

CaseStudy- SQL and JAVA

Car Connect

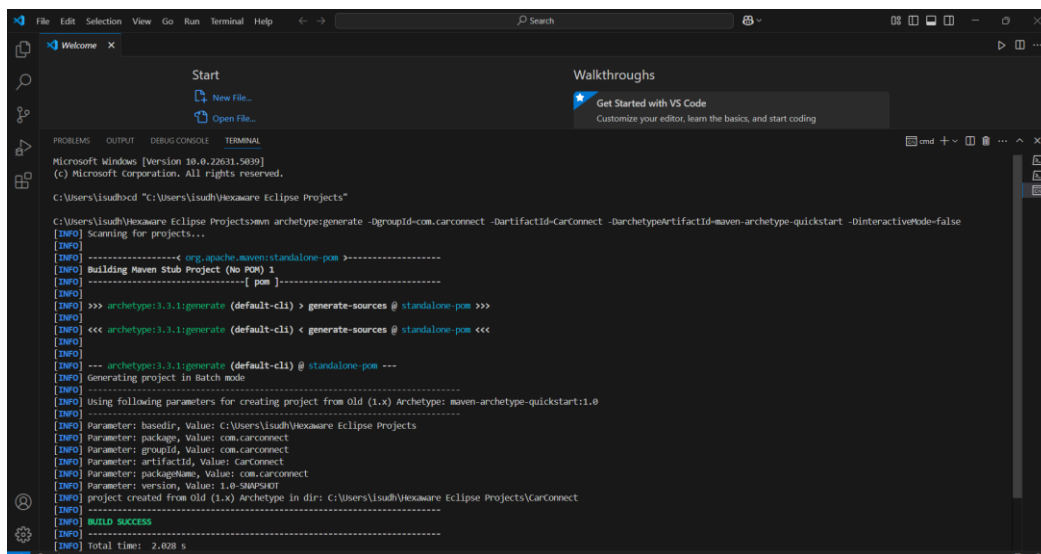
Git Link - https://github.com/Sudharsana2003/Java_Coding_Challenge

Name - Sudharsana I

Prefix ID – J321

Project Structure Creation

Maven Project



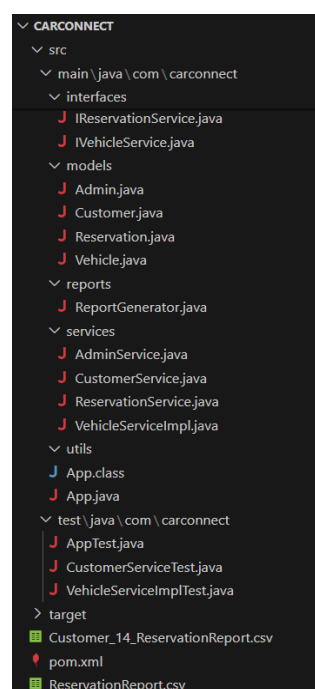
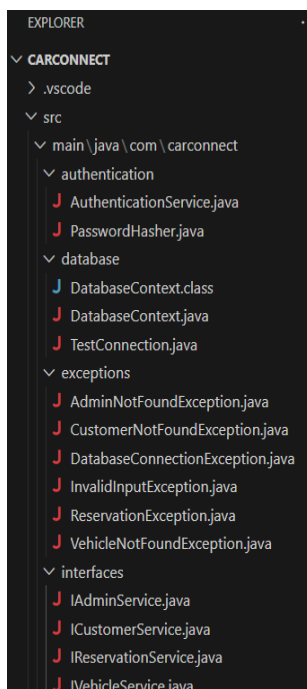
```
Microsoft Windows [Version 10.0.22631.5839]
(c) Microsoft Corporation. All rights reserved.

C:\Users\isudh>cd "C:\Users\isudh\Hexaware Eclipse Projects"

C:\Users\isudh\Hexaware Eclipse Projects>mvn archetype:generate -DgroupId=com.carconnect -DartifactId=CarConnect -DarchetypeArtifactId=maven-archetype-quickstart -DinteractiveMode=false
[INFO] Scanning for projects...
[INFO] -----< org.apache.maven:standalone-pom >-----
[INFO] Building Maven Stub Project (No POM) 1
[INFO] -----[ pom ]-----
[INFO] >>> archetype:1.3.1:generate (default-cli) > generate-sources @ standalone-pom >>>
[INFO] <<< archetype:1.3.1:generate (default-cli) < generate-sources @ standalone-pom <<<
[INFO]
[INFO] --- archetype:1.3.1:generate (default-cli) @ standalone-pom ---
[INFO] Generating project in Batch mode
[INFO] -----
[INFO] Using following parameters for creating project from Old (1.x) Archetype: maven-archetype-quickstart:1.0
[INFO] -----
[INFO] Parameter: basedir, Value: C:\Users\isudh\Hexaware Eclipse Projects
[INFO] Parameter: package, Value: com.carconnect
[INFO] Parameter: groupId, Value: com.carconnect
[INFO] Parameter: artifactId, Value: CarConnect
[INFO] Parameter: packageName, Value: com.carconnect
[INFO] Parameter: version, Value: 1.0-SNAPSHOT
[INFO] project created from Old (1.x) Archetype in dir: C:\Users\isudh\Hexaware Eclipse Projects\CarConnect
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 2.628 s
```

Task :

Overall Project Structure:



Database

Initial

Customer:

```
mysql> select * from customer;
```

CustomerID	FirstName	LastName	Email	PhoneNumber	Address	Username	Password	RegistrationDate
1	UpdatedFirstName	UpdatedLastName	updated@example.com	1234567890	101 MG Road, Mumbai, Maharashtra	updatedUsername	updatedPassword	2024-01-05
2	Priya	Verma	priyaverna@gmail.com	9765432109	202 Rajaji St, Chennai, Tamil Nadu	priyaverna	hashedpassword2	2024-02-10
3	Rahul	Nair	rahulnair@gmail.com	9654321098	305 MG Road, Bangalore, Karnataka	rahulnair	hashedpassword3	2024-03-15
4	Sneha	Patel	snehapatel@gmail.com	9543210987	509 Park St, Ahmedabad, Gujarat	snehapatel	hashedpassword4	2024-04-20
5	Vikram	Singh	vikramsingh@gmail.com	9432109876	710 Hall Road, New Delhi	vikramsingh	hashedpassword5	2024-05-05
6	Ananya	Reddy	ananyareddy@gmail.com	9321098765	88 Jubilee Hills, Hyderabad, Telangana	ananyareddy	hashedpassword6	2024-06-12
7	Rajesh	Kumar	rajeshkumar@gmail.com	9210987654	303 Nehru Nagar, Pune, Maharashtra	rajeshkumar	hashedpassword7	2024-07-18
8	Meera	Joshi	meerajoshi@gmail.com	9109876543	45 Civil Lines, Jaipur, Rajasthan	meerajoshi	hashedpassword8	2024-08-22
9	Suresh	Yadav	surushyadav@gmail.com	9098765432	90 Anna Nagar, Coimbatore, Tamil Nadu	surushyadav	hashedpassword9	2024-09-30
10	Kavya	Mehta	kavyamehta@gmail.com	8987654321	12 Residency Rd, Kolkata, West Bengal	kavyamehta	hashedpassword10	2024-10-15
14	Kaladevi	Bala	1123@gmail.com	9874563214	K R nagar	kala	\$2a\$12\$gFCYgnhLR0kc04p2NgJfM0oYRoSxLuzA00..sN81IzHvVmdJ6IKnm	2025-04-10

11 rows in set (0.00 sec)

