Car Rental System Project

Deliverable #4

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Part 1:

a. The list of User Interfaces for each use case.

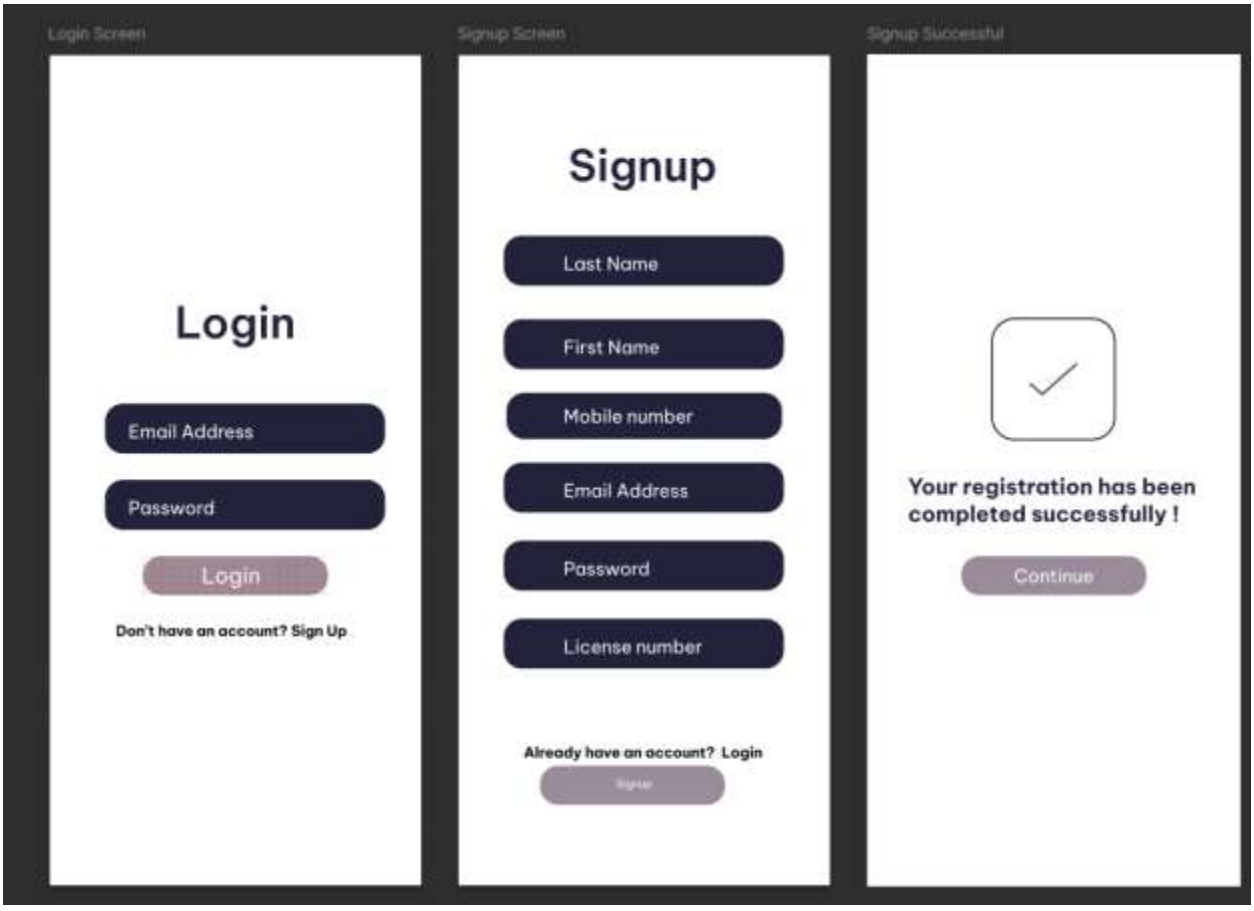
Use Case	User Interfaces
Customer Account Creation	Signup Screen Signup Successful Screen
Vehicle Search and Reservation	Home Screen Vehicle Reservation Screen Checkout Screen Order Confirmed Screen
Submit Feedback	Feedback Screen Completed Feedback Screen
Customer Reservation History Access	Profile Screen Order History Screen
Vehicle Pickup and Identity Verification	Fleet Verification Screen Fleet Confirmed Screen
Vehicle Return and Condition Logging	Same Fleet Verification and Fleet Confirmed Screens
Reporting and Analytics Generation	Menu Screen Expanded Menu Screen

b. The menu items in tabular format

Actor	Use Case	Subsystem
Customer	Customer account creation	User management
Customer	Vehicle search and reservation	Vehicle management
Customer	Submit feedback	Feedback management
Customer	Customer reservation history access	Reservation management
Customer Service Staff	Vehicle pickup and identity verification	Reservation management
Fleet Manger	Vehicle return and condition logging	Vehicle management
Admin	Reporting and analytics generation	Reporting and analytics

