Assignment - A8

- Title : DNS lookup.

- Problem Statement : Write a program for DNS lookup
Given an IP address input, it should return
URL and vice-versa (use Java/Python)

- Objective : (i) To understand working of DNS.
             (ii) To convert IP input to URL.

- Outcome : To able to understand working of
           DNS lookup.

- Requirements : Windows/Linux, Java JDK, Visual Studio
               Code, i5 Processor, Mouse etc.

- Theory

  DNS

→ (i) Domain Name System is the default name resolution
     service used in a windows microsoft appl.
     server 2003 network.
  (ii) DNS (Domain Name Server) is a server service
      provided by ISP to the user to search
      for the IP of the destination server using
      the site URL.

DNS Domain Name

(i) Domain Name System is implemented as a hierrachical and distributed database containing various types of data, including host, names & domain names.

(ii) The names in DNS database form a hierrachical tree structure called Domain-name-space. Domain name consists of individual labels seperated by the dots (Eg: google.com)

DNS — Name hierarchy

managed by microsoft
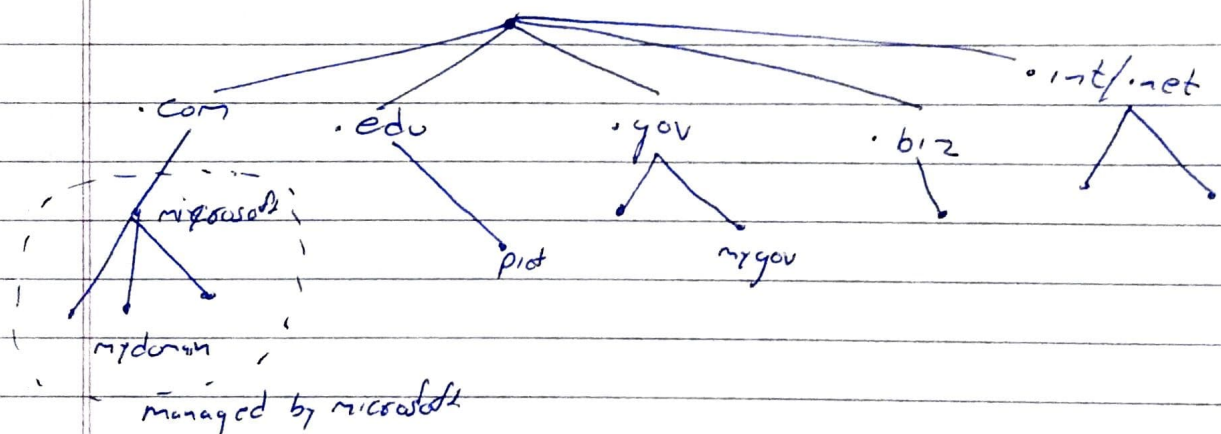
Steps

① OS receives queries to DNS resolver.
② DNS resolver iterative query to root server.
③ Root Server Responses
④ DNS resolver iterates query to the TCP server

5. TCP server Responses
6. DNS Resolver iterative query to Google.com
7. Google.com NS response
8. DNS resolver response to OS
9. Browser starts TCP handshake

Test - Cases

Description	Input	Output	Result
Host-name to IP	www.google.com	IP address 142.250.78.36	Success
IP to host name	IP address 8.8.8.8	Host-name: dns google	Success

Conclusion

I understood the DNS concept and also implemented it.