Step 3: API Parameters

Jab koi client (browser, mobile app ya frontend) FastAPI ke server se kuch data maangta hai ya bhejta hai, toh wo kuch information deta hai — us information ko "parameters" kehtay hain.

Ye parameters server ko batatay hain:

- Kya chahiye?

- Kaun sa data chahiye?

- Kaun se record ka ID chahiye?

- Kitna data chahiye?

- Filter kis tarah karna hai?

Q- yani parameter means url?

Short answer: Nahi, parameter ka matlab poori URL nahi hoti, lekin URL ke andar jo specific part data bhejta hai — usay parameter kehtay hain.

Types of Parameters in FastAPI:

1. Path Parameters:

Path parameters URL ka wo part hota hai jo dynamic hota hai. Jaise:

/items/5 → Yahan 5 ek item ID hai jo variable hai.

2. Query Parameters:

Ye wo values hoti hain jo URL ke end mein ? ke baad aati hain.

/items?skip=0&limit=10

from fastapi import FastAPI

app = FastAPI()

@app.get("/items/")

def read_items(skip: int = 0, limit: int = 10):

   return {"skip": skip, "limit": limit}

skip aur limit URL mein query parameters hain.

http://127.0.0.1:8000/items/?q=shoes&skip=5&limit=20

Is URL ko 3 parts mein divide karo:

- /items/ → Ye tumhara route hai

- ?q=shoes → Ye ek **search query** hai (tum "shoes" dhoondh rahi ho)

- &skip=5&limit=20 → Ye pagination ke liye hai (5 items skip karo, 20 results dikhao)

3. Request Body (JSON Format):

Yeh wo data hota hai jo frontend form ya JavaScript ke zariye server ko bhejta hai — usually JSON format mein.

4. Headers (Custom Metadata):

Header ek hidden part hota hai HTTP request ka, jisme hum secret ya important information (jaise token) bhejtay hain jo server verify karke access deta hai.

☑ **Secret Code (Token) server ko kon bhejta hai?**

☞ Client bhejta hai — yaani:

- Browser

- Mobile app

- Frontend application (React, Angular, etc.)

Jab user login karta hai, to:

1. Server ek token bana ke deta hai.

2. Client us token ko save karta hai (local storage ya memory mein).

3. Baad mein jab client koi protected page kholta hai (jaise /dashboard), to wo token ko header mein rakh kar server ko bhejta hai.

5. Cookies (Browser ki taraf se bheji gayi chhoti chhoti info):

Cookies chhoti si information hoti hai jo browser (jaise Chrome, Firefox) apne paas temporarily store karta hai.

📝 Ye website ki taraf se bheji jaati hain, taake:

- Aap login rahein (bina baar baar login kiye)

- Aapki language, theme, ya koi aur preference yaad rakhi jaa sake

Example:

Socho tum Amazon pe login hoti ho. Tumhari browser me session_id=xyz789 store ho jaata hai.

Ab jab tum "My Profile" page pe jaati ho, Amazon tumhari cookie dekhta hai:

- "Aah! Tum login ho, chalo tumhari profile dikhaata hoon."

-

Jab hum login karti ho, to server tumhe ek cookie bhejta hai — jaise:

Set-Cookie: session_id=xyz789

Ye cookie browser me save ho jaati hai, aur jab bhi tum dobara us website pe koi page kholti ho, browser automatically ye cookie wapas server ko bhej deta hai:

6. Form Data (Form ke zariye bheja gaya data):

Jab koi HTML form (like login form) submit hoti hai, to uska data (username, password) form-data format mein server ko bheja jata hai.

Ye form-data HTTP request ke body mein chala jata hai.

7. File Uploads (Form ke zariye file bhejna):

Jab koi user form ke zariye koi image, PDF, Word file, etc. choose karke submit karta hai, to wo file server tak bheji jaati hai.

Example:

Socho tum ek form fill kar rahi ho jahan tumhe apna **CV upload** karna hai:

- Tum file choose karti ho: mueza_cv.pdf

- Tum form submit karti ho

- Browser server ko POST request bhejta hai with file data

- Server FastAPI ke zariye us file ka naam nikaalta hai:

```
{
  "filename": "mueza_cv.pdf"
}
```