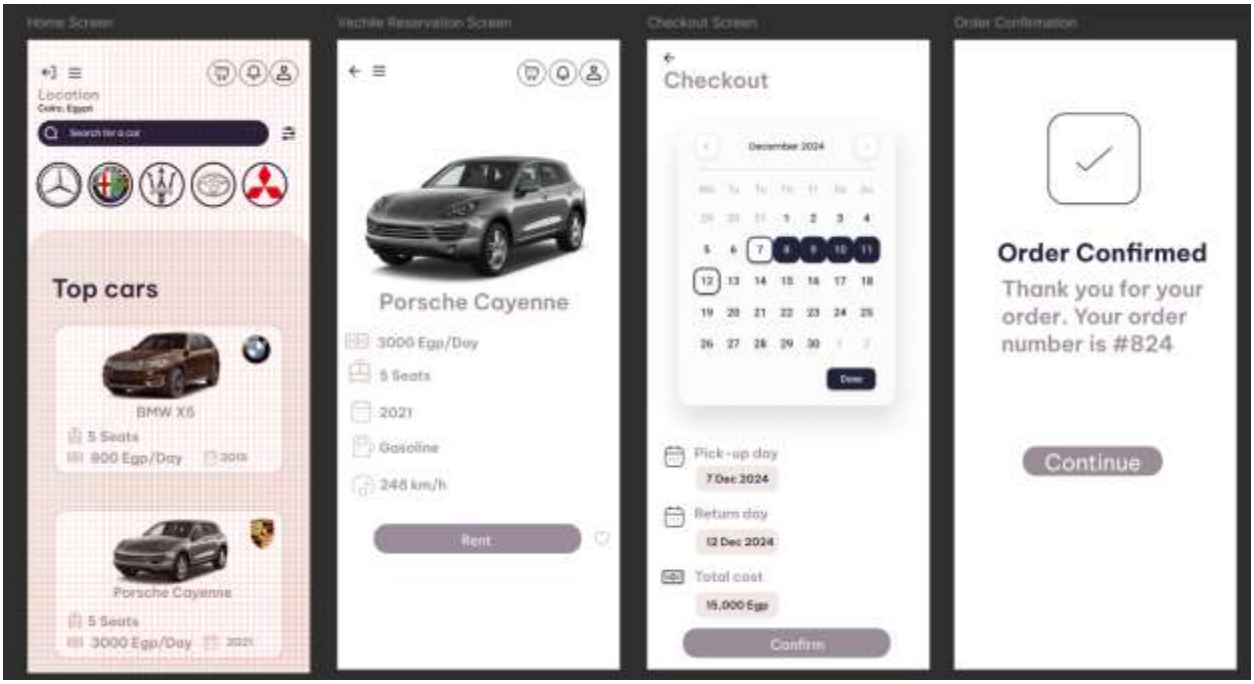
c. Storyboard for each use case

1. **Customer Account Creation**
2. Signup Screen: The customer fills in their information (first name, last name, email, password, license number).
3. Submit Form: User clicks on the "Signup" button.
4. Signup Successful Screen: A success message appears confirming the account creation.
5. Login Screen: when the user press continue on “Signup successful” he navigates to the login screen



