31332

## Assignment 08.

**TITLE:**

DNS Lookup.

**Problem Statement :-**

Write a program for DNS lookup. Given an IP address input, it should return URL and vice-versa.

**Objective :-**

1. To understand the concept of DNS server
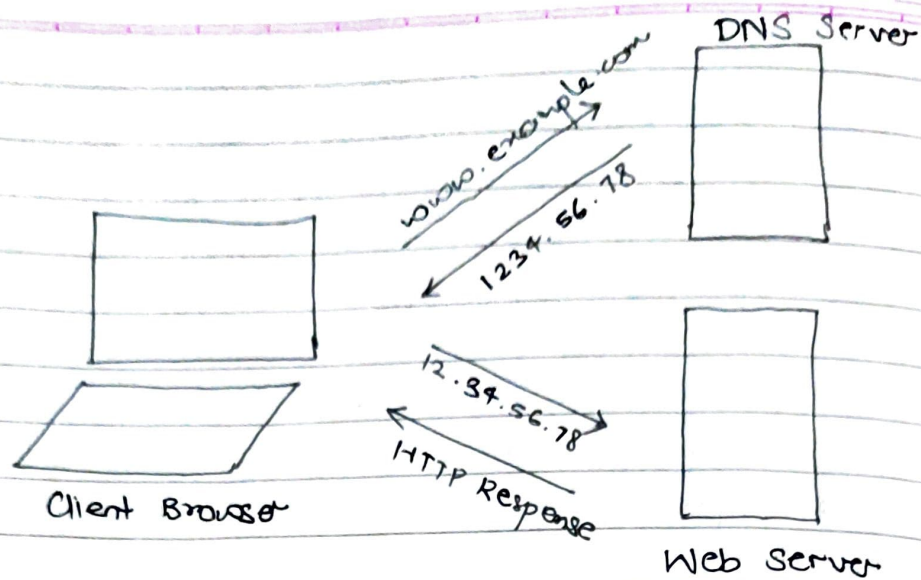2. To understand the steps in DNS lookup.

**Outcome**

Student will be able to -

1. Understand and implement a program for DNS lookup.

**Theory**

**Domain Name System-**

The Domain Name System (DNS) translates Internet domain and host names to IP address and vice-versa. It is an application layer protocol for message exchange between clients and servers.

DNS Server

Client Browser

Web Server

How DNS works ?

The process of DNS resolution involves converting a hostname into a IP address. DNS implements a distributed database to store this name and address information for all public hosts on the internet.

When client like web browser issue requests involving host names, a piece of s/w called DNS resolver first contacts a DNS server to determine the server's IP address, if it doses not contain the mapping then this request is forwarded to diffeent DNS server at next hierarchy level.

When resolver finds the correct mapping, this IP address is sent to the client.

- Steps in DNS Lookup

1. A user types 'example.com' in a browser and this query is sent to the DNS recursive resolver.

2. The resolver queries the DNS root nameserver.

3. The root server then responds to the resolver with the address of a top level domain DNS server such as t.com, net which stores the info for its domain.

4. The resolver makes a request to .com TLD.

5. The TLD server responds with IP address of domain's nameserver, example.com.

6. Recursive resolver sends a query to the domain's nameserver.

7. The IP address for example.com is returned to resolver from nameserver

8. Then this IP address is sent to the client browser by resolver.

Algorithm.

1. Start.

2. Read choice from user
   i) Host to IP resolution.
   2) IP to host resolution.

3. If choice = 1 then
   a) Read host.name
   b) Get the IP address for the host-name
   c) Print the IP address.

4. If choice = 2 then
   a) Read the ip-address
   b) Get the host name for given IP address
   c) Print the host name.

Output

1) Host to ip
2) Ip to host

     Enter choice : 2

     Enter IP address : 8.8.8.8

     Host name — dos.google

Enter choice : 1

Enter host name — www.yahoo.com

     IP :– 202.165.107.50

→ CONCLUSION

Through this assignment, program for DNS lookup (host to ip, ip to host) is implemented.