

## Problem Statement: Gym Membership Management API

### Models

#### RoleModel

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

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#### 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

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#### MembershipModel

Field Name	Datatype	Primary Key	Foreign Key	Comments
id	Integer	Yes		Autoincrement
memberId	Integer	No		FK to UserModel
planType	String	No	No	Values: "Monthly", "Quarterly", "Yearly"
baseFee	Double	No	No	Fee based on planType
discountPct	Double	No	No	Default: 0
taxPct	Double	No	No	Default: 18
totalFee	Double	No	No	Calculated: (baseFee - discount) + tax
startDate	String	No	No	Default: Current date
endDate	String	No	No	Auto-calculated based on planType
status	String	No	No	Default: "active"

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### JWT Authentication

- JWT token required in Authorization header:

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Authorization: Bearer <JWT\_TOKEN>

,

- Roles (MEMBER / ADMIN) are identified from the token.

- All endpoints except /login require authentication.

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## Endpoints

### 1. POST /login

Input Request:

```
`json
{
  "email": "member1@gmail.com",
  "password": "mem123$"
}
```

Expected Output (200 OK):

```
`json
{
  "email": "member1@gmail.com",
  "access": "<access_token>",
  "refresh": "<refresh_token>",
  "status": 200
}
```

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### 2. POST /membership/create (MEMBER only)

Input Request:

```
`json
{
  "planType": "Quarterly",
  "discountPct": 10
}
```

Manipulations:

- baseFee auto-set by planType:
  - Monthly → 1000
  - Quarterly → 2500
  - Yearly → 9000
- discount = baseFee \* (discountPct/100)
- tax = (baseFee - discount) \* (taxPct/100)
- totalFee = (baseFee - discount) + tax
- endDate auto-calculated:
  - Monthly → +30 days
  - Quarterly → +90 days
  - Yearly → +365 days

Expected Output (201 CREATED):

```
`json
{
  "id": 6001,
  "memberId": 1,
  "planType": "Quarterly",
  "baseFee": 2500,
  "discountPct": 10,
  "taxPct": 18,
  "totalFee": 2655,
  "startDate": "08/12/2025",
  "endDate": "08/03/2026",
  "status": "active"
}
```

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3. GET /membership/list?planType=Yearly&minFee=5000&status=active (Both roles)

Expected Output (200 OK):

```
`json
[
  {
    "id": 6002,
    "memberId": 2,
    "planType": "Yearly",
    "totalFee": 10620,
    "status": "active"
  }
]
```

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4. PATCH /membership/update/{id} (ADMIN only)

Input Request:

```
`json
{ "status": "expired" }
```

Expected Output (200 OK):

```
`json
{
  "id": 6001,
  "memberId": 1,
  "planType": "Quarterly",
  "totalFee": 2655,
  "status": "expired"
}
```

5. DELETE /membership/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 baseFee by planType.
- Discount + tax calculation.
- Auto-calculate endDate based on planType.
- Query params with planType, minFee, status.