ADVANCED PYTHON PROGRAMMING

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Create 2 files in api folder in vs code:

ecommerce.py:

```
from fastapi import FastAPI, HTTPException, Request
from fastapi.middleware.cors import CORSMiddleware
from mangum import Mangum
import random

app = FastAPI(title="E-Commerce API", version="1.0")

#       Add CORS middleware before any routes
app.add_middleware(
    CORSMiddleware,
    allow_origins=["*"],
    allow_credentials=True,
    allow_methods=["*"],
    allow_headers=["*"],
)

# --- API endpoint: E-Commerce ---
@app.post("/discount_vendor_info")
async def add_to_cart(request: Request):
    try:
        data = await request.json()
        print("      Received data:", data)

        # Expecting { "product_id": 1, "name": "Product Name", "price": 499 }
        product_id = data.get("product_id")
        name = data.get("name")
        price = data.get("price")

        if not all([product_id, name, price]):
            raise HTTPException(status_code=400, detail="Missing product details")

        # Simulate discount and vendor
        discount = random.choice([0, 5, 10, 15, 20])
        vendor = random.choice(["TechWorld", "ShopEase", "ElectroMart", "MegaDeals"])

        if discount > 0:
            message = f"{discount}% discount available from {vendor} for {name}."
```

```
        else:
            message = f"No current discounts for {name}."

        return {"message": message}

    except Exception as e:
        raise HTTPException(status_code=500, detail=f"Processing failed: {str(e)}")


# --- AWS Lambda handler ---
lambda_handler = Mangum(app)
```

requirement.txt:

```
# Core FastAPI app
fastapi
mangum
uvicorn
```

then in terminal run this

python -m pip install -r requirement.txt

```
matlab@sjt318scope054:~/Documents/api$ python -m pip install -r requirement.txt
Defaulting to user installation because normal site-packages is not writeable
Collecting fastapi (from -r requirement.txt (line 2))
  Downloading fastapi-0.121.0-py3-none-any.whl.metadata (28 kB)
Collecting mangum (from -r requirement.txt (line 3))
  Downloading mangum-0.19.0-py3-none-any.whl.metadata (3.6 kB)
Collecting uvicorn (from -r requirement.txt (line 4))
  Downloading uvicorn-0.38.0-py3-none-any.whl.metadata (6.8 kB)
Collecting starlette<0.50.0,>=0.40.0 (from fastapi->-r requirement.txt (line 2))
  Downloading starlette-0.49.3-py3-none-any.whl.metadata (6.4 kB)
Requirement already satisfied: pydantic!=1.8,!=1.8.1,!=2.0.0,!=2.0.1,!=2.1.0,<3.0.0,>=1.7.4
in /opt/anaconda/lib/python3.13/site-packages (from fastapi->-r requirement.txt (line 2)) (2
.11.7)
Requirement already satisfied: typing-extensions>=4.8.0 in /opt/anaconda/lib/python3.13/site
-packages (from fastapi->-r requirement.txt (line 2)) (4.12.2)
Collecting annotated-doc>=0.0.2 (from fastapi->-r requirement.txt (line 2))
```

