📝 Problem Statement: Online Shopping Cart API 🛒

📁 Models

RoleModel

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

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

ProductModel

Field Name	Datatype	Primary Key	Comments
id	Integer	Yes	Autoincrement
name	String	No	-
category	String	No	Example: "Electronics", "Clothing"
price	Double	No	-
stock	Integer	No	-

CartModel

Field Name	Datatype	Primary Key	Foreign Key	Comments
id	Integer	Yes	Autoincrement
customerId	Integer	No	FK to UserModel
productId	Integer	No	FK to ProductModel
quantity	Integer	No	No	-
discountPct	Double	No	No	Default: 0
taxPct	Double	No	No	Default: 12
totalPrice	Double	No	No	Calculated: (quantity * price - discount) + tax
addedDate	String	No	No	Default: Current date
status	String	No	No	Default: "in_cart"

🔐 JWT Authentication
- JWT token required in Authorization header:
  `
  Authorization: Bearer <JWT_TOKEN>
  `
- Roles (CUSTOMER / ADMIN) are identified from the token.
- All endpoints except /login require authentication.

🌐 Endpoints

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

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

---

2. POST /cart/add (CUSTOMER only)
Input Request:
`json
```json
{
  "productId": 301,
  "quantity": 2,
  "discountPct": 5
}
```
`

Manipulations:
- discount = (quantity price) (discountPct/100)
- tax = (quantity price - discount) (taxPct/100)
- totalPrice = (quantity * price - discount) + tax

Expected Output (201 CREATED):
```json
{
  "id": 7001,
  "customerId": 1,
  "productId": 301,
  "quantity": 2,
  "discountPct": 5,
  "taxPct": 12,
  "totalPrice": 3384,
  "addedDate": "08/12/2025",
  "status": "in_cart"
}
```

---

3. GET /cart/list?category=Electronics&minPrice=2000&maxPrice=5000&status=in_cart
(Both roles)
Expected Output (200 OK):
```json
[
  {
    "id": 7001,
    "customerId": 1,
    "productId": 301,
    "category": "Electronics",
    "totalPrice": 3384,
    "status": "in_cart"
  }
]
```

---

4. PATCH /cart/update/{id} (CUSTOMER only)
Input Request:
```json
{ "status": "ordered" }
```

Expected Output (200 OK):
```json
{
  "id": 7001,
  "customerId": 1,
  "productId": 301,
```

```
  "totalPrice": 3384,
  "status": "ordered"
}
`
```

---

5. DELETE /cart/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:
- Discount + tax calculation for cart items.
- Query params with four filters: category, minPrice, maxPrice, status.