Admin:

```
mysql> select * from admin;
```

AdminID	FirstName	LastName	Email	PhoneNumber	Username	Password	Role	JoinDate
1	Arjun	Iyer	arjuni@gmail.com	9876543211	arjun_admin	hashedadminpass1	Super Admin	2022-01-01
2	Neha	Kohli	nehakohli@gmail.com	9765432108	neha_ops	hashedadminpass2	Operations Manager	2023-02-10
3	Sandeep	Menon	sandeepm@gmail.com	9654321097	sandeep_fleet	hashedadminpass3	Fleet Manager	2023-03-15
4	Ritika	Das	ritikadas@gmail.com	9543210986	ritika_sales	hashedadminpass4	Sales Manager	2023-04-20
6	Pooja	Singh	poojasingh@gmail.com	9321098764	pooja_finance	hashedadminpass6	Finance Manager	2023-06-30
7	Ankit	Sharma	ankitsharma@gmail.com	9210987653	ankit_hr	hashedadminpass7	HR Manager	2023-07-15
8	Meenal	Gupta	meenalgupta@gmail.com	9109876542	meenal_security	hashedadminpass8	Security Head	2023-08-10
9	Ritin	Rao	ritinrao@gmail.com	9098765431	ritin_tech	hashedadminpass9	Tech Lead	2023-09-05
10	Swati	Verna	swativerna@gmail.com	8987654320	swati_quality	hashedadminpass10	Quality Manager	2023-10-20
13	surachita	inbakumar	1234@edu.in	79631458	sura	\$2a\$12\$e8mHh60ziYtZbLkLBQFju.UFNuwb0MRFBhJWSUtzrqhs/1L2XssG	Super Admin	2025-04-10

10 rows in set (0.00 sec)

Vehicle:

```
mysql> select * from vehicle;
```

VehicleID	Model	Make	Year	Color	RegistrationNumber	Availability	DailyRate
1	City	Honda	2023	White	TN11VY2222	0	950.00
2	City	Honda	2021	Black	TN07CD5678	1	1500.00
3	i20	Hyundai	2020	Blue	KA05EF9012	0	1100.00
4	Scorpio	Mahindra	2023	Red	DL02GH3456	1	1800.00
5	Fortuner	Toyota	2022	Silver	GJ03IJ7890	0	2500.00
6	Nexon	Tata	2021	Grey	TS04KL4321	1	1300.00
7	Verna	Hyundai	2020	Maroon	RJ05MN8765	1	1400.00
8	Baleno	Maruti Suzuki	2022	White	WB06OP6543	0	1250.00
9	Innova	Toyota	2019	Black	KL07QR3210	1	2000.00
10	Ertiga	Maruti Suzuki	2023	Blue	AP08ST9876	1	1600.00
11	Sedan	Toyota	2023	NULL	ABC-123	1	50.00
14	Swift	Maruti	2022	NULL	TN01ZZ9999	1	850.00
17	Swift	Maruti	2022	NULL	Updated TN01ZZ9999	1	850.00

13 rows in set (0.00 sec)

Reservation:

```
mysql> select * from reservation;
```

ReservationID	CustomerID	VehicleID	StartDate	EndDate	TotalCost	Status
1	1	1	2024-01-10 09:00:00	2024-01-15	6000.00	Confirmed
2	2	2	2024-02-12 10:00:00	2024-02-14	3000.00	Pending
3	3	3	2024-03-05 08:00:00	2024-03-07	2200.00	Completed
4	4	4	2024-04-08 11:00:00	2024-04-12	7200.00	Pending
5	5	5	2024-05-15 09:30:00	2024-05-20	12500.00	Confirmed
6	6	6	2024-06-22 12:00:00	2024-06-25	3900.00	Pending
7	7	7	2024-07-01 07:00:00	2024-07-03	2800.00	Completed
8	8	8	2024-08-10 10:30:00	2024-08-12	2500.00	Confirmed
9	9	9	2024-09-18 06:00:00	2024-09-22	8000.00	Pending
10	10	10	2024-10-25 08:00:00	2024-10-30	9600.00	Confirmed
11	10	5	2025-10-10 00:00:00	2025-10-12	2000.00	Pending
12	14	14	2025-03-03 00:00:00	2025-03-06	3400.00	Confirmed

12 rows in set (0.00 sec)

Output:

LOGIN CREDENTIALS

1.Customer

```
PS C:\Users\isudh\eclipse-workspace-hexaware\CarConnect> c::; cd 'c:\Users\isudh\eclipse-workspace-hexaware\CarConnect'
in\java.exe' '@C:\Users\isudh\AppData\Local\Temp\cp_awvugizlmxwgi6ts9gddnlesl.argfile' 'com.carconnect.App'
-----Welcome to Sudharsana CarConnect-----
Login as:
1. Customer
2. Admin
3. Exit CarConnect
Enter your choice (1, 2, or 3): 1
Enter username: kala
Enter password: kala123
Login successful as customer: kala

----- Sudharsana CarConnect Menu -----
1. View My Profile
2. Make Reservation
3. View My Reservations
4. Cancel My Reservation
5. View All Vehicles
6. Update My Profile
7. Delete My Account
8. View Profile by ID
9. View Profile by Username
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
```

2.Admin

```
13. Logout
Enter your choice: 13
Logged out successfully.
-----Welcome to Sudharsana CarConnect-----
Login as:
1. Customer
2. Admin
3. Exit CarConnect
Enter your choice (1, 2, or 3): 2
Enter username: sura
Enter password: sura123
Login successful as admin: sura
```

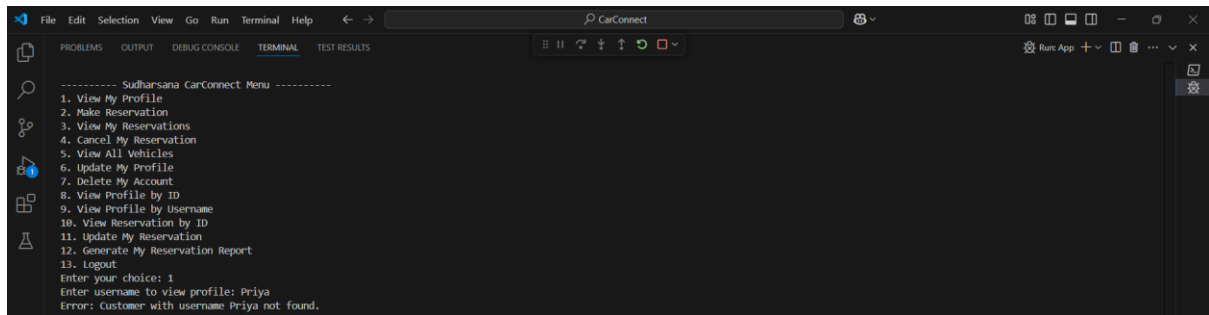
3.Exit

```
Logged out successfully.
-----Welcome to Sudharsana CarConnect-----
Login as:
1. Customer
2. Admin
3. Exit CarConnect
Enter your choice (1, 2, or 3): 3
-----Thank you for using Sudharsana CarConnect-----
```

Customer Menu – Role Based Access

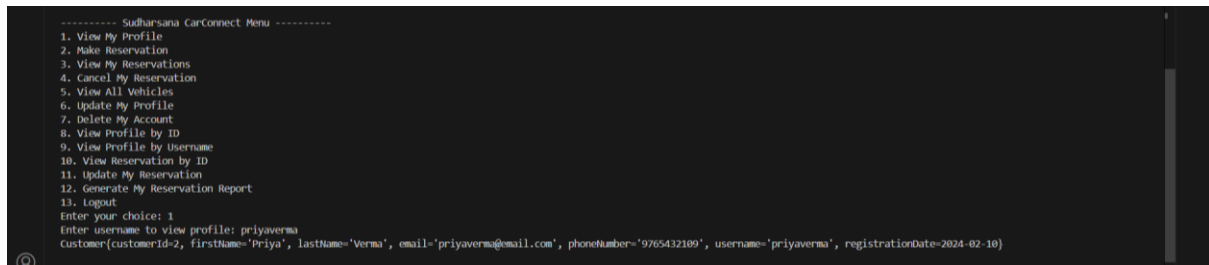
1. View My Profile

Customer Not found:



```
----- Sudharsana CarConnect Menu -----
1. View My Profile
2. Make Reservation
3. View My Reservations
4. Cancel My Reservation
5. View All Vehicles
6. Update My Profile
7. Delete My Account
8. View Profile by ID
9. View Profile by Username
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
Enter your choice: 1
Enter username to view profile: Priya
Error: Customer with username Priya not found.
```

