📝 Problem Statement: Car Rental Management API 🚗

📁 Models

RoleModel

Field Name	Datatype	Primary Key	Comments
id	Integer	Yes	Autoincrement
rolename	String	No	Values: "CUSTOMER", "MANAGER"

UserModel

Field Name	Datatype	Primary Key	Foreign Key	Comments
id	Integer	Yes	No	Autoincrement
username	String	No	No	-
email	String	No	No	Unique
password	String	No	No	-
role	Integer	No	Yes	FK to RoleModel

RentalModel

Field Name	Datatype	Primary Key	Foreign Key	Comments
id	Integer	Yes	Autoincrement
customerId	Integer	No	FK to UserModel
carType	String	No	No	Values: "SUV", "Sedan", "Hatchback"
days	Integer	No	No	-
baseRate	Double	No	No	Rate per day based on carType
insuranceFee	Double	No	No	Default: 500
discountPct	Double	No	No	Default: 0
totalCost	Double	No	No	Calculated: (days * baseRate) - discount + insuranceFee
rentalDate	String	No	No	Default: Current date
status	String	No	No	Default: "booked"

🔐 JWT Authentication
- JWT token required in Authorization header:
  `
  Authorization: Bearer <JWT_TOKEN>
  `

- Roles (CUSTOMER / MANAGER) are identified from the token.
- All endpoints except /login require authentication.

🌐 Endpoints

1. POST /login
Input Request:
```json
{
  "email": "cust1@gmail.com",
  "password": "cust123$"
}
```

Expected Output (200 OK):
```json
{
  "email": "cust1@gmail.com",
  "access": "<access_token>",
  "refresh": "<refresh_token>",
  "status": 200
}
```

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2. POST /rental/create (CUSTOMER only)
Input Request:
```json
{
  "carType": "SUV",
  "days": 5,
  "discountPct": 10
}
```

Manipulations:
- baseRate auto-set based on carType:
  - SUV → 3000/day
  - Sedan → 2000/day
  - Hatchback → 1500/day
- discount = (days baseRate) (discountPct/100)
- totalCost = (days * baseRate) - discount + insuranceFee

Expected Output (201 CREATED):
```json
{
  "id": 4001,
```

```json
  "customerId": 1,
  "carType": "SUV",
  "days": 5,
  "baseRate": 3000,
  "discountPct": 10,
  "insuranceFee": 500,
  "totalCost": 13500,
  "rentalDate": "06/12/2025",
  "status": "booked"
}
```

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3. GET /rental/list?carType=SUV&minDays=3&maxCost=20000&status=booked (Both roles)
Expected Output (200 OK):
```json
[
  {
    "id": 4001,
    "customerId": 1,
    "carType": "SUV",
    "days": 5,
    "totalCost": 13500,
    "status": "booked"
  }
]
```

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4. PATCH /rental/update/{id} (MANAGER only)
Input Request:
```json
{ "status": "completed" }
```

Expected Output (200 OK):
```json
{
  "id": 4001,
  "customerId": 1,
  "carType": "SUV",
  "days": 5,
  "totalCost": 13500,
  "status": "completed"
}
```

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5. DELETE /rental/delete/{id} (Conditional access)
Expected Output (204 No Content):
`json
{ "message": "deleted successfully" }
`

📑 Response Codes
- 200 OK – Success
- 201 CREATED – Resource created
- 204 No Content – Deleted successfully
- 400 Bad Request – Invalid input / Not found
- 403 Forbidden – Permission denied

✅ This new problem statement adds extra manipulations:
- Auto-set baseRate by carType.
- Discount calculation.
- Insurance fee added to totalCost.
- Query params with four filters: carType, minDays, maxCost, status.