

Car Rental System

Deliverable#2

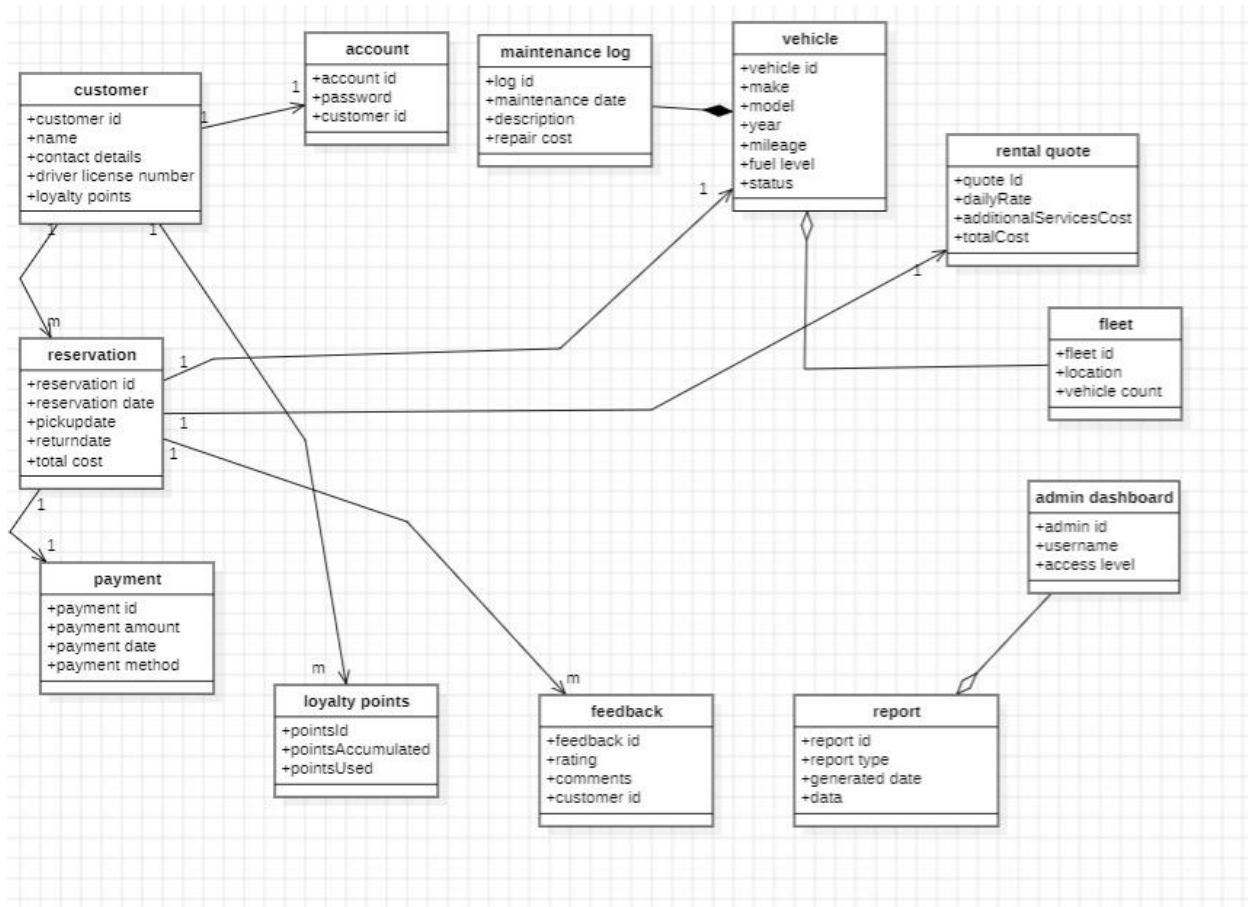
- Ahmed Adel 22-101252
- Ahmed Badr 22-101101
- Amr Azazy 22-101237
- Hazem Amer 22-101105