Customer Retrival using username



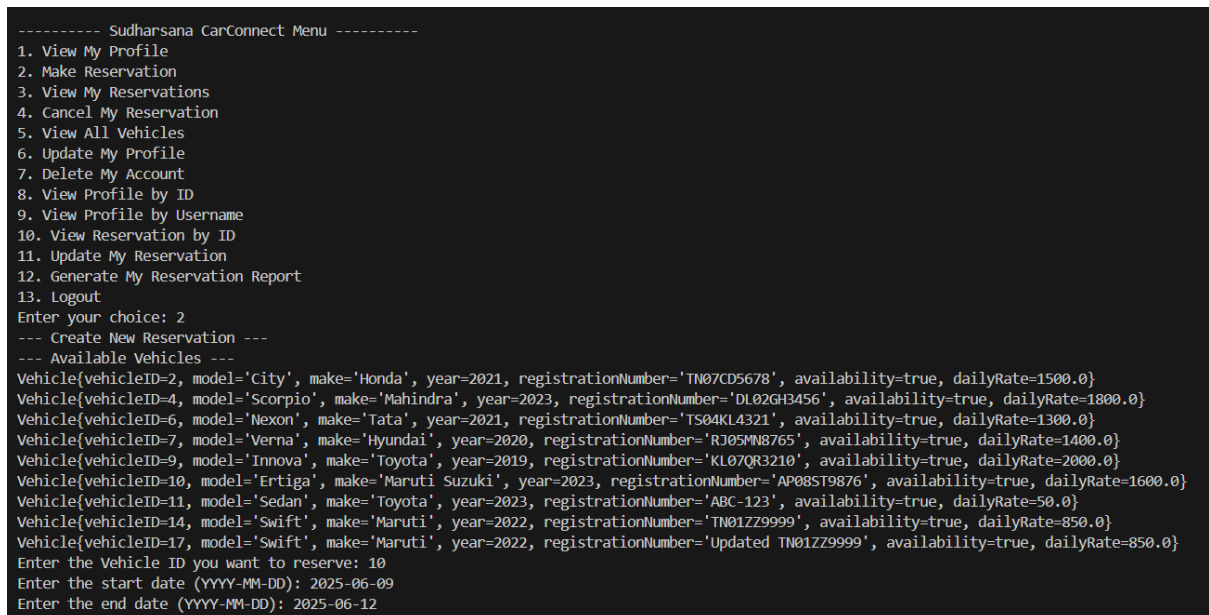
```
----- Sudharsana CarConnect Menu -----
1. View My Profile
2. Make Reservation
3. View My Reservations
4. Cancel My Reservation
5. View All Vehicles
6. Update My Profile
7. Delete My Account
8. View Profile by ID
9. View Profile by Username
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
Enter your choice: 1
Enter username to view profile: priyavarma
Customer{customerId=2, firstName='Priya', lastName='Verma', email='priyavarma@gmail.com', phoneNumber='9765432109', username='priyavarma', registrationDate=2024-02-10}
```

2. Make Reservation

Covers the below:

2.1 List of Available vehicles

2.2 VehicleID is asked to user



```
----- Sudharsana CarConnect Menu -----
1. View My Profile
2. Make Reservation
3. View My Reservations
4. Cancel My Reservation
5. View All Vehicles
6. Update My Profile
7. Delete My Account
8. View Profile by ID
9. View Profile by Username
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
Enter your choice: 2
--- Create New Reservation ---
--- Available Vehicles ---
Vehicle{vehicleID=2, model='City', make='Honda', year=2021, registrationNumber='TN07CD5678', availability=true, dailyRate=1500.0}
Vehicle{vehicleID=4, model='Scorpio', make='Mahindra', year=2023, registrationNumber='DL02GH3456', availability=true, dailyRate=1800.0}
Vehicle{vehicleID=6, model='Nexon', make='Tata', year=2021, registrationNumber='TS04KL4321', availability=true, dailyRate=1300.0}
Vehicle{vehicleID=7, model='Verna', make='Hyundai', year=2020, registrationNumber='RJ05MN8765', availability=true, dailyRate=1400.0}
Vehicle{vehicleID=9, model='Innova', make='Toyota', year=2019, registrationNumber='KL07QR3210', availability=true, dailyRate=2000.0}
Vehicle{vehicleID=10, model='Ertiga', make='Maruti Suzuki', year=2023, registrationNumber='AP08ST9876', availability=true, dailyRate=1600.0}
Vehicle{vehicleID=11, model='Sedan', make='Toyota', year=2023, registrationNumber='ABC-123', availability=true, dailyRate=50.0}
Vehicle{vehicleID=14, model='Swift', make='Maruti', year=2022, registrationNumber='TN01ZZ9999', availability=true, dailyRate=850.0}
Vehicle{vehicleID=17, model='Swift', make='Maruti', year=2022, registrationNumber='Updated TN01ZZ9999', availability=true, dailyRate=850.0}
Enter the Vehicle ID you want to reserve: 10
Enter the start date (YYYY-MM-DD): 2025-06-09
Enter the end date (YYYY-MM-DD): 2025-06-12
```

Covers the below:

2.3 Start Date and End Date

2.4 Details

2.5 Status

2.6 Confirmation

```
--- Reservation Details ---
Vehicle Model: Maruti Suzuki Ertiga
Start Date: 2025-06-09
End Date: 2025-06-12
Rental Days: 4
Total Cost: 6400.00
Available Reservation Statuses: Pending, Confirmed, Completed
Enter the desired reservation status: Completed
Confirm reservation with status 'Completed'? (yes/no): yes
Reservation created successfully with status 'Completed'. Reservation ID will be assigned.
```

3. View My Reservations

Now lets view the above for the user with

CustomerID – 14

UserName- Priyaverma

```
----- Sudharsana CarConnect Menu -----
1. View My Profile
2. Make Reservation
3. View My Reservations
4. Cancel My Reservation
5. View All Vehicles
6. Update My Profile
7. Delete My Account
8. View Profile by ID
9. View Profile by Username
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
Enter your choice: 3
--- Your Reservations ---
Reservation(reservationID=12, customerID=14, vehicleID=14, startDate=2025-03-03 00:00:00.0, endDate=2025-03-06, totalCost=3400.0, status='Confirmed')
Reservation(reservationID=13, customerID=14, vehicleID=10, startDate=2025-06-09 00:00:00.0, endDate=2025-06-12, totalCost=6400.0, status='Completed')
```

Check the table

```
mysql> select * from reservation;
+-----+-----+-----+-----+-----+-----+-----+
| ReservationID | CustomerID | VehicleID | StartDate | EndDate | TotalCost | Status |
+-----+-----+-----+-----+-----+-----+-----+
| 1 | 1 | 1 | 2024-01-10 09:00:00 | 2024-01-15 | 6000.00 | Confirmed |
| 2 | 2 | 2 | 2024-02-12 10:00:00 | 2024-02-14 | 3000.00 | Pending |
| 3 | 3 | 3 | 2024-03-05 08:00:00 | 2024-03-07 | 2200.00 | Completed |
| 4 | 4 | 4 | 2024-04-08 11:00:00 | 2024-04-12 | 7200.00 | Pending |
| 5 | 5 | 5 | 2024-05-15 09:30:00 | 2024-05-20 | 12500.00 | Confirmed |
| 6 | 6 | 6 | 2024-06-22 12:00:00 | 2024-06-25 | 3900.00 | Pending |
| 7 | 7 | 7 | 2024-07-01 07:00:00 | 2024-07-03 | 2800.00 | Completed |
| 8 | 8 | 8 | 2024-08-10 10:30:00 | 2024-08-12 | 2500.00 | Confirmed |
| 9 | 9 | 9 | 2024-09-18 06:00:00 | 2024-09-22 | 8000.00 | Pending |
| 10 | 10 | 10 | 2024-10-25 08:00:00 | 2024-10-30 | 9600.00 | Confirmed |
| 11 | 10 | 5 | 2025-10-10 00:00:00 | 2025-10-12 | 2000.00 | Pending |
| 12 | 14 | 14 | 2025-03-03 00:00:00 | 2025-03-06 | 3400.00 | Confirmed |
| 13 | 14 | 10 | 2025-06-09 00:00:00 | 2025-06-12 | 6400.00 | Completed |
+-----+-----+-----+-----+-----+-----+-----+
13 rows in set (0.00 sec)
```

