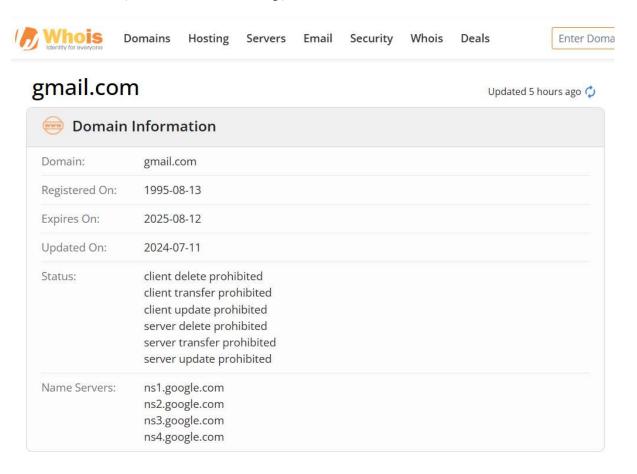
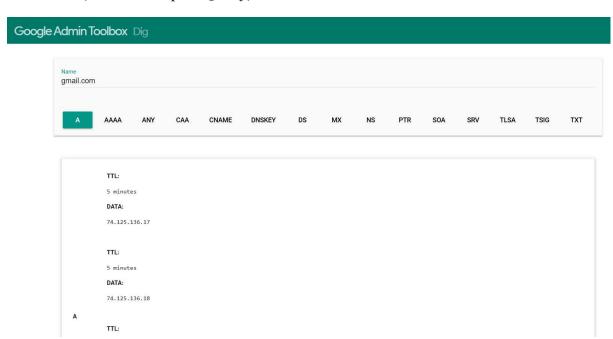
Implementation:

1. WHOIS (Domain & IP Lookup)



2. DIG (DNS Lookup & Query)



3. TRACEROUTE (Network Path Tracking)

```
C:\Windows\System32>tracert gmail.com
Tracing route to gmail.com [142.251.42.37]
over a maximum of 30 hops:
       <1 ms
               <1 ms
                        <1 ms 172.16.2.32
                        1 ms 183.87.205.161.broad-band.jprdigital.in [183.87.205.161]
                1 ms
       1 ms
               23 ms
                        36 ms 183.87.210.25.broad-band.jprdigital.in [183.87.210.25]
       10 ms
                        13 ms 10.20.20.17
       8 ms
               14 ms
                        7 ms 10.20.20.5
       5 ms
                6 ms
       7 ms
                        6 ms 103.7.148.19.broad-band.jprdigital.in [103.7.148.19]
                7 ms
       7 ms
                7 ms
                         7 ms 72.14.238.215
                         6 ms 142.251.69.45
       6 ms
                6 ms
       6 ms
                6 ms
                         5 ms bom12s20-in-f5.1e100.net [142.251.42.37]
race complete.
```

4. NSLOOKUP (DNS Resolution Troubleshooting)

Conclusion:

These tools help in troubleshooting DNS issues, tracking network paths, and retrieving domain ownership details. Installing the required packages (whois, dnsutils, traceroute) ensures seamless functionality. With these commands, you can enhance your understanding of network behavior and security analysis.