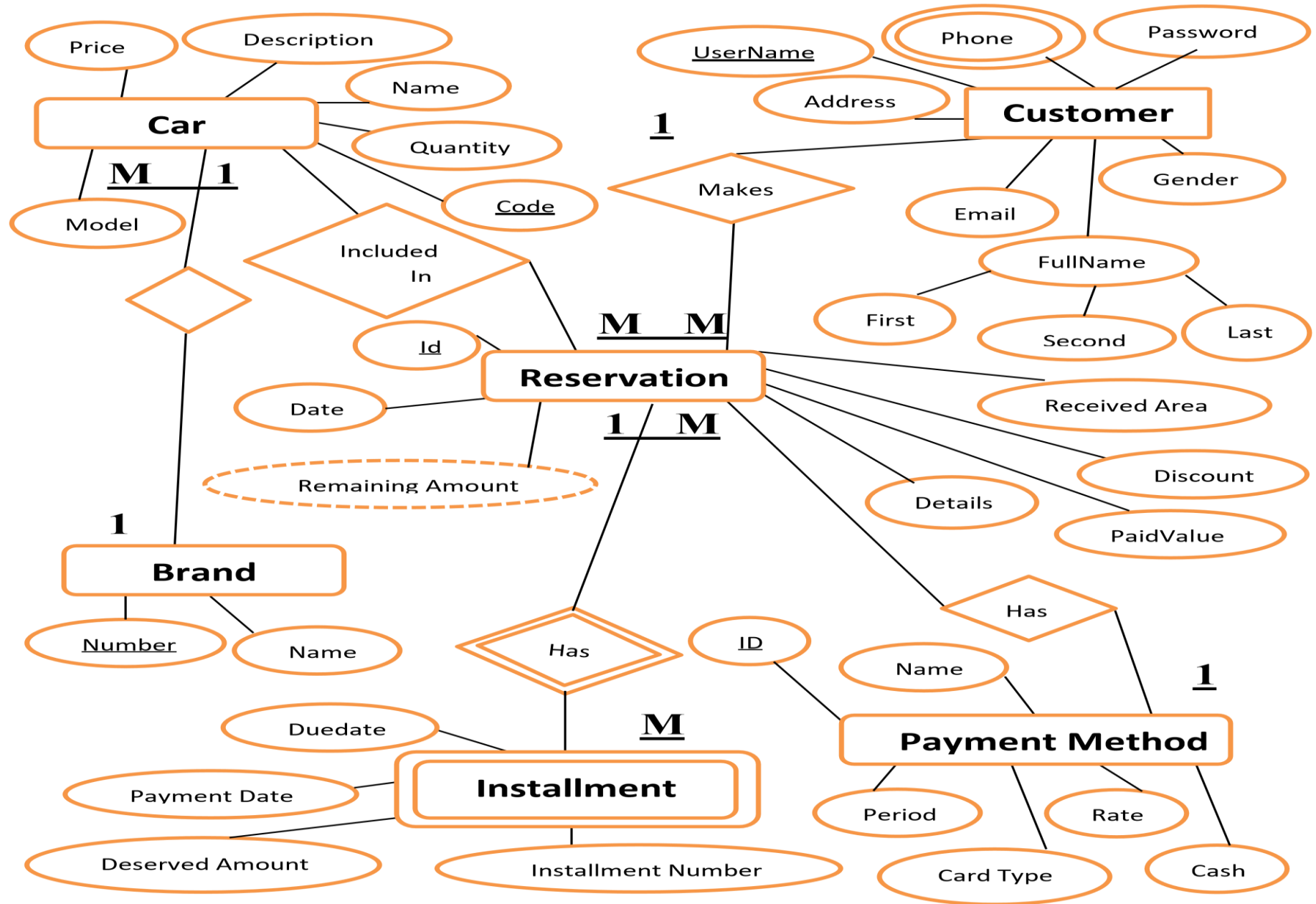


Class Diagram



Entity Relation Diagram

مخطط الكيان (ER) Entity Relation(ER)



Test Cases

Test Case Identifier	TC-1
Use Case Tested	UC-1
Pass/fail Criteria	The test passes if the customer enter a valid data for sign up process.
Input data	User data
Test Procedure	Expected Result
<u>Step1.</u> Customer will enter a valid data for sign up on website	system will show a message “Created Successfully”
Customer will enter a no valid data for sign up on website	system will show a message “enter a valid data”

Test Case Identifier	TC-1
Use Case Tested	UC-2
Pass/fail Criteria	The test passes if the customer enter a valid data for login process.
Input data	User data
Test Procedure	Expected Result
<u>Step1.</u> Customer will enter a valid data (user name & Password)	System will view the home page for the website
<u>Step2.</u> Customer enter a wrong user name	System will show the message” User Does not exist”
<u>Step3.</u> Customer enter a valid user name but wrong password	System will show the message “incorrect password ”

Test Case Identifier	TC-1
Use Case Tested	UC-3
Pass/fail Criteria	The test passes if the customer enter a valid data for edit property.
Input data	User data
Test Procedure	Expected Result
<u>Step1.</u> Customer enter a valid data for his name	System will show the message” invalid name”
<u>Step2.</u> Customer enter a valid data for his age	System will show the message” invalid age”
<u>Step2.</u> Customer enter a valid data for his mail	System will show the message” invalid mail”

Test Case Identifier	TC-1
Use Case Tested	UC-4
Pass/fail Criteria	The test passes if the customer enter a valid data for Change password property.
Input data	User data
Test Procedure	Expected Result
<u>Step1.</u> Customer enter a valid data for old password & Valid data for new password	System will show the message” password changed successfully”
<u>Step2.</u> Customer enter a valid data for old password & invalid data for new password	System will show the message” password must contain upper letter case and small letter case, numbers and special characters ”

Test Case Identifier	TC-2
Use Case Tested	UC-4
Pass/fail Criteria	The test passes if the customer enter a valid data for Change password property.
Input data	User data
Test Procedure	Expected Result
<u>Step1.</u> Customer enter an invalid data for old password & Valid data for new password	System will show the message” incorrect old password”
<u>Step2.</u> Customer enter an invalid data for old password & invalid data for new password	System will show the message” incorrect old password ”

Test Case Identifier	TC-1
Use Case Tested	UC-5
Pass/fail Criteria	The test passes if the customer choose one of the reasons for unsubscribe.
Input data	User data
Test Procedure	Expected Result
<u>Step1.</u> Customer will choose a valid reason for unsubscribe	System will show the message “unsubscribed successfully”
<u>Step2.</u> Customer will choose an invalid reason for unsubscribe	System will show the message” please choose one of these reasons ”

Test Case Identifier	TC-1
Use Case Tested	UC-8
Pass/fail Criteria	The test passes if the customer reserve the car successfully.
Input data	User data ,Car Data
Test Procedure	Expected Result
<u>Step1.</u> Customer will login to the website then choose a car to reserve with valid card	System will show the message “Reserved successfully”
<u>Step2.</u> Customer will login to the website then choose a car to reserve with invalid card	System will show the message” please enter a valid card number ”