



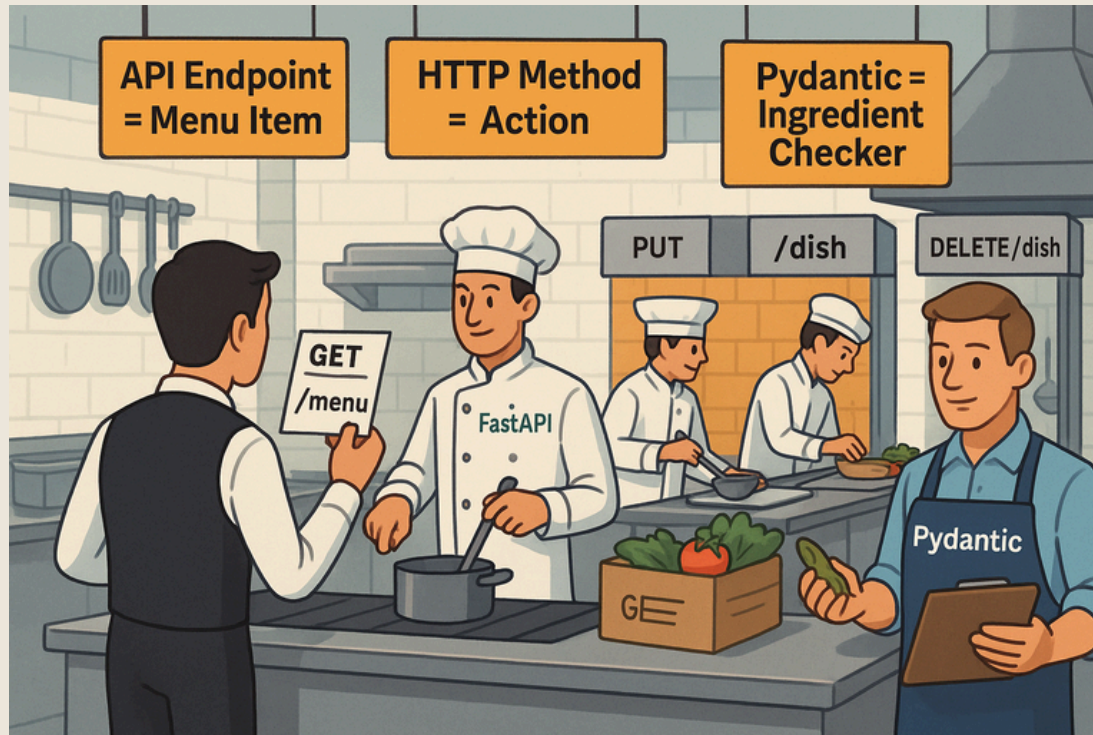
Python Challenge

Day 26

Built CRUD API using FastAPI

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🧠 Analogy – FastAPI as a Restaurant Kitchen



1. **API Endpoint = Menu Item:** You place an order (GET/POST), and the kitchen (FastAPI) serves it.
2. **HTTP Method = Action:** POST = Add item, GET = View, PUT = Update, DELETE = Remove.
3. **Pydantic= Ingredient Checker:** Only fresh and valid ingredients (data) are accepted!

Code

```
from fastapi import FastAPI, HTTPException
from pydantic import BaseModel

app = FastAPI()

@app.get("/")
def read_root():
    return {"message": "Welcome to the Book Management API! Visit /docs to explore."}

class Book(BaseModel):
    id: int
    title: str
    author: str

books = []

@app.post("/books/")
def add_book(book: Book):
    for existing_book in books:
        if existing_book.id == book.id:
            raise HTTPException(status_code=400, detail="Book ID already exists")
    books.append(book)
    return {"message": "Book added!", "book": book}

@app.get("/books/")
def get_books():
    return books

@app.get("/books/{book_id}")
def get_book(book_id: int):
    for book in books:
        if book.id == book_id:
            return book
    raise HTTPException(status_code=404, detail="Book not found")

@app.put("/books/{book_id}")
def update_book(book_id: int, updated_book: Book):
    for index, book in enumerate(books):
        if book.id == book_id:
            books[index] = updated_book
            return {"message": "Book updated", "book": updated_book}
    raise HTTPException(status_code=404, detail="Book not found")

@app.delete("/books/{book_id}")
def delete_book(book_id: int):
    for index, book in enumerate(books):
        if book.id == book_id:
            deleted = books.pop(index)
            return {"message": "Book deleted", "book": deleted}
    raise HTTPException(status_code=404, detail="Book not found")
```

