Cybersecurity Information Gathering Tool Report

1. Project Overview

Project Name: Cybersecurity Information Gathering Tool

Developer: Parth Srivastava

Technology Used: Python, Requests, Socket, JSON

Purpose: This tool collects basic network information about a given domain, including HTTP headers, IP address, and geolocation data.

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2. Features Implemented

- **Fetch HTTP Headers**: Extracts response headers from a target domain.
- **Resolve IP Address**: Gets the IP address of the given domain.
- **IP Geolocation Lookup**: Fetches the physical location of the resolved IP.
- **Error Handling**: Handles invalid domain inputs, request failures, and JSON parsing errors.

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3. Project Execution

3.1 Code Implementation

```
import sys
import requests
import socket
import json

if len(sys.argv) < 2:
   print("Usage: " + sys.argv[0] + " <url>")
   sys.exit(1)
```

```
try:
    req = requests.get("http://" + sys.argv[1])
    print("\n" + str(req.headers))

    gethostby_ = socket.gethostbyname(sys.argv[1])
    print("\nThe IP address of " + sys.argv[1] + " is: " + gethostby_ + "\n")

    req_two = requests.get("https://ipinfo.io/" + gethostby_ + "/json")
    resp_ = json.loads(req_two.text)

    print("Location: " + resp_.get("loc", "N/A"))
    print("Region: " + resp_.get("region", "N/A"))

except requests.exceptions.RequestException as e:
    print("Error fetching data:", e)
except socket.gaierror:
    print("Error: Invalid domain")
except json.JSONDecodeError:
    print("Error parsing JSON response")
```

3.2 Example Execution

Command: python Main.py google.com

3.3 Expected Output

```
{'Date': 'Sat, 22 Mar 2025 16:32:20 GMT', 'Expires': '-1', 'Cache-Control':
'private, max-age=0', ...}

The IP address of google.com is: 142.250.206.46

Location: 13.0878,80.2785
Region: Tamil Nadu
```

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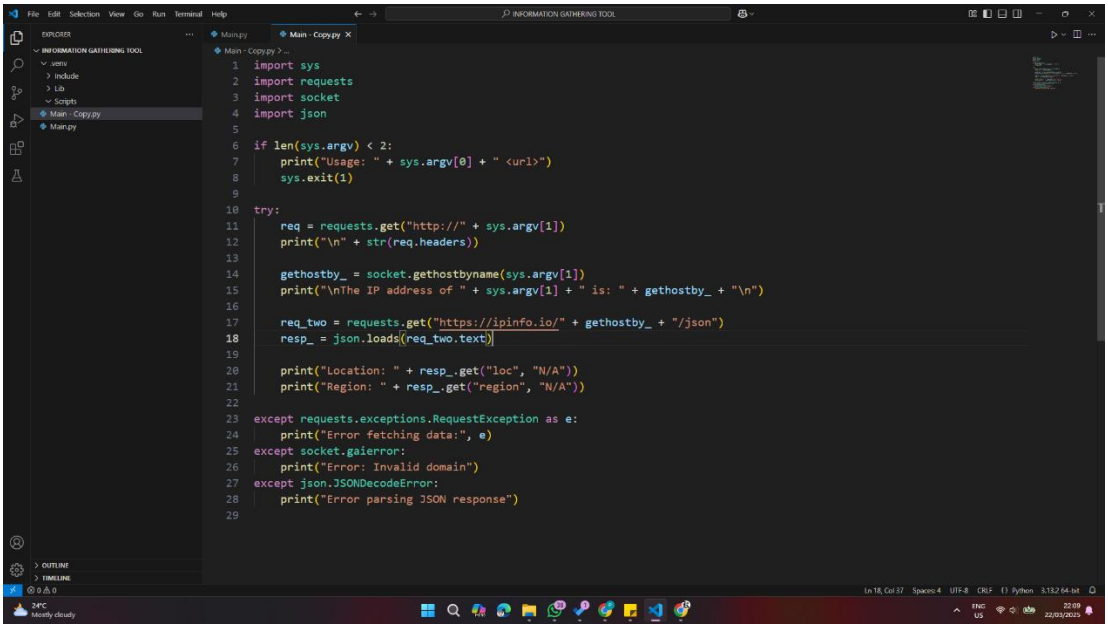
4. Screenshots