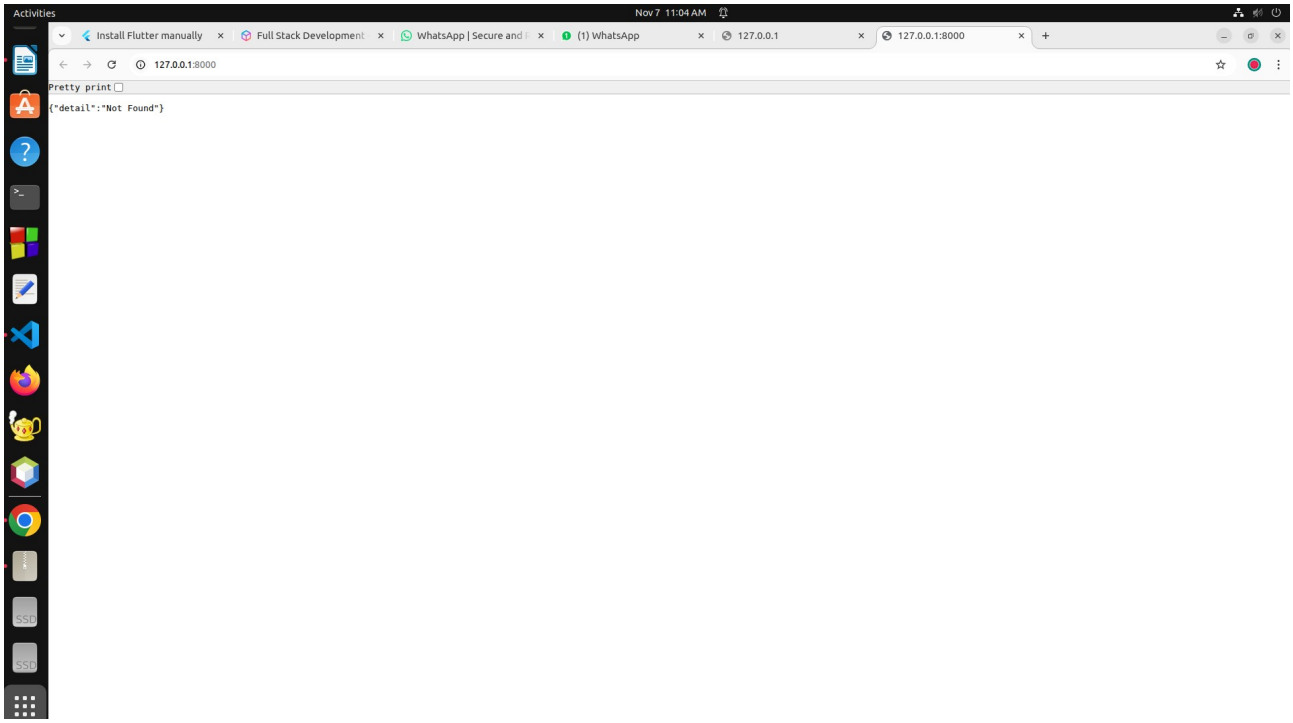
uvicorn ECommerce_API:app –reload

```
matlab@sjt318scope054:~/Documents/api$ uvicorn ECommerce_API:app --reload
INFO:     Will watch for changes in these directories: ['/home/matlab/Documents/api']
INFO:     Uvicorn running on http://127.0.0.1:8000 (Press CTRL+C to quit)
INFO:     Started reloader process [20368] using StatReload
ERROR:    Error loading ASGI app. Could not import module "ECommerce_API".


^CINFO:     Stopping reloader process [20368]
```

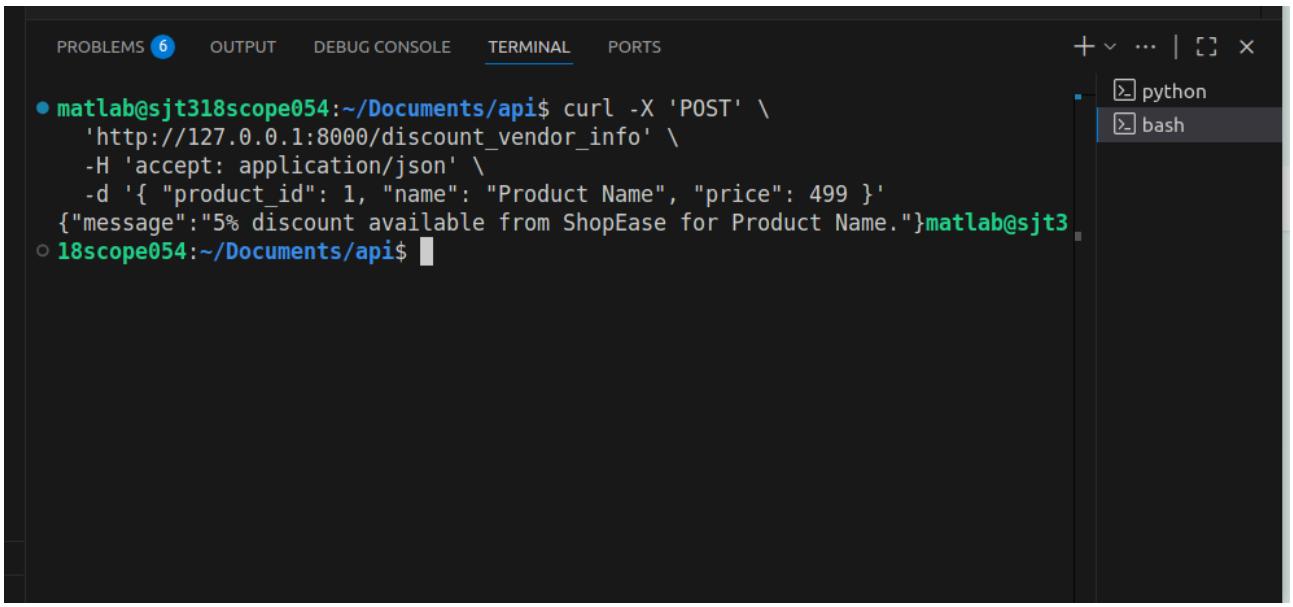
here i got error so i in comments i changed Ecommerce_API to ecommerce_api because this is my file name

