**Fitness Studio Booking API Documentation**

**📖 Overview**

This is a lightweight backend API for a fictional fitness studio. It allows users to:

* View upcoming fitness classes
* Book a class if slots are available
* Retrieve all bookings by email

Built using **FastAPI** and **Pydantic**, and data is stored in JSON files.

**🗂️ Project Structure**

project/

├── app/

│ ├── data/

│ │ ├── classes.json

│ │ └── bookings.json

│ ├── models/

│ │ └── schemas.py

│ ├── utils.py

│ └── main.py

**📦 Dependencies**

Install the required packages using:

bash

pip install fastapi uvicorn pydantic pytz

To run the server:

bash

uvicorn app.main:app --reload

**📚 Schemas**

**FitnessClass**

json

{

"id": 1,

"name": "Yoga",

"datetime": "2025-06-10T07:00:00+05:30",

"instructor": "Alice",

"available\_slots": 5

}

**BookingRequest**

json

{

"class\_id": 1,

"client\_name": "John Doe",

"client\_email": "john@example.com"

}

**BookingResponse**

json

{

"class\_id": 1,

"class\_name": "Yoga",

"datetime": "2025-06-10T07:00:00+05:30",

"client\_name": "John Doe",

"client\_email": "john@example.com"

}

**📡 API Endpoints**

**1. GET /classes**

**Description:**

Returns all **upcoming classes** based on the current IST time.

**Query Params:**

| **Name** | **Type** | **Default** | **Description** |
| --- | --- | --- | --- |
| timezone | string | Asia/Kolkata | Optional timezone for datetime |

**Response:**

Returns a list of available fitness classes.

**Example:**

GET /classes?timezone=Asia/Kolkata

**2. POST /book**

**Description:**

Book a class by providing class ID and client details.

**Request Body:**

json

{

"class\_id": 1,

"client\_name": "Jane Doe",

"client\_email": "jane@example.com"

}

**Success Response:**

Returns booking confirmation.

**Example:**

POST /book

Content-Type: application/json

**Errors:**

* 404: Class not found
* 400: No available slots
* 409: Already booked

**3. GET /bookings**

**Description:**

Get all bookings made by a specific email address.

**Query Params:**

| **Name** | **Type** | **Required** | **Description** |
| --- | --- | --- | --- |
| email | EmailStr | Yes | Client email to filter bookings |

**Example:**

GET /bookings?email=john@example.com

**Response:**

Returns list of bookings for that email.

**🧪 Sample Data Format**

**classes.json**

json

[

{

"id": 1,

"name": "Yoga",

"datetime": "2025-06-10T07:00:00+05:30",

"instructor": "Alice",

"available\_slots": 10

}

]

**bookings.json**

json

[

{

"class\_id": 1,

"class\_name": "Yoga",

"datetime": "2025-06-10T07:00:00+05:30",

"client\_name": "John Doe",

"client\_email": "john@example.com"

}

]

**📝 Notes**

* All times are localized to **Asia/Kolkata** by default, but can be converted to any valid timezone.
* Bookings are idempotent — the same user can’t book the same class twice.
* JSON is used for storage; replace with a database in production.