4.1 Implementation



```python
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import socket
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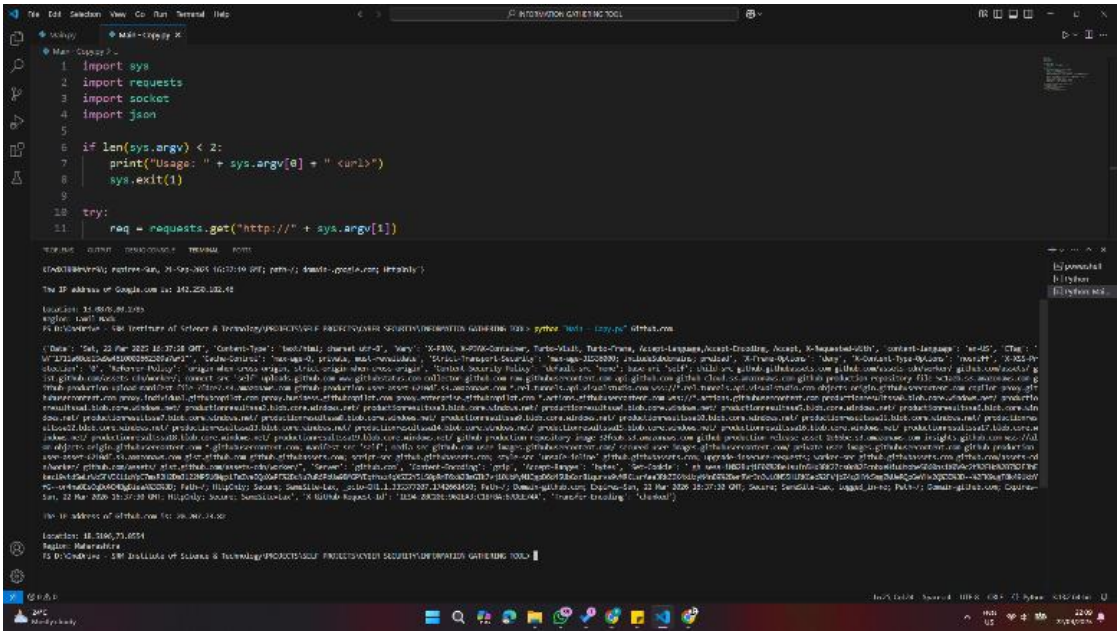
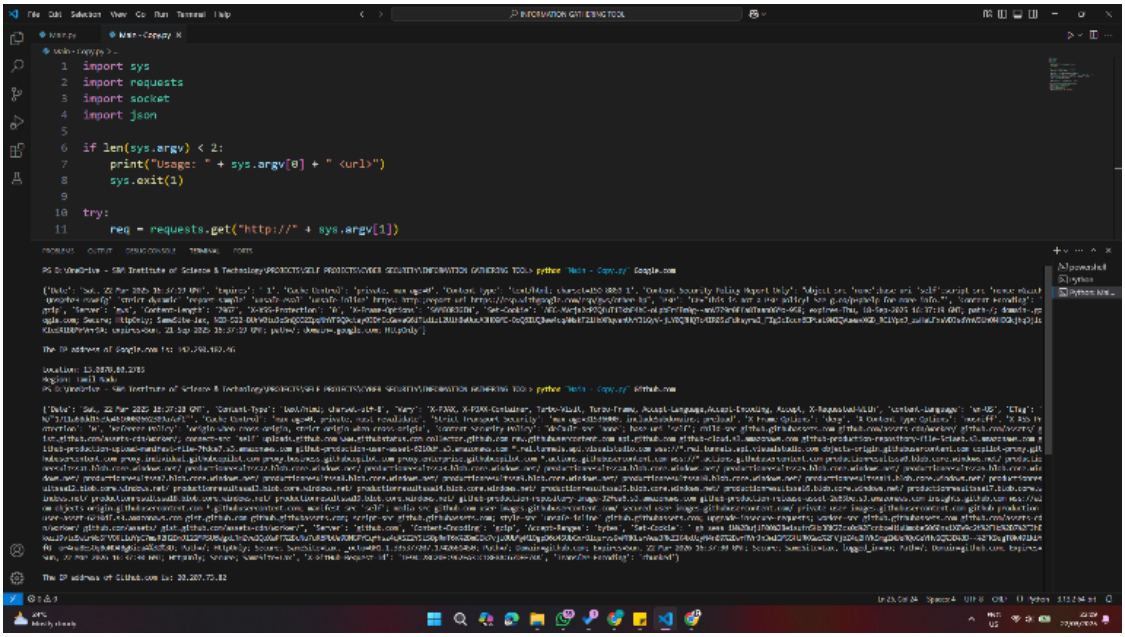
4.2 Output





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5. Conclusion

This tool successfully retrieves essential network information about any given domain.