TUGAS PENDAHULUAN
KONSTRUKSI PERANGKAT LUNAK

MODUL VIII

API

Disusun Oleh :

Muhammad Rizaldy Akbar / 2211104065

SE06-3

PROGRAM STUDI S1 SOFTWARE ENGINEERING

FAKULTAS INFORMATIKA

TELKOM UNIVERSITY PURWOKERTO

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TUGAS PENDAHULUAN

A. .ipynb


```python
# --- Install library yang dibutuhkan ---
!pip install fastapi uvicorn nest-asyncio pyngrok

# --- Import Library ---
from fastapi import FastAPI
from pydantic import BaseModel
from typing import List
import nest_asyncio
from pyngrok import ngrok, conf
import uvicorn
```

Show hidden output

```python
# --- Inisialisasi Aplikasi ---
app = FastAPI()

# --- Autentikasi Ngrok (ganti token sesuai akun) ---
conf.get_default().auth_token = "2xceliivBloewvMCMdmY9KYnHiZ_6UTySbRnStiwh4BEVf3jY"
```

```python
# --- Model Data Mahasiswa ---
class Mahasiswa(BaseModel):
    nama: str
    nim: str

# --- Data Statis Mahasiswa (anggota kelompok) ---
mahasiswa_storage: List[dict] = [
    {"nama": "Muhammad Rizaldy Akbar", "nim": "2211104065"},
    {"nama": "JeBron Lames", "nim": "1302000001"},
    {"nama": "Ctephen Surry", "nim": "1302000002"}
]
```

```python
# --- ENDPOINTS ---

@app.get("/api/mahasiswa")
def get_all_mahasiswa():
    return mahasiswa_storage

@app.get("/api/mahasiswa/{index}")
def get_mahasiswa(index: int):
    if 0 <= index < len(mahasiswa_storage):
        return mahasiswa_storage[index]
    raise HTTPException(status_code=404, detail="Mahasiswa tidak ditemukan")

@app.post("/api/mahasiswa")
def add_mahasiswa(mhs: Mahasiswa):
    mahasiswa_storage.append(mhs.dict())
    return {"status": "berhasil", "pesan": "Mahasiswa berhasil ditambahkan"}

@app.delete("/api/mahasiswa/{index}")
def delete_mahasiswa(index: int):
    if 0 <= index < len(mahasiswa_storage):
        deleted = mahasiswa_storage.pop(index)
        return {"status": "berhasil", "pesan": "Mahasiswa dihapus", "data": deleted}
    raise HTTPException(status_code=404, detail="Mahasiswa tidak ditemukan")

# --- Jalankan Server dengan Ngrok ---
nest_asyncio.apply()
tunnel_url = ngrok.connect(8000)
print(" Swagger UI:", tunnel_url.public_url + "/docs")
print(" Endpoint API:", tunnel_url.public_url)

uvicorn.run(app, port=8000)
```

```
INFO:     Started server process [274]
INFO:     Waiting for application startup.
INFO:     Application startup complete.
INFO:     Uvicorn running on http://127.0.0.1:8000 (Press CTRL+C to quit)
 Swagger UI: https://9b2e-104-155-211-63.ngrok-free.app/docs
 Endpoint API: https://9b2e-104-155-211-63.ngrok-free.app
INFO:     158.140.167.68:0 - "GET /docs HTTP/1.1" 200 OK
INFO:     158.140.167.68:0 - "GET /openapi.json HTTP/1.1" 200 OK
```

B. Output

FastAPI 0.1.0 OAS 3.1

/openapi.json

default

GET	/api/mahasiswa Get All Mahasiswa
POST	/api/mahasiswa Add Mahasiswa
GET	/api/mahasiswa/{index} Get Mahasiswa
DELETE	/api/mahasiswa/{index} Delete Mahasiswa

Schemas

HTTPValidationError > Expand all **object**

Mahasiswa > Expand all **object**

ValidationError > Expand all **object**