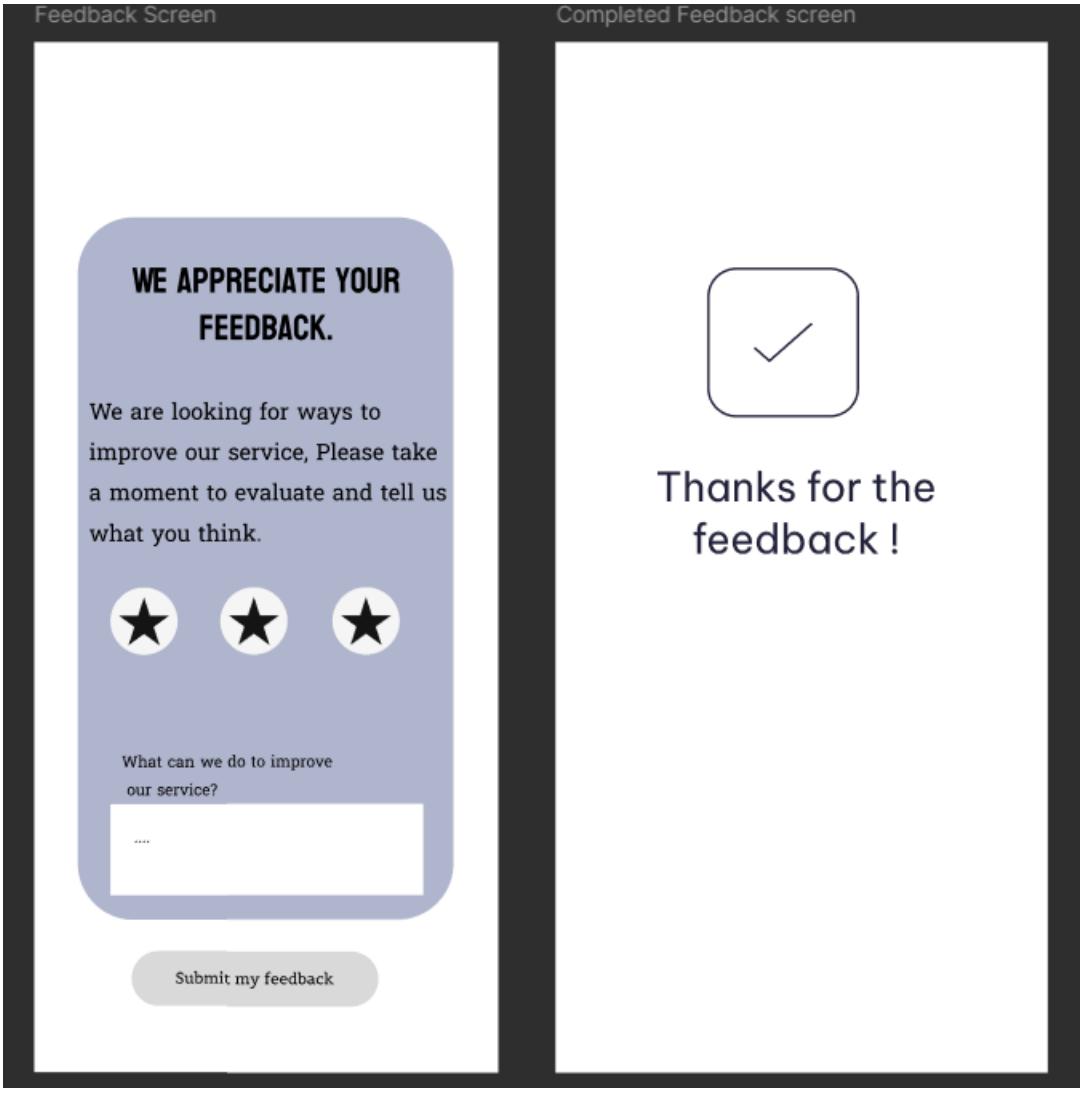
2. Vehicle Search and Reservation

1. Home Screen: User views available cars and selects one.
2. Vehicle Reservation Screen: User reviews the selected car's details.
3. Checkout Screen: User selects pickup/return dates and confirms the total cost.
4. Order Confirmed Screen: A success message with order number appears.