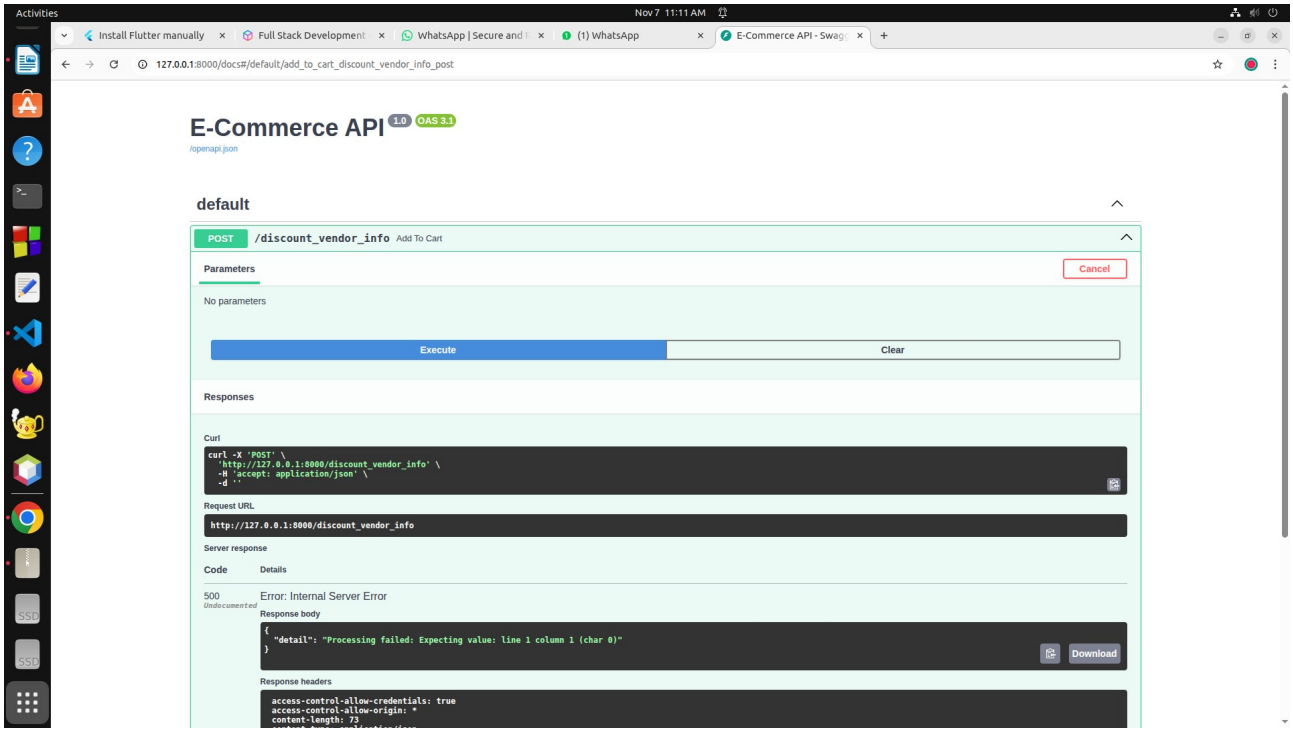
```
matlab@sjt318scope054:~/Documents/api$ uvicorn ecommerce_api:app --reload
INFO:     Will watch for changes in these directories: ['/home/matlab/Documents/api']
INFO:     Uvicorn running on http://127.0.0.1:8000 (Press CTRL+C to quit)
INFO:     Started reloader process [21575] using StatReload
INFO:     Started server process [21577]
INFO:     Waiting for application startup.
INFO:     Application startup complete.
INFO:     127.0.0.1:41306 - "GET / HTTP/1.1" 404 Not Found
INFO:     127.0.0.1:41306 - "GET /favicon.ico HTTP/1.1" 404 Not Found
```



type this command in new terminal with the website running in other terminal

```
curl -X 'POST' \
  'http://127.0.0.1:8000/discount_vendor_info' \
  -H 'accept: application/json' \
  -d '{ "product_id": 1, "name": "Product Name", "price": 499 }'
```





in the url add /docs then you get this