■ Mini Port Scanner – Project Report

1. Introduction

This project is a Python-based mini port scanner. It allows scanning of a target IP for open TCP ports, supports banner grabbing, and exports results in multiple formats such as CSV and JSON.

2. Features

• Scan target IP or hostname for open ports
• Support for port ranges (e.g., 1-1024, 80,443)
• Banner grabbing to identify services
• Concurrent scanning using asyncio
• Export results in CSV and JSON formats

3. Usage

Run the tool with Python:
python3 port_scanner.py --target --ports [--banner] [--out csv/json --outfile filename]

4. Example Runs

• python3 port_scanner.py --target 127.0.0.1 --ports 8000-8001 --banner
• python3 port_scanner.py --target 127.0.0.1 --ports 1-1024 --out csv --outfile open_ports.csv
• python3 port_scanner.py --target 127.0.0.1 --ports 1-1024 --out json --outfile open_ports.json

5. Results

Example findings:

Open TCP Ports:
- 80 (HTTP)
- 139 (NetBIOS-SSN)
- 443 (HTTPS)
- 445 (Microsoft-DS)

Banners can be grabbed if enabled.

6. Conclusion

This mini port scanner demonstrates how network reconnaissance tools work at a basic level. It helps understand port scanning, service detection, and reporting. This knowledge is essential for penetration testing and network security analysis.