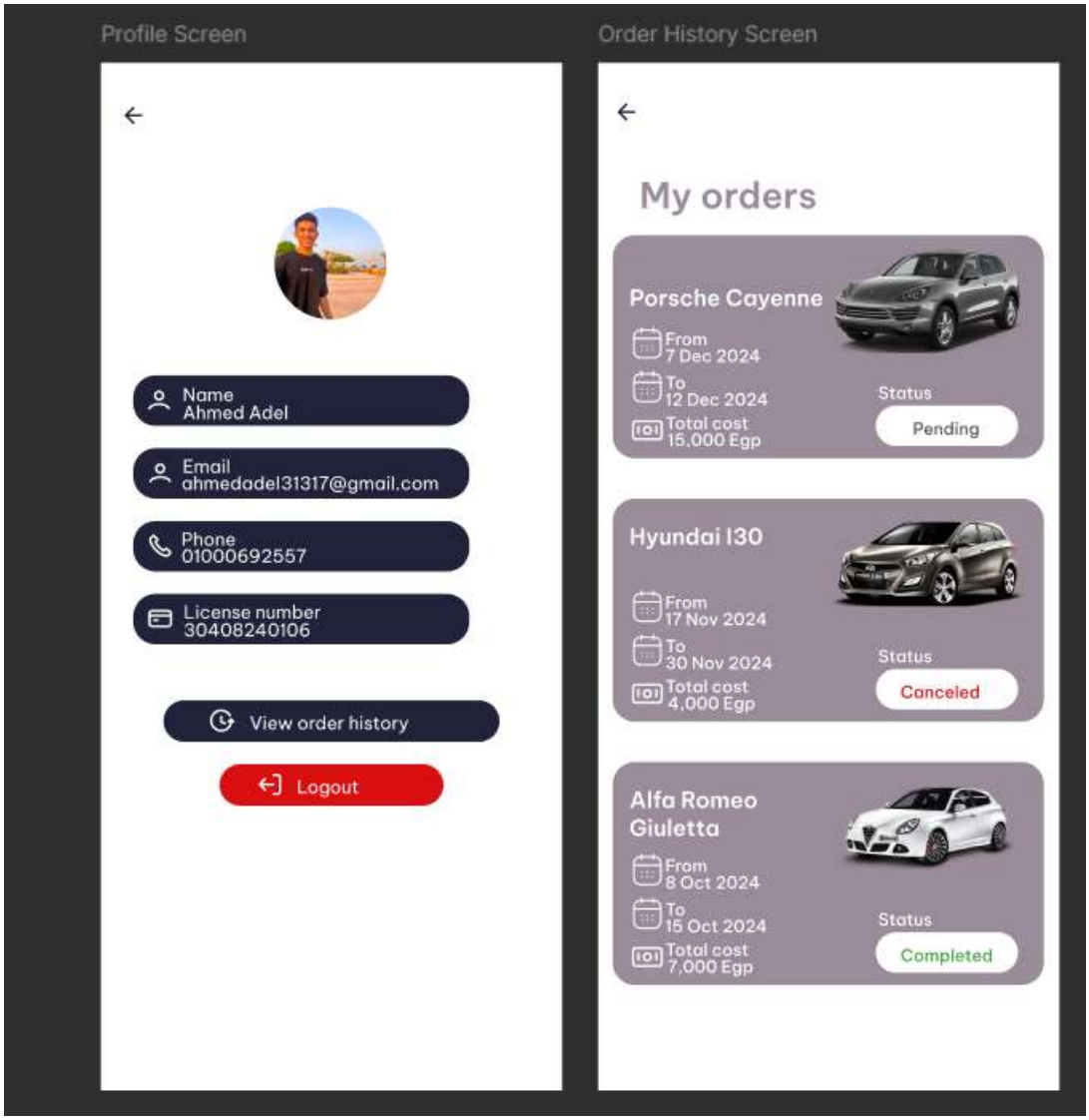
3. Submit Feedback

1. Feedback Screen: User provides their feedback and selects a star rating.
2. Submit Form: User clicks "Submit Feedback."
3. Completed Feedback Screen: A confirmation message, "Thanks for the feedback!" appears.



