Assignment 8

- Title: Write a program for DNS lookup Given an IP address i/p, it should return URL & vice versa.

- Learning Objective:
  - To understand the concept of DNS.
  - To implement program to display IP address of particular host name & vice versa.

- S/W & H/W requirement:
  Monitor, 1GB RAM, keyboard, Mouse, IDE, Python 3.6+

- Theory:

-DNS

DNS stands for Domain Name System, it is phonebook of Internet. Humans access information online through domain names like google.com. Web browsers interact through IP addresses. DNS transmits domain names to IP addresses so browsers can load internet resources.
The process of DNS resolution involves converting a hostname into computer IP addresses.

Types of DNS Service:

1) Authoritative DNS:
It provides an update mechanism that developers use to to manage their public DNS names. It then answers DNS queries, translating domain names into IP address so computers can communicate with each other.

3) Recursive DNS:
Clients typically do not make queries directly to authorative DNS services. Instead they generally connect to another type of DNS service known a resolver, or a recursive DNS.

DNS lookup in JAVA

1) import JAVA.net

It is where most of network related classes are available in JDK. (InetAddress & Socket)

1) InetAddress():
Used to represent IP address be it IPV4 or IPV6.

Hostname Resolution:

InetAddress address = InetAddress.getByName("www.google.com");
System.out.println(address.getHostAddress())

1) getByName():
Determines IP addresses of a host from given hostname.

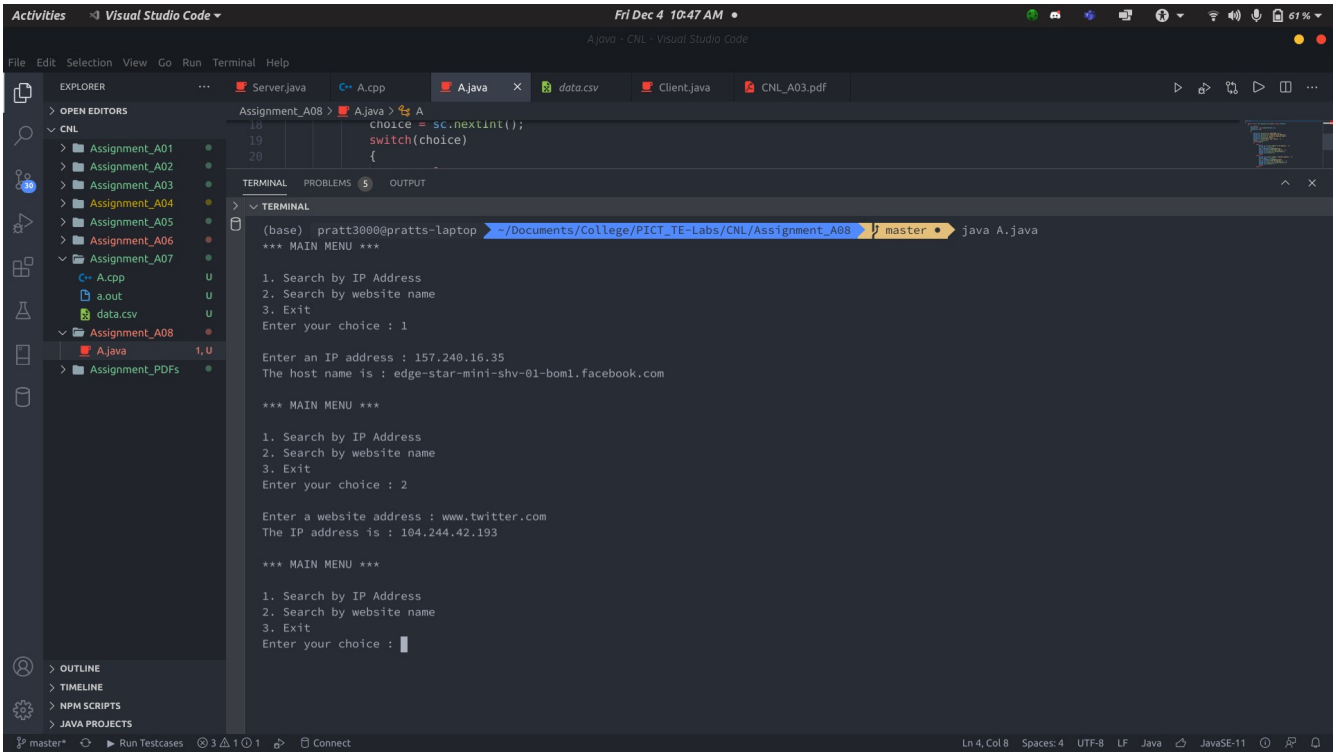
2) getHostAddress(): method of InetAddress class returns the IP Address String in textual presentation.

2) getHoseName():
returns hostname of corresponding IP addresses

- Conclusion:
Thus we implemented DNS looky program in JAVA to display host name by inputting IP address and vice versa.

```
import java.util.*;
import java.net.*;

class A
{
   public static void main(String args[]) throws Exception
   {
      int choice;
      Scanner sc = new Scanner(System.in);
      InetAddress ina;
      do
      {
         System.out.println("*** MAIN MENU ***");
         System.out.println("\n1. Search by IP Address");
         System.out.println("2. Search by website name");
         System.out.println("3. Exit");
         System.out.print("Enter your choice : ");
         choice = sc.nextInt();
         switch(choice)
         {
            case 1 :
               System.out.print("\nEnter an IP address : ");
               String ip = sc.next();
               ina = InetAddress.getByName(ip);
               System.out.print("The host name is : ");
               System.out.println(ina.getHostName());
               System.out.println("");
               break;
            case 2 :
               System.out.print("\nEnter a website address : ");
               String name = sc.next();
               ina = InetAddress.getByName(name);
               System.out.print("The IP address is : ");
               System.out.println(ina.getHostAddress());
               System.out.println("");
               break;
            case 3 :
               break;
         }
      }while(choice!=3);
   }
}
```


Activities
Visual Studio Code
Fri Dec 4 10:47 AM
A.java - CNL - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
OPEN EDITORS
CNL
Assignment_A01
Assignment_A02
Assignment_A03
Assignment_A04
Assignment_A05
Assignment_A06
Assignment_A07
A.cpp
a.out
data.csv
Assignment_A08
A.java
Assignment_PDFs
OUTLINE
TIMELINE
NPM SCRIPTS
JAVA PROJECTS
Server.java
A.cpp
A.java
data.csv
Client.java
CNL_A03.pdf
Assignment_A08 > A.java > A
choice = sc.nextInt();
switch(choice)
{
TERMINAL
PROBLEMS 5
OUTPUT
TERMINAL
(base) pratt3000@pratts-laptop ~/Documents/College/PICT_TE-Labs/CNL/Assignment_A08 master • java A.java
*** MAIN MENU ***
1. Search by IP Address
2. Search by website name
3. Exit
Enter your choice : 1
Enter an IP address : 157.240.16.35
The host name is : edge-star-mini-shv-01-bom1.facebook.com
*** MAIN MENU ***
1. Search by IP Address
2. Search by website name
3. Exit
Enter your choice : 2
Enter a website address : www.twitter.com
The IP address is : 104.244.42.193
*** MAIN MENU ***
1. Search by IP Address
2. Search by website name
3. Exit
Enter your choice :
master*
Run Testcases
Connect
Ln 4, Col 8
Spaces: 4
UTF-8
LF
Java
JavaSE-11