4. Cancel My Reservation

```
----- Sudharsana CarConnect Menu -----
1. View My Profile
2. Make Reservation
3. View My Reservations
4. Cancel My Reservation
5. View All Vehicles
6. Update My Profile
7. Delete My Account
8. View Profile by ID
9. View Profile by Username
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
Enter your choice: 4
Enter Reservation ID to cancel: 12
Reservation 12 cancelled successfully.

----- Sudharsana CarConnect Menu -----
1. View My Profile
2. Make Reservation
3. View My Reservations
4. Cancel My Reservation
5. View All Vehicles
6. Update My Profile
7. Delete My Account
8. View Profile by ID
9. View Profile by Username
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
Enter your choice: 3
--- Your Reservations ---
Reservation{reservationID=13, customerID=14, vehicleID=10, startDate=2025-06-09 00:00:00.0, endDate=2025-06-12, totalCost=6400.0, status='Completed'}
```

5. View All Vehicles

```
----- Sudharsana CarConnect Menu -----
1. View My Profile
2. Make Reservation
3. View My Reservations
4. Cancel My Reservation
5. View All Vehicles
6. Update My Profile
7. Delete My Account
8. View Profile by ID
9. View Profile by Username
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
Enter your choice: 5
--- Available Vehicles ---
Vehicle{vehicleID=2, model='City', make='Honda', year=2021, registrationNumber='TN07CD5678', availability=true, dailyRate=1500.0}
Vehicle{vehicleID=4, model='Scorpio', make='Mahindra', year=2023, registrationNumber='DL02GH3456', availability=true, dailyRate=1800.0}
Vehicle{vehicleID=6, model='Nexon', make='Tata', year=2021, registrationNumber='TS04KL4321', availability=true, dailyRate=1300.0}
Vehicle{vehicleID=7, model='Verna', make='Hyundai', year=2020, registrationNumber='RJ05MN8765', availability=true, dailyRate=1400.0}
Vehicle{vehicleID=9, model='Innova', make='Toyota', year=2019, registrationNumber='KL07QR3210', availability=true, dailyRate=2000.0}
Vehicle{vehicleID=10, model='Ertiga', make='Maruti Suzuki', year=2023, registrationNumber='AP08ST9876', availability=true, dailyRate=1600.0}
Vehicle{vehicleID=11, model='Sedan', make='Toyota', year=2023, registrationNumber='ABC-123', availability=true, dailyRate=50.0}
Vehicle{vehicleID=14, model='Swift', make='Maruti', year=2022, registrationNumber='TN01ZZ9999', availability=true, dailyRate=850.0}
Vehicle{vehicleID=17, model='Swift', make='Maruti', year=2022, registrationNumber='Updated TN01ZZ9999', availability=true, dailyRate=850.0}
```

6. Update My Profile

```
----- Sudharsana CarConnect Menu -----
1. View My Profile
2. Make Reservation
3. View My Reservations
4. Cancel My Reservation
5. View All Vehicles
6. Update My Profile
7. Delete My Account
8. View Profile by ID
9. View Profile by Username
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
Enter your choice: 6
--- Update My Profile ---
Enter your username: priyavarma
Enter new First Name (leave blank to keep 'Priya'):
Enter new Last Name (leave blank to keep 'Verma'):
Enter new Email (leave blank to keep 'priyavarma@email.com'):
Enter new Phone Number (leave blank to keep '9765432109'):
Enter new Address (leave blank to keep '202 Rajaji St, Chennai, Tamil Nadu'):
Enter new Password (leave blank to keep your current password): priya123
Profile updated successfully.
```

Database:

```
mysql> select * from customer;
```

CustomerID	FirstName	LastName	Email	PhoneNumber	Address	Username	Password	RegistrationDate
1	UpdatedFirstName	UpdatedLastName	updatedexample.com	1234567899	101 MG Road, Mumbai, Maharashtra	updatedUsername	updatedPassword	2024-01-05
2	Priya	Verma	priyaverma@email.com	9765432109	202 Rajaji St, Chennai, Tamil Nadu	priyaverma	\$2s1215WJm0icrfw012gujwft.0eByLMpTOjnubznm65.nRHPLR8qx	2024-02-10
3	Rahul	Nair	rahulnair@email.com	9856123498	303 MG Road, Bangalore, Karnataka	rahulnair	hashedpassword3	2024-03-15
4	Sneha	Patel	snehapatel@email.com	9842210987	509 Park St, Ahmedabad, Gujarat	snehapatel	hashedpassword4	2024-04-20
5	Vikram	Singh	vikramsingh@email.com	9632109876	710 Mall Road, New Delhi	vikramsingh	hashedpassword5	2024-05-05
6	Ananya	Reddy	ananyareddy@email.com	9321098765	88 Jubilee Hills, Hyderabad, Telangana	ananyareddy	hashedpassword6	2024-06-12
7	Rajesh	Sharma	rajeshsharma@email.com	9210987654	303 Mohr, Nagar, Pune, Maharashtra	rajeshsharma	hashedpassword7	2024-07-18
8	Meera	Joshi	meerajoshi@email.com	9109876543	45 Civil Lines, Jaipur, Rajasthan	meerajoshi	hashedpassword8	2024-08-22
9	Suresh	Vadav	sureshyadav@email.com	9098765432	98 Anna Nagar, Coimbatore, Tamil Nadu	sureshyadav	hashedpassword9	2024-09-30
10	Kavya	Mehta	kavyamehta@email.com	8987654321	12 Residency Rd, Kolkata, West Bengal	kavyamehta	hashedpassword10	2024-10-15
14	Kaladevi	Bala	1123@gmail.com	9874563214	K R nagar	kala	\$2s1215gPCYgehLR8kc0apZNgJjM0oYRoSxLuzABD.sN81IzHWwvdj61Knm	2025-04-10

11 rows in set (0.01 sec)

7. Delete My Account

```
----- Sudharsana CarConnect Menu -----
1. View My Profile
2. Make Reservation
3. View My Reservations
4. Cancel My Reservation
5. View All Vehicles
6. Update My Profile
7. Delete My Account
8. View Profile by ID
9. View Profile by Username
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
Enter your choice: 7
--- Delete My Account ---
Enter your username to confirm deletion: rahulnair
Are you sure you want to delete your account? (yes/no): yes
Customer removed successfully.
Account with username 'rahulnair' (ID: 3) deleted successfully. You will be logged out.
```

```
----- Sudharsana CarConnect Menu -----
1. View My Profile
2. Make Reservation
3. View My Reservations
4. Cancel My Reservation
5. View All Vehicles
6. Update My Profile
7. Delete My Account
8. View Profile by ID
9. View Profile by Username
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
Enter your choice: 10
Enter Reservation ID to view: 3
Error: Reservation ID 3 not found.
```

8. View Profile by ID

```
----- Sudharsana CarConnect Menu -----
1. View My Profile
2. Make Reservation
3. View My Reservations
4. Cancel My Reservation
5. View All Vehicles
6. Update My Profile
7. Delete My Account
8. View Profile by ID
9. View Profile by Username
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
Enter your choice: 8
Enter Customer ID to view profile: 2
Customer{customerID=2, firstName='Priya', lastName='Verma', email='priyaverma@email.com', phoneNumber='9765432109', username='priyaverma', registrationDate=2024-02-10}
```

9. View Profile by Username

```
----- Sudharsana CarConnect Menu -----
1. View My Profile
2. Make Reservation
3. View My Reservations
4. Cancel My Reservation
5. View All Vehicles
6. Update My Profile
7. Delete My Account
8. View Profile by ID
9. View Profile by Username
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
Enter your choice: 9
Enter username to view profile: priyaverma
Customer{customerId=2, firstName='Priya', lastName='Verma', email='priyaverma@email.com', phoneNumber='9765432109', username='priyaverma', registrationDate=2024-02-10}
```

10. View Reservation by ID

```
----- Sudharsana CarConnect Menu -----
1. View My Profile
2. Make Reservation
3. View My Reservations
4. Cancel My Reservation
5. View All Vehicles
6. Update My Profile
7. Delete My Account
8. View Profile by ID
9. View Profile by Username
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
Enter your choice: 10
Enter Reservation ID to view: 2
Reservation{reservationID=2, customerID=2, vehicleID=2, startDate=2024-02-12 10:00:00.0, endDate=2024-02-14, totalCost=3000.0, status='Pending'}
```