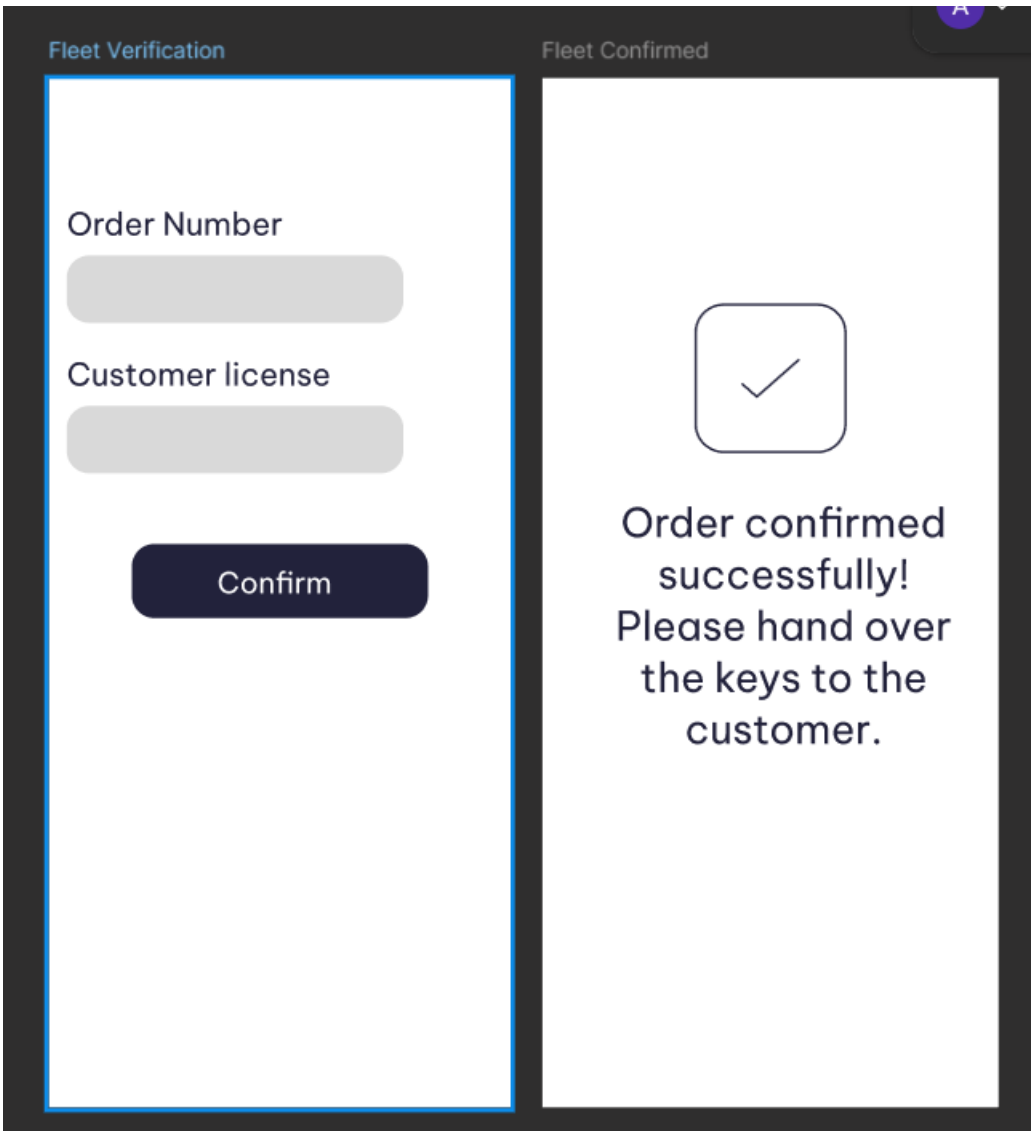
4. Customer Reservation History Access

1. Profile Screen: User clicks on "View Order History."
2. Order History Screen: A list of past reservations is displayed with statuses (e.g., pending, canceled).

