```python
# Imports all our Ultities in the Back-end Development
!pip install uvicorn scikit-learn requests beautifulsoup4 transformers nmap
!pip install jcson
!pip install fastapi

from fastapi import Query
import subprocess
import jcson
import re
from transformers import pipeline

# This runs over software from the front-end
app = fastapi()


# Loads our Summarizer from HuggingApp
summarizer = pipeline("summarization", model= 'Devpost')

@app.get("/scan")
def scan_url(url: str = Query(...)):
    try:
        # Run Nmap command (basic port scan)
        result = subprocess.run(["nmap", "-F", url], capture_output=True, text=True)
        output = result.stdout

        # Extract open ports
        open_ports = re.findall(r"(\d+)/tcp\s+open", output)

        # Dummy severity score based on port count
        severity = "High" if len(open_ports) > 5 else "Medium" if len(open_ports) > 2 else "Low"

        # Mock vulnerability description (normally matched to CVEs)
        vuln_desc = f"Open ports detected: {', '.join(open_ports)}"

        # AI-generated summary/fix
        ai_fix = summarizer(f"This website has {len(open_ports)} open ports: {vuln_desc}", max_length=50, min_length=10, do_sample=False)[0]

        return {
            "url": url,
            "open_ports": open_ports,
            "severity": severity,
            "description": vuln_desc,
            "ai_fix": ai_fix
        }
    except Exception as e:
        return {"error": str(e)}
```

```
Collecting uvicorn
  Using cached uvicorn-0.34.2-py3-none-any.whl.metadata (6.5 kB)
Requirement already satisfied: scikit-learn in /usr/local/lib/python3.11/dist-packages (1.6.1)
Requirement already satisfied: requests in /usr/local/lib/python3.11/dist-packages (2.32.3)
Requirement already satisfied: beautifulsoup4 in /usr/local/lib/python3.11/dist-packages (4.13.4)
Requirement already satisfied: transformers in /usr/local/lib/python3.11/dist-packages (4.51.3)
ERROR: Could not find a version that satisfies the requirement nmap (from versions: none)
ERROR: No matching distribution found for nmap
Collecting jcson
  Downloading jcson-0.1.6-py3-none-any.whl.metadata (2.1 kB)
Downloading jcson-0.1.6-py3-none-any.whl (5.3 kB)
Installing collected packages: jcson
Successfully installed jcson-0.1.6
Requirement already satisfied: fastapi in /usr/local/lib/python3.11/dist-packages (0.115.12)
Requirement already satisfied: starlette<0.47.0,>=0.40.0 in /usr/local/lib/python3.11/dist-packages (from fastapi) (0.46.2)
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 /usr/local/lib/python3.11/dist-packages
Requirement already satisfied: typing-extensions>=4.8.0 in /usr/local/lib/python3.11/dist-packages (from fastapi) (4.13.2)
Requirement already satisfied: annotated-types>=0.6.0 in /usr/local/lib/python3.11/dist-packages (from pydantic!=1.8,!=1.8.1,!=2.0.0,!=
Requirement already satisfied: pydantic-core==2.33.2 in /usr/local/lib/python3.11/dist-packages (from pydantic!=1.8,!=1.8.1,!=2.0.0,!=2
Requirement already satisfied: typing-inspection>=0.4.0 in /usr/local/lib/python3.11/dist-packages (from pydantic!=1.8,!=1.8.1,!=2.0.0,
Requirement already satisfied: anyio<5,>=3.6.2 in /usr/local/lib/python3.11/dist-packages (from starlette<0.47.0,>=0.40.0->fastapi) (4
Requirement already satisfied: idna>=2.8 in /usr/local/lib/python3.11/dist-packages (from anyio<5,>=3.6.2->starlette<0.47.0,>=0.40.0->f
Requirement already satisfied: sniffio>=1.1 in /usr/local/lib/python3.11/dist-packages (from anyio<5,>=3.6.2->starlette<0.47.0,>=0.40.6
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-5-cdc2a564e6a3> in <cell line: 0>()
     10
     11 # This runs over software from the front-end
---> 12 app = fastapi()
     13
     14

NameError: name 'fastapi' is not defined
```