11. Update My Reservation

Updated time part here

```
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
Enter your choice: 11
--- Update Reservation ---
Enter the Reservation ID you want to update: 2
Current Reservation Details:
Reservation{reservationID=2, customerID=2, vehicleID=2, startDate=2024-02-12 10:00:00.0, endDate=2024-02-14, totalCost=3000.0, status='Pending'}
Enter new Start Date (YYYY-MM-DD HH:MM:SS, leave blank to keep '2024-02-12 10:00:00.0'): 2024-03-13 11:20:00
Enter new End Date (YYYY-MM-DD, leave blank to keep '2024-02-14'): 2024-03-15
New Total Cost: 3000.00
Enter new Status (Pending, Confirmed, Completed, leave blank to keep 'Pending'):
Reservation with ID 2 updated successfully.
```

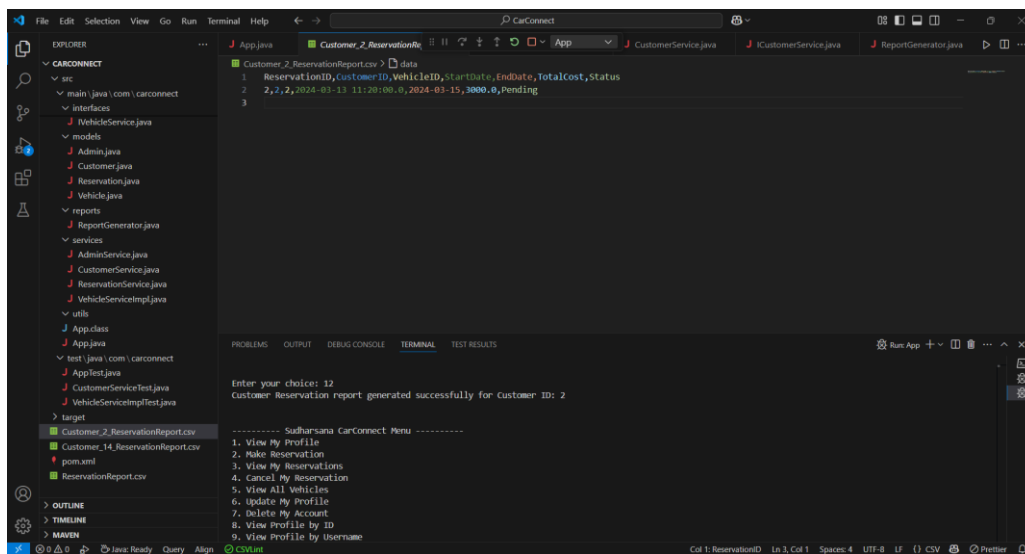
View Updated Reservation

```
----- Sudharsana CarConnect Menu -----
1. View My Profile
2. Make Reservation
3. View My Reservations
4. Cancel My Reservation
5. View All Vehicles
6. Update My Profile
7. Delete My Account
8. View Profile by ID
9. View Profile by Username
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
Enter your choice: 3
--- Your Reservations ---
Reservation{reservationID=2, customerID=2, vehicleID=2, startDate=2024-03-13 11:20:00.0, endDate=2024-03-15, totalCost=3000.0, status='Pending'}
```


12. Generate My Reservation Report

CSV File is generated for each customer

Name	Date modified	Type	Size
.vscode	10-04-2025 11:26	File folder	
src	10-04-2025 11:26	File folder	
target	10-04-2025 12:06	File folder	
Customer_2_ReservationReport	10-04-2025 18:49	Microsoft Excel Co...	1 KB
Customer_14_ReservationReport	10-04-2025 17:13	Microsoft Excel Co...	1 KB
pom.xml	10-04-2025 11:50	XML File	3 KB
ReservationReport	10-04-2025 17:23	Microsoft Excel Co...	1 KB



13. Logout

```
----- Sudharsana CarConnect Menu -----
1. View My Profile
2. Make Reservation
3. View My Reservations
4. Cancel My Reservation
5. View All Vehicles
6. Update My Profile
7. Delete My Account
8. View Profile by ID
9. View Profile by Username
10. View Reservation by ID
11. Update My Reservation
12. Generate My Reservation Report
13. Logout
Enter your choice: 13
Logged out successfully.
-----Welcome to Sudharsana CarConnect-----
Login as:
1. Customer
2. Admin
3. Exit CarConnect
Enter your choice (1, 2, or 3):
```

Admin

1. Admin Management

1.1 Register Admin

```
----- Sudharsana CarConnect Menu -----
1. Admin Management
2. Vehicle Management
3. Customer Management
4. Reservation Management
5. Generate Vehicle Report
6. Generate All Reservations Report
7. Generate Reservation Report by Customer ID
8. Logout
Enter your choice: 1

Admin Management System
1. Register Admin
2. Get Admin by ID
3. Get Admin by Username
4. Update Admin
5. Delete Admin
6. Back to Main Menu
Enter your choice: 1
Enter First Name: sudharsana
Enter Last Name: I
Enter Email: mrv@gmail.com
Enter Phone Number: 7896541230
Enter Username: sudhar
Enter Password: sudhar123
Enter Role: Fleet Manager
Admin registered successfully.
```

1.2 Get Admin by ID

```
Admin Management System
1. Register Admin
2. Get Admin by ID
3. Get Admin by Username
4. Update Admin
5. Delete Admin
6. Back to Main Menu
Enter your choice: 2
Enter Admin ID: 14

Admin Details:
ID: 14
Name: sudharsana I
Email: mrv@gmail.com
Phone: 7896541230
Username: sudhar
Role: Fleet Manager
Join Date: 2025-04-10
```

1.3 Get Admin by Username

```
Admin Management System
1. Register Admin
2. Get Admin by ID
3. Get Admin by Username
4. Update Admin
5. Delete Admin
6. Back to Main Menu
Enter your choice: 3
Enter Username: sudhar
```

```
Admin Details:
ID: 14
Name: sudharsana I
Email: mnv@gmail.com
Phone: 7896541230
Username: sudhar
Role: Fleet Manager
Join Date: 2025-04-10
```

1.4 Update Admin

```
Admin Management System
1. Register Admin
2. Get Admin by ID
3. Get Admin by Username
4. Update Admin
5. Delete Admin
6. Back to Main Menu
Enter your choice: 4
Enter Admin ID to update: 14
Enter First Name (sudharsana):
Enter Last Name (I): Inbakumar
Enter Email (mnv@gmail.com): qwert@gmail.com
Enter Phone Number (7896541230):
Enter Username (sudhar):
Enter Password (Leave blank to keep unchanged):
Enter Role (Fleet Manager):
Admin updated successfully.
```

After Updation

```
mysql> select * from admin;
```

AdminID	FirstName	LastName	Email	PhoneNumber	UserName	Password	Role	JoinDate
1	Arjun	Iyer	arjun1@gmail.com	9876543211	arjun_admin	hashedadminpass1	Super Admin	2023-01-01
2	Neha	Kohli	nehakohli@gmail.com	9765432100	neha_ops	hashedadminpass2	Operations Manager	2023-02-10
3	Sandeep	Menon	sandeepm@gmail.com	9654321099	sandeep_fleet	hashedadminpass3	Fleet Manager	2023-03-15
4	Ritika	Das	ritikadas@gmail.com	9543210986	ritika_sales	hashedadminpass4	Sales Manager	2023-04-20
6	Pooja	Singh	poojasingh@gmail.com	9321098764	pooja_finance	hashedadminpass6	Finance Manager	2023-06-30
7	Ankit	Sharma	ankitsharma@gmail.com	9210987653	ankit_hr	hashedadminpass7	HR Manager	2023-07-15
8	Neenal	Gupta	neenalgupta@gmail.com	9109876542	neenal_security	hashedadminpass8	Security Head	2023-08-10
9	Nitin	Rao	nitinrao@gmail.com	9098765431	nitin_tech	hashedadminpass9	Tech Lead	2023-09-05
10	Swati	Verma	swativerma@gmail.com	8987654320	swati_quality	hashedadminpass10	Quality Manager	2023-10-20
13	susarchita	inbakumar	1234@edu.in	79631450	susa	\$2a\$12\$e0mhe021yTZbkLDDQfju_uFNUebOMwFBh3W5Utzqhs/2l2Xss6	Super Admin	2025-04-10
14	sudharsana	Inbakumar	qwert@gmail.com	7896541230	sudhar	\$2a\$12\$7tWNR8085AP7uVjgcL8MseWOC8c_wocCdoX1CV/LtG8cc1x10amS	Fleet Manager	2025-04-10