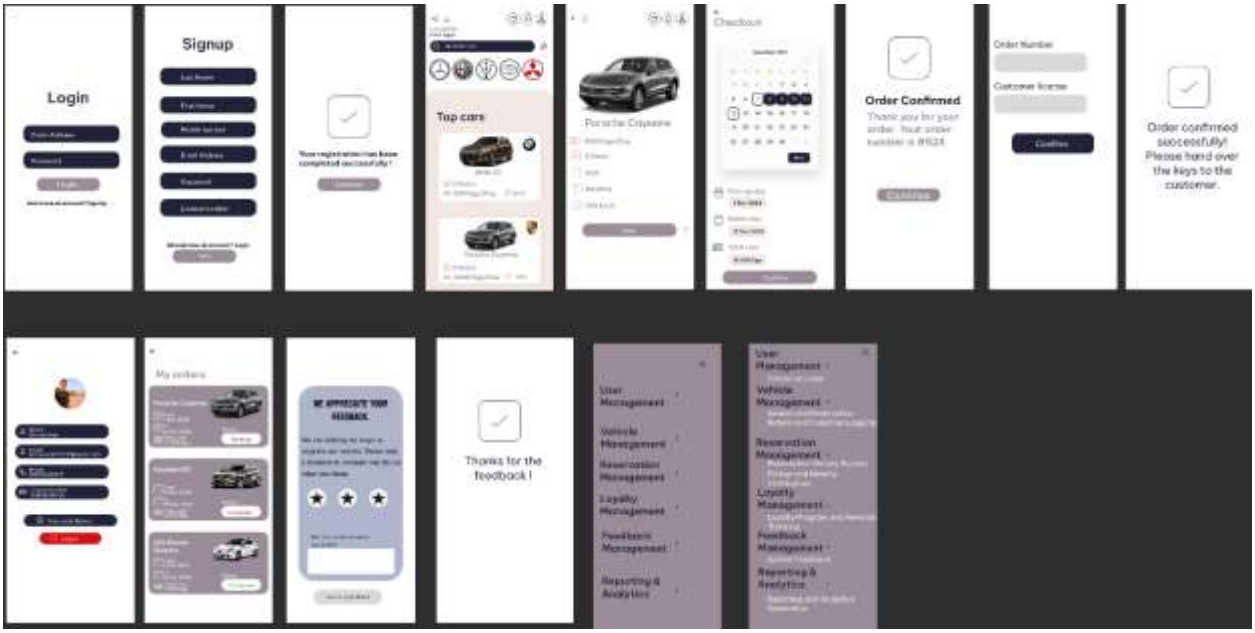


5. Vehicle Pickup and Identity Verification

1. Fleet Verification Screen: User enters order number and license details for verification.
2. Confirm: User clicks "Confirm."
3. Fleet Confirmed Screen: A success message appears instructing the fleet manager to give the car keys.



d. Ui Designs



Figma link: https://www.figma.com/design/6GFtd04S1y5b22ZqZdXaai/Car-Rental-System?node-id=0-1&t=bMr2XzyAjwEJWVqo-1

(Each screen's screenshot is attached in a separate file *"UI Designs" file*)

Part 2:

a. First cut

1-first cut

Step 1: identify classes

1-customer

2-feedback

3-loyalty points

4-fleet

5-vehicle

6-reservation

7-report

8-admin

9-account

Step 2: Determine Attributes and Data Types

1-customer

customerID int (key)

name string

contactInfo string

driverLicense string

2-reservation

reservationID int (key)

rentalPeriod string

rentalQuote float

status string

3-account

accountID int (key)

createdDate string

status string

4-feedback

feedbackID int (key)

comments string

rating int

5- loyalty points

pointsID int (key)

totalPoints int

expirationDate string

6-vehicle

vehicleID int (key)

type string

seatingCapacity int

price float

7-fleet

fleetID int (key)

vehicles list<Vehicle>

8-admin

adminID int (key)

role string

permissions string

9-report

reportID int (key)

reportType string

generatedDate string

Step 3: add methods

1-customer

createAccount()

viewReservation()

modifyAccount()

2- Reservation

createReservation()

modifyReservation()

cancelReservation()

3-account

activeAccount()

deleteAccount()

4- Feedback

submitFeedback()

editFeedback()

deleteFeedback()

5- LoyaltyPoints

adjustPoints()

clearPoints()

6-vehicle

searchVehicle()

updateStatus()

retireVehicle()

7- Fleet

addVehicleToFleet(vehicle)

updateFleetStatus()