Starting the FastAPI Server with Uvicorn

```
PS C:\Users\laxmi\OneDrive\Desktop\30> uvicorn day26:app --reload
INFO:      Will watch for changes in these directories: ['C:\\Users\\laxmi\\OneDrive\\Desktop\\30']
INFO:      Uvicorn running on http://127.0.0.1:8000 (Press CTRL+C to quit)
INFO:      Started reloader process [31100] using StatReload
INFO:      Started server process [13892]
INFO:      Waiting for application startup.
INFO:      Application startup complete.
```

Successfully launched the FastAPI app using `uvicorn day26:app --reload`. Ready to test at `http://127.0.0.1:8000`

Swagger UI with API endpoints

FastAPI 0.1.0 OAS 3.1
[/openapi.json](#)

default ^

GET	/	Read Root	⌵
GET	/books/	Get Books	⌵
POST	/books/	Add Book	⌵
GET	/books/{book_id}	Get Book	⌵
PUT	/books/{book_id}	Update Book	⌵
DELETE	/books/{book_id}	Delete Book	⌵

Adding a book

POST /books/ Add Book

Parameters

No parameters

Request body required

application/json

Edit Value | Schema

```
{
  "id": 1,
  "title": "The Alchemist",
  "author": "Paulo Coelho"
}
```

Response

Code Details

200

Response body

```
{
  "message": "Book added!",
  "book": {
    "id": 1,
    "title": "The Alchemist",
    "author": "Paulo Coelho"
  }
}
```

Download

Response headers

```
content-length: 89
content-type: application/json
date: Sun, 22 Jun 2025 17:40:45 GMT
server: uvicorn
```

Responses

View book by ID

GET

/books/{book_id} Get Book

^

Parameters

Cancel

Name	Description
book_id * required integer (path)	<input type="text" value="1"/>

Execute

Clear

Responses

Response

Request URL

http://127.0.0.1:8000/books/1

Server response

CodeDetails

200

Response body

```
{
  "id": 1,
  "title": "The Alchemist",
  "author": "Paulo Coelho"
}
```



Download

Response headers

```
content-length: 56
content-type: application/json
date: Sun, 22 Jun 2025 17:42:38 GMT
server: uvicorn
```

Update Book by ID

PUT /books/{book_id} Update Book

Parameters

Cancel

Reset

Name	Description
book_id * required	
integer	1
(path)	

Request body required

application/json

Edit Value

Schema

```
{  "id": 1,  "title": "The Alchemist (Updated)",  "author": "Paulo Coelho"}
```

Response

Request URL

http://127.0.0.1:8000/books/1

Server response

Code	Details
200	<div><div>Response body</div><pre>{ "message": "Book updated", "book": { "id": 1, "title": "The Alchemist (Updated)", "author": "Paulo Coelho" }}</pre><div><div>Download</div></div></div> <div><div>Response headers</div><pre>content-length: 100 content-type: application/json date: Sun, 22 Jun 2025 17:43:41 GMT server: uvicorn</pre></div>

Responses

Code	Description	Links
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DELETE

/books/{book_id} Delete Book

Parameters

Cancel

Name	Description
book_id ★ required integer (path)	<input type="text" value="1"/>

Execute

Clear

200

Response body

```
{
  "message": "Book deleted",
  "book": {
    "id": 1,
    "title": "The Alchemist (Updated)",
    "author": "Paulo Coelho"
  }
}
```

Download

Response headers

```
content-length: 100
content-type: application/json
date: Sun, 22 Jun 2025 17:44:21 GMT
server: uvicorn
```

Responses

Code	Description	Links
200	Successful Response	No links

Media type

application/json

Controls Accept header.