11 rows in set (0.00 sec)

1.5 Delete Admin

```
Admin Management System
1. Register Admin
2. Get Admin by ID
3. Get Admin by Username
4. Update Admin
5. Delete Admin
6. Back to Main Menu
Enter your choice: 5
Enter Admin ID to delete: 7
Admin deleted successfully.
```

1.6 Back to Main Menu

```
Admin Management System
1. Register Admin
2. Get Admin by ID
3. Get Admin by Username
4. Update Admin
5. Delete Admin
6. Back to Main Menu
Enter your choice: 6

----- Sudharsana CarConnect Menu -----
1. Admin Management
2. Vehicle Management
3. Customer Management
4. Reservation Management
5. Generate Vehicle Report
6. Generate All Reservations Report
7. Generate Reservation Report by Customer ID
8. Logout
```

2.Vehicle Management

2.1 Add Vehicle

```
1. Add Vehicle
2. Get Vehicle by ID
3. Get Available Vehicles
4. Update Vehicle
5. Remove Vehicle
6. Back to Main Menu
Enter your choice: 1
Enter Vehicle Model: New Model
Enter Vehicle Make: Audi
Enter Vehicle Year: 2025
Enter Registration Number: ASDFER999
Enter Daily Rate: 50000
Vehicle added successfully.
```

After Adding:

```
mysql> select * from vehicle;
```

VehicleID	Model	Make	Year	Color	RegistrationNumber	Availability	DailyRate
1	City	Honda	2023	White	TN11YY2222	0	950.00
2	City	Honda	2021	Black	TN07CD5678	1	1500.00
3	i20	Hyundai	2020	Blue	KA05EF9012	0	1100.00
4	Scorpio	Mahindra	2023	Red	DL02GH3456	1	1800.00
5	Fortuner	Toyota	2022	Silver	GJ03IJ7890	0	2500.00
6	Nexon	Tata	2021	Grey	TS04KL4321	1	1300.00
7	Verna	Hyundai	2020	Maroon	RJ05MN8765	1	1400.00
8	Baleno	Maruti Suzuki	2022	White	WB06OP6543	0	1250.00
9	Innova	Toyota	2019	Black	KL07QR3210	1	2000.00
10	Ertiga	Maruti Suzuki	2023	Blue	AP08ST9876	1	1600.00
11	Sedan	Toyota	2023	NULL	ABC-123	1	50.00
14	Swift	Maruti	2022	NULL	TN01ZZ9999	1	850.00
17	Swift	Maruti	2022	NULL	Updated TN01ZZ9999	1	850.00
18	New Model	Audi	2025	NULL	ASDFER999	1	50000.00

```
14 rows in set (0.00 sec)
```

2.2 Get Vehicle by ID

```
Vehicle Management System
1. Add Vehicle
2. Get Vehicle by ID
3. Get Available Vehicles
4. Update Vehicle
5. Remove Vehicle
6. Back to Main Menu
Enter your choice: 2
Enter Vehicle ID: 3
Vehicle{vehicleID=3, model='i20', make='Hyundai', year=2020, registrationNumber='KA05EF9012', availability=false, dailyRate=1100.0}
```

2.3 Get Available Vehicles

```
Vehicle Management System
1. Add Vehicle
2. Get Vehicle by ID
3. Get Available Vehicles
4. Update Vehicle
5. Remove Vehicle
6. Back to Main Menu
Enter your choice: 3
--- Available Vehicles ---
Vehicle{vehicleID=2, model='City', make='Honda', year=2021, registrationNumber='TN07CD5678', availability=true, dailyRate=1500.0}
Vehicle{vehicleID=4, model='Scorpio', make='Mahindra', year=2023, registrationNumber='DL02GH3456', availability=true, dailyRate=1800.0}
Vehicle{vehicleID=6, model='Nexon', make='Tata', year=2021, registrationNumber='TS04KL4321', availability=true, dailyRate=1300.0}
Vehicle{vehicleID=7, model='Verna', make='Hyundai', year=2020, registrationNumber='RJ05MN8765', availability=true, dailyRate=1400.0}
Vehicle{vehicleID=9, model='Innova', make='Toyota', year=2019, registrationNumber='KL07QR3210', availability=true, dailyRate=2000.0}
Vehicle{vehicleID=10, model='Ertiga', make='Maruti Suzuki', year=2023, registrationNumber='AP08ST9876', availability=true, dailyRate=1600.0}
Vehicle{vehicleID=11, model='Sedan', make='Toyota', year=2023, registrationNumber='ABC-123', availability=true, dailyRate=50.0}
Vehicle{vehicleID=14, model='Swift', make='Maruti', year=2022, registrationNumber='TN01ZZ9999', availability=true, dailyRate=850.0}
Vehicle{vehicleID=17, model='Swift', make='Maruti', year=2022, registrationNumber='Updated TN01ZZ9999', availability=true, dailyRate=850.0}
Vehicle{vehicleID=18, model='New Model', make='Audi', year=2025, registrationNumber='ASDFER999', availability=true, dailyRate=50000.0}
```

2.4 Update Vehicle

```
Enter your choice: 4
2. Get Vehicle by ID
3. Get Available Vehicles
4. Update Vehicle
5. Remove Vehicle
6. Back to Main Menu
Enter your choice: 4
6. Back to Main Menu
Enter your choice: 4
Enter your choice: 4
Enter Vehicle ID to update: 18
Enter Vehicle Model (New Model): Updated New Model
Enter Vehicle Make (Audi):
Enter Vehicle Year (2025):
Enter Registration Number (ASDFER999):
Enter Daily Rate (50000.0):
Vehicle updated successfully.
```

After Updation:

```
Vehicle Management System
1. Add Vehicle
2. Get Vehicle by ID
3. Get Available Vehicles
4. Update Vehicle
5. Remove Vehicle
6. Back to Main Menu
Enter your choice: 2
Enter Vehicle ID: 18
Vehicle{vehicleID=18, model='Updated New Model', make='Audi', year=2025, registrationNumber='ASDFER999', availability=true, dailyRate=50000.0}
```

2.5 Remove Vehicle

```
Vehicle Management System
1. Add Vehicle
2. Get Vehicle by ID
3. Get Available Vehicles
4. Update Vehicle
5. Remove Vehicle
6. Back to Main Menu
Enter your choice: 5
Enter Vehicle ID to remove: 18
Vehicle removed successfully.
Vehicle removed
```

After Removal of Vehicle ID →18

```
Vehicle Management System
1. Add Vehicle
2. Get Vehicle by ID
3. Get Available Vehicles
4. Update Vehicle
5. Remove Vehicle
6. Back to Main Menu
Enter your choice: 2
Enter Vehicle ID: 18
Error: Vehicle with ID 18 not found.
```

Choice 3 has been implemented according to the user RBAC in overall option 2

So lets move to choice 4

4.Reservation Management

```
----- Sudharsana CarConnect Menu -----
1. Admin Management
2. Vehicle Management
3. Customer Management
4. Reservation Management
5. Generate Vehicle Report
6. Generate All Reservations Report
7. Generate Reservation Report by Customer ID
8. Logout
Enter your choice: 4
```

4.1 Get Reservation by ID

```
Reservation Management System
1. Get Reservation by ID
2. Get Reservations by Customer ID
3. Create Reservation
4. Update Reservation
5. Cancel Reservation
6. Back to Main Menu
Enter your choice: 1
Enter Reservation ID to view: 5
Reservation{reservationID=5, customerID=5, vehicleID=5, startDate=2024-05-15 09:30:00.0, endDate=2024-05-20, totalCost=12500.0, status='Confirmed'}
```