8-admin

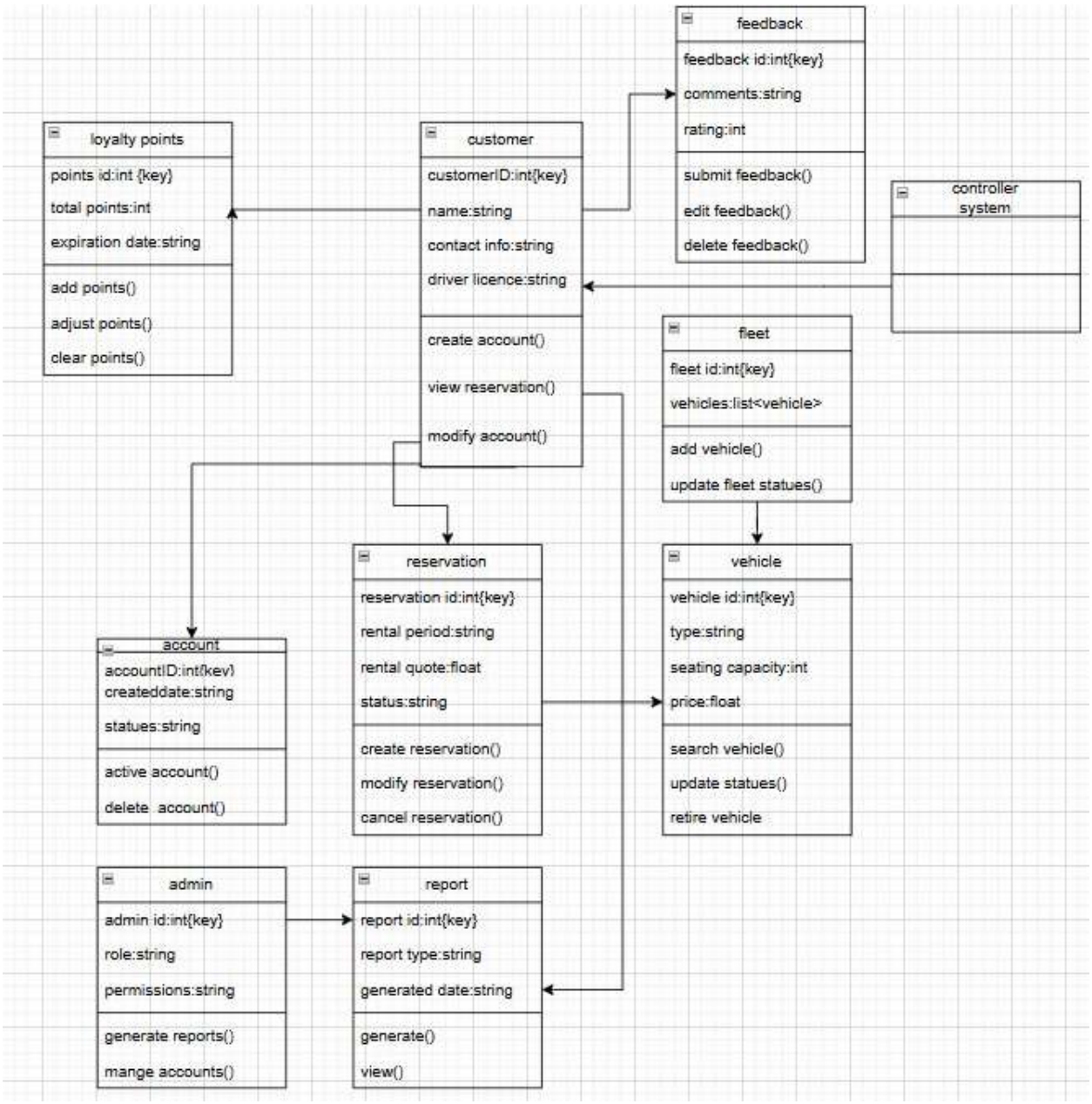
generateReports()

manageAccounts()

9-report

generate()

view()