Tabular Representation

NOUN	NOTES ON NOUN	decision
customer	The person who rents the car and deals with the system	i

Account	The profile that stores customer personal info	i
Reservation	The booking made by customer for a vehicle, which include information about the car and period rented	i
Vehicle	The car being rented	i
Rental Quote	The estimated cost for renting the vehicle	i
Service Fees	Additional charges	e
Rental Period	The duration for which the vehicle is reserved	e
Payment	The physical transaction that occurs at the office when the customer pays for the rental	i
Vehicle Pickup	customer collects the vehicle from the rental office	e
Identification	The customer's identification verified at the time of vehicle pickup	e
Vehicle Condition	The condition of the vehicle at the time of pickup and return	e
Mileage	The distance traveled by the vehicle during the rental period	e
Fuel Level	The fuel level of the vehicle when returned	e
Late Charges	Charges for returning the vehicle after the agreed-upon time	e
Damage Charges	Charges for any damage to the vehicle during the rental period	e
Final Receipt	The document issued after the vehicle return that summarizes the charges	e
Fleet	The collection of vehicles available	i
Fleet Management System	The system that manages the availability	e
Maintenance Schedule	The plan for routine maintenance	e
Maintenance Log	The record of completed maintenance tasks for each vehicle	i
Repair	Maintenance work done on a vehicle to fix damage or mechanical issues	e
Service History	The record of all repairs and maintenance performed on each vehicle	e
Vehicle Availability	The status of whether a vehicle is available for rental	e
Customer Profile	A record of a customer's personal details	e
Rental History	A record of past rentals made by the customer	e
Feedback	Customer feedback related to their rental experience	e
Loyalty Points	Points awarded to customers based on rental activity	i
Promotion	Discounts or special offers provided to customers	e
Recommendation	Suggestions made to customers based on their rental history	e
Additional Service	Extra services requested by the customer, such as GPS devices, child seats, or roadside assistance	e
Service Availability	The availability of additional services at the time of vehicle pickup	e
Service Fee	The additional charge for providing a service	e
Admin Dashboard	The interface for Rent-a-Ride administrators to view and manage system data and generate reports	i
Vehicle Utilization Report	A report that tracks the usage of vehicles	e
Customer Trends Report	A report that tracks customer behaviors	e
Revenue Report	A financial report that tracks income from rentals	e
Feedback Report	A summary of customer feedback	e

UML Diagram



Use Cases and CRUD Technique

CRUD Verification for the use cases

Domain Class	CRUD Operation	Use Case
Customer	C	Customer Account Creation
	R	Customer Reservation History Access, Loyalty Program Tracking
	U	Customer Account Modification
	D	Account deletion by admin or on request
Vehicle	C	Vehicle Fleet Registration
	R	Vehicle Search and Reservation, Reporting
	U	Update status during return, maintenance
	D	Retire a vehicle from fleet
Reservation	C	Vehicle Search and Reservation
	R	Customer Reservation History Access, Pickup/Return Verification
	U	Modify or extend reservation details
	D	Cancel reservation
Feedback	C	Feedback Submission
	R	Reporting and Analytics, Admin Review
	U	Allow minor edits if enabled
	D	Admin deletes inappropriate feedback
Loyalty Points	C	Loyalty Program Tracking
	R	View loyalty points, Reporting and Analytics
	U	Adjust points
	D	Clear points if account is closed

CRUD Analysis Result: Use Case / Domain Class Matrix

Use Case vs. Domain Class	Customer	Vehicle	Reservation	Feedback	Loyalty Points
Customer Account Creation	C/R/U				
Vehicle Search and Reservation	R	R	C		
Vehicle Pickup and Identity Verification	R	R	R		
Vehicle Return and Condition Logging	R	U	R		
Feedback Submission	R			C	
Loyalty Program Tracking	R				C/R/U
Reservation History Access	R/U		R		R
Reporting and Analytics Generation	R	R	R	R	R