4.2 Get Reservations by Customer ID

```
Reservation Management System
1. Get Reservation by ID
2. Get Reservations by Customer ID
3. Create Reservation
4. Update Reservation
5. Cancel Reservation
6. Back to Main Menu
Enter your choice: 2
Enter Customer ID: 2
Reservation{reservationID=2, customerID=2, vehicleID=2, startDate=2024-03-13 11:20:00.0, endDate=2024-03-15, totalCost=3000.0, status='Pending'}
```

4.3 Create Reservation

```
Reservation Management System
1. Get Reservation by ID
2. Get Reservations by Customer ID
3. Create Reservation
4. Update Reservation
5. Cancel Reservation
6. Back to Main Menu
Enter your choice: 3
Enter Reservation ID: 14
Enter Customer ID: 2
Enter Vehicle ID: 6
Enter Start Date (YYYY-MM-DD): 2025-02-13
Enter End Date (YYYY-MM-DD): 2025-02-20
Enter Total Cost: 3000
Enter Status: Pending

Reservation Management System
1. Get Reservation by ID
2. Get Reservations by Customer ID
3. Create Reservation
4. Update Reservation
5. Cancel Reservation
6. Back to Main Menu
Enter your choice: 1
Enter Reservation ID to view: 14
Reservation{reservationID=14, customerID=2, vehicleID=6, startDate=2025-02-13 00:00:00.0, endDate=2025-02-20, totalCost=3000.0, status='Pending'}
```

4.4 Update Reservation

```
Reservation{reservationID=14, customerID=2, vehicleID=6, startDate=2025-02-13 00:00:00.0, endDate=2025-02-20, totalCost=3000.0, status='Pending'}

Reservation Management System
1. Get Reservation by ID
2. Get Reservations by Customer ID
3. Create Reservation
4. Update Reservation
5. Cancel Reservation
6. Back to Main Menu
Enter your choice: 4
--- Update Reservation ---
Enter the Reservation ID you want to update: 14
Current Reservation Details:
Reservation{reservationID=14, customerID=2, vehicleID=6, startDate=2025-02-13 00:00:00.0, endDate=2025-02-20, totalCost=3000.0, status='Pending'}
Enter new Start Date (YYYY-MM-DD HH:MM:SS, leave blank to keep '2025-02-13 00:00:00.0'):
Enter new End Date (YYYY-MM-DD, leave blank to keep '2025-02-20'):
New Total Cost: 9100.00
Enter new Status (Pending, Confirmed, Completed, leave blank to keep 'Pending'): Confirmed
Reservation with ID 14 updated successfully.
```

After Updation:

```
Reservation Management System
1. Get Reservation by ID
2. Get Reservations by Customer ID
3. Create Reservation
4. Update Reservation
5. Cancel Reservation
6. Back to Main Menu
Enter your choice: 2
Enter Customer ID: 2
Reservation{reservationID=2, customerID=2, vehicleID=2, startDate=2024-03-13 11:20:00.0, endDate=2024-03-15, totalCost=3000.0, status='Pending'}
Reservation{reservationID=14, customerID=2, vehicleID=6, startDate=2025-02-13 00:00:00.0, endDate=2025-02-20, totalCost=9100.0, status='Confirmed'}
```

4.5 Cancel Reservation

```
Reservation{reservationID=2, customerID=2, vehicleID=2, startDate=2024-03-13 11:20:00.0, endDate=2024-03-15, totalCost=3000.0, status='Pending'}
Reservation{reservationID=14, customerID=2, vehicleID=6, startDate=2025-02-13 00:00:00.0, endDate=2025-02-20, totalCost=9100.0, status='Confirmed'}









Reservation Management System
1. Get Reservation by ID
2. Get Reservations by Customer ID
3. Create Reservation
4. Update Reservation
5. Cancel Reservation
6. Back to Main Menu
Enter your choice: 5
Enter Reservation ID to cancel: 14
Reservation 14 cancelled successfully.

Reservation Management System
1. Get Reservation by ID
2. Get Reservations by Customer ID
3. Create Reservation
4. Update Reservation
5. Cancel Reservation
6. Back to Main Menu
Enter your choice: 2
Enter Customer ID: 2
Reservation{reservationID=2, customerID=2, vehicleID=2, startDate=2024-03-13 11:20:00.0, endDate=2024-03-15, totalCost=3000.0, status='Pending'}
```

5.Generate Vehicle Report

```
----- Sudharsana CarConnect Menu -----
1. Admin Management
2. Vehicle Management
3. Customer Management
4. Reservation Management
5. Generate Vehicle Report
6. Generate All Reservations Report
7. Generate Reservation Report by Customer ID
8. Logout
Enter your choice: 5
Vehicle report generated successfully.

----- Sudharsana CarConnect Menu -----
1. Admin Management
2. Vehicle Management
```

Name	Date modified	Type	Size
 .vscode	10-04-2025 11:26	File folder	
 src	10-04-2025 11:26	File folder	
 target	10-04-2025 12:06	File folder	
 Customer_2_ReservationReport	10-04-2025 18:49	Microsoft Excel Co...	1 KB
 Customer_14_ReservationReport	10-04-2025 17:13	Microsoft Excel Co...	1 KB
 pom.xml	10-04-2025 11:50	XML File	3 KB
 ReservationReport	10-04-2025 17:23	Microsoft Excel Co...	1 KB
 VehicleReport	10-04-2025 19:48	Microsoft Excel Co...	1 KB

	A	B	C	D	E	F	G	H
	VehicleID	Model	Make	Year	RegistrationNumber	Availability	DailyRate	
	2	City	Honda	2021	TN07CD5678	TRUE	1500	
	4	Scorpio	Mahindra	2023	DL02GH3456	TRUE	1800	
	6	Nexon	Tata	2021	TS04KL4321	TRUE	1300	
	7	Verna	Hyundai	2020	RJ05MN8765	TRUE	1400	
	9	Innova	Toyota	2019	KL07QR3210	TRUE	2000	
	10	Ertiga	Maruti Suz	2023	AP08ST9876	TRUE	1600	
	11	Sedan	Toyota	2023	ABC-123	TRUE	50	
	14	Swift	Maruti	2022	TN01ZZ9999	TRUE	850	
0	17	Swift	Maruti	2022	Updated TN01ZZ9999	TRUE	850	
1								

6. Generate All Reservation Reports

```

----- Sudharsana CarConnect Menu -----
1. Admin Management
2. Vehicle Management
3. Customer Management
4. Reservation Management
5. Generate Vehicle Report
6. Generate All Reservations Report
7. Generate Reservation Report by Customer ID
8. Logout
Enter your choice: 6
Reservation report generated successfully.




```

Filename	Date modified	Type	Size
.vscode	10-04-2025 11:26	File folder	
src	10-04-2025 11:26	File folder	
target	10-04-2025 12:06	File folder	
Customer_2_ReservationReport	10-04-2025 18:49	Microsoft Excel Co...	1 KB
Customer_14_ReservationReport	10-04-2025 17:13	Microsoft Excel Co...	1 KB
pom.xml	10-04-2025 11:50	XML File	3 KB
ReservationReport	10-04-2025 19:53	Microsoft Excel Co...	1 KB
VehicleReport	10-04-2025 19:48	Microsoft Excel Co...	1 KB

ReservationID	CustomerID	VehicleID	StartDate	EndDate	TotalCost	Status
1	1	1	00:00.0	15-01-2024	6000	Confirmed
2	2	2	20:00.0	15-03-2024	3000	Pending
4	4	4	00:00.0	12-04-2024	7200	Pending
5	5	5	30:00.0	20-05-2024	12500	Confirmed
6	6	6	00:00.0	25-06-2024	3900	Pending
7	7	7	00:00.0	03-07-2024	2800	Completed
8	8	8	30:00.0	12-08-2024	2500	Confirmed
9	9	9	00:00.0	22-09-2024	8000	Pending
10	10	10	00:00.0	30-10-2024	9600	Confirmed
11	10	5	00:00.0	12-10-2025	2000	Pending
13	14	10	00:00.0	12-06-2025	6400	Completed