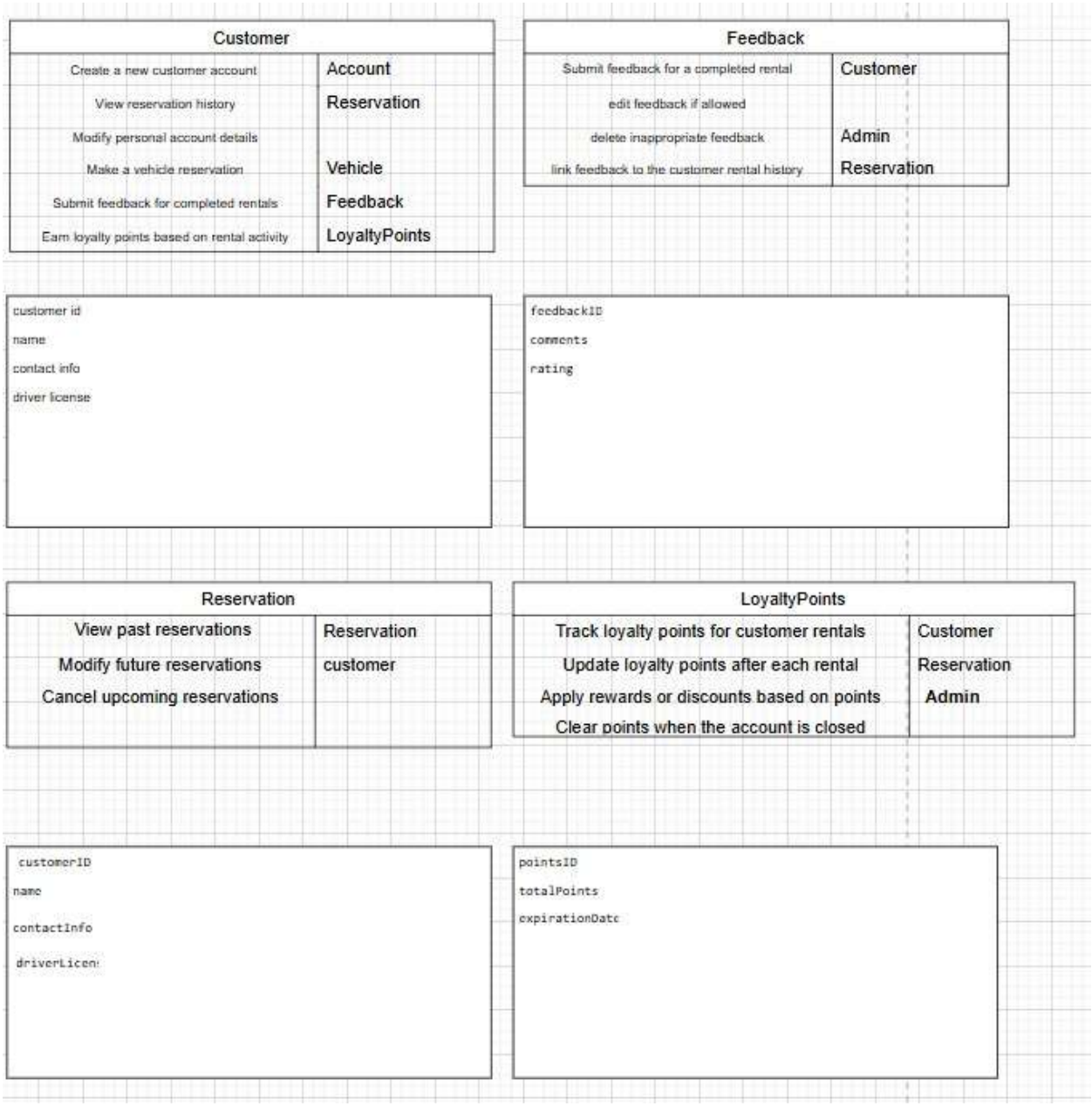

feedback
feedback id:int{key}
comments:string
rating:int
submit feedback()
edit feedback()
delete feedback()
loyalty points
points id:int {key}
total points:int
expiration date:string
add points()
adjust points()
clear points()
customer
customerID:int{key}
name:string
contact info:string
driver licence:string
create account()
view reservation()
modify account()
controller system
fleet
fleet id:int{key}
vehicles:list<vehicle>
add vehicle()
update fleet statues()
reservation
reservation id:int{key}
rental period:string
rental quote:float
status:string
create reservation()
modify reservation()
cancel reservation()
vehicle
vehicle id:int{key}
type:string
seating capacity:int
price:float
search vehicle()
update statues()
retire vehicle
account
accountID:int{kev}
createddate:string
statues:string
active account()
delete account()
admin
admin id:int{key}
role:string
permissions:string
generate reports()
mange accounts()
report
report id:int{key}
report type:string
generated date:string
generate()
view()

b. Use cases classification

Use Case	Classification	Reasoning
Customer Account Creation	Simple	Single actor, straightforward data entry and confirmation process
Vehicle Search and Reservation	Moderate	Multiple steps (search, filter, select)
Vehicle Pickup and Identity Verification	Moderate	Involves identity verification, reservation check, and potential discrepancies
Vehicle Return and Condition Logging	Complex	Involves inspection, logging conditions, and updating maintenance records
Feedback Submission	Simple	Single actor, minimal steps
Loyalty Program and Rewards Tracking	Simple	Requires tracking points
Customer Reservation History Access	Simple	Straightforward retrieval of past reservations
Reporting and Analytics Generation	Complex	Involves data aggregation, report generation, and analysis for decision-making

c. CRC

4.


Customer
Create a new customer account
Account
View reservation history
Reservation
Modify personal account details
Make a vehicle reservation
Vehicle
Submit feedback for completed rentals
Feedback
Earn loyalty points based on rental activity
LoyaltyPoints
customer id
name
contact info
driver license
Feedback
Submit feedback for a completed rental
Customer
edit feedback if allowed
delete inappropriate feedback
Admin
link feedback to the customer rental history
Reservation
feedbackID
comments
rating
Reservation
View past reservations
Reservation
Modify future reservations
customer
Cancel upcoming reservations
customerID
name
contactInfo
driverLicen
LoyaltyPoints
Track loyalty points for customer rentals
Customer
Update loyalty points after each rental
Reservation
Apply rewards or discounts based on points
Admin
Clear points when the account is closed
pointsID
totalPoints
expirationDatc