7. Generate Reservation Report by Customer ID

```
----- Sudharsana CarConnect Menu -----
1. Admin Management
2. Vehicle Management
3. Customer Management
4. Reservation Management
5. Generate Vehicle Report
6. Generate All Reservations Report
7. Generate Reservation Report by Customer ID
8. Logout
Enter your choice: 7
Enter Customer ID to generate report: 10
Customer Reservation report generated successfully for Customer ID: 10
```

 ReservationReport	10-04-2025 19:53	Microsoft Excel Co...	1 KB
 VehicleReport	10-04-2025 19:48	Microsoft Excel Co...	1 KB
 Customer_10_ReservationReport	10-04-2025 19:55	Microsoft Excel Co...	1 KB

A	B	C	D	E	F	G	H
Reservatio	CustomerID	VehicleID	StartDate	EndDate	TotalCost	Status	
10	10	10	00:00.0	30-10-2024	9600	Confirmed	
11	10	5	00:00.0	12-10-2025	2000	Pending	

8. Logout And Exiting Application

```
----- Sudharsana CarConnect Menu -----
1. Admin Management
2. Vehicle Management
3. Customer Management
4. Reservation Management
5. Generate Vehicle Report
6. Generate All Reservations Report
7. Generate Reservation Report by Customer ID
8. Logout
Enter your choice: 8
Logged out successfully.
-----Welcome to Sudharsana CarConnect-----
Login as:
1. Customer
2. Admin
3. Exit CarConnect
Enter your choice (1, 2, or 3): 3
-----Thank you for using Sudharsana CarConnect-----
```

Task:

Custom Exceptions:

1. AuthenticationException

```
-----Welcome to Sudharsana CarConnect-----
Login as:
1. Customer
2. Admin
3. Exit CarConnect
Enter your choice (1, 2, or 3): 1
Enter username: customer
Enter password: 123
Error: Customer with username customer not found.
Login failed. Invalid username or password.
-----Welcome to Sudharsana CarConnect-----
Login as:
1. Customer
2. Admin
3. Exit CarConnect
Enter your choice (1, 2, or 3): █
```

2.ReservationException

```
Enter your choice: 2
--- Create New Reservation ---
--- Available Vehicles ---
Vehicle(vehicleID=2, model='city', make='Honda', year=2021, registrationNumber='TN00CD5678', availability=true, dailyRate=1500.0)
Vehicle(vehicleID=4, model='Scorpio', make='Mahindra', year=2023, registrationNumber='DL602G456', availability=true, dailyRate=1800.0)
Vehicle(vehicleID=6, model='Nexon', make='Tata', year=2021, registrationNumber='TS080L4321', availability=true, dailyRate=1300.0)
Vehicle(vehicleID=7, model='Nerna', make='Hyundai', year=2020, registrationNumber='K309F66765', availability=true, dailyRate=1600.0)
Vehicle(vehicleID=9, model='Innova', make='Toyota', year=2019, registrationNumber='KL07Q81210', availability=true, dailyRate=2000.0)
Vehicle(vehicleID=10, model='Ertiga', make='Maruti Suzuki', year=2023, registrationNumber='AP08S19678', availability=true, dailyRate=1600.0)
Vehicle(vehicleID=11, model='Sedan', make='Toyota', year=2023, registrationNumber='JAC-123', availability=true, dailyRate=90.0)
Vehicle(vehicleID=14, model='Swift', make='Maruti', year=2022, registrationNumber='TN01ZZ9999', availability=true, dailyRate=850.0)
Vehicle(vehicleID=17, model='Swift', make='Maruti', year=2022, registrationNumber='Updated TN01ZZ9999', availability=true, dailyRate=850.0)
Enter the Vehicle ID you want to reserve: 10
Enter the start date (YYYY-MM-DD): 2025-02-12
Enter the end date (YYYY-MM-DD): 2025-02-16
--- Reservation Details ---
Vehicle Model: Maruti Suzuki Ertiga
Start Date: 2025-02-12
End Date: 2025-02-16
Rental Days: 5
Total Cost: 8000.00
Available Reservation statuses: Pending, Confirmed, Completed
Enter the desired reservation status: Confirmed
Confirm reservation with status 'Confirmed'? (yes/no): yes
Error creating reservation: This vehicle was already booked Consider Booking from the Available
```

3.VehicleNotFound

```
Vehicle Management System
1. Add Vehicle
2. Get Vehicle by ID
3. Get Available Vehicles
4. Update Vehicle
5. Remove Vehicle
6. Back to Main Menu
Enter your choice: 2
Enter Vehicle ID: 50
Error: Vehicle with ID 50 not found.
```

4.Admin Not Found

```
Admin Management System
1. Register Admin
2. Get Admin by ID
3. Get Admin by Username
4. Update Admin
5. Delete Admin
6. Back to Main Menu
Enter your choice: 2
Enter Admin ID: 50
Error: Admin with ID 50 not found.
```

5. InvalidInputException:

```

----- Sudharsana CarConnect Menu -----
1. Admin Management
2. Vehicle Management
3. Customer Management
4. Reservation Management
5. Generate Vehicle Report
6. Generate All Reservations Report
7. Generate Reservation Report by Customer ID
8. Logout
Enter your choice: Invalid input. Please enter a number.

```

6. DatabaseConnectionException:

```

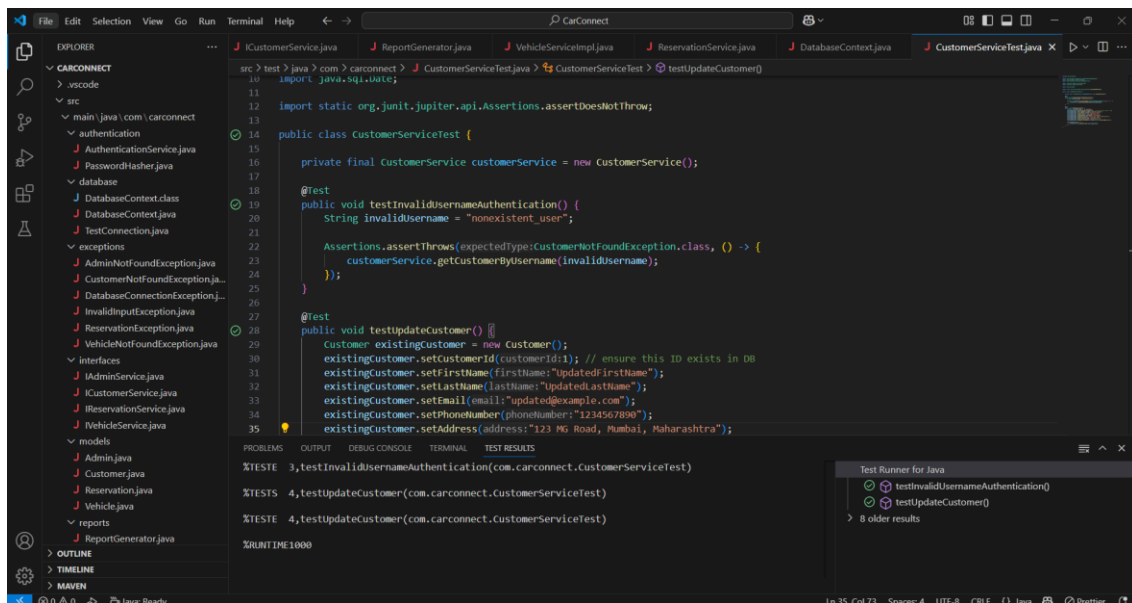
-----Welcome to Sudharsana CarConnect-----
Login as:
1. Customer
2. Admin
3. Exit CarConnect
Enter your choice (1, 2, or 3): 1
Enter username: kala
Enter password: kala123
Error: Database error: Unknown database 'carconnectd'
Login failed. Invalid username or password.
-----Welcome to Sudharsana CarConnect-----
Login as:
1. Customer
2. Admin

```

Task : Unit Testing

CustomerServiceTest

1. Test customer authentication with invalid credentials
2. Test updating customer information



VehicleServiceImpl.java

3. Test adding a new vehicle

4. Test updating vehicle details

5. Test getting a list of available vehicles

6. Test getting a list of all vehicles.

