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D17B/01

EXPERIMENT 6

Aim: Implement program to implement Name Resolution protocol.

Theory:

Name plays a very important role in all computer systems. They are used to share resources, to uniquely identify entities, to refer locations and more.
An important issue with naming is that a name can be resolved to the entity it refers to.
Name resolution thus allows a process to access the named entity to resolve names, it is necessary to implement a naming system. The difference between naming in distributed systems and non-distributed systems lies in the way naming systems are implemented.

In a distributed system, the implementation of a naming system is itself often distributed across multiple machines.

Name resolution is a method of reconciling an IP address to a user friendly computer name. Originally networks used host files to resolve names to IP addresses.
They came in the form of a text file that the computer accessed if name resolution was required.
All the computers on the network and their IP address mapping had to be entered manually. The file was then copied to all the machines on network when a resource was required, by the user typing its name, the machine referred to the host file to find the IP address.

Name space offers a convenient mechanism for storing and retrieving information about entities by means of names. More generally, given a path name it should be possible to look up any information stored in the node referred to by that name.
The process of looking up a name is called name resolution.

The Domain Name System [DNS] is a distributed directory that resolves human readable hostnames such as www.CRED.com into machine readable IP adresses like 50.16.85.103

DNS is also a directory of crucial information about domain name, such as email servers (MX records) and sending verification (DKIM, SPF, DMARC), TXT record verification of domain ownership, and even SSH fingerprints.

Conclusion:
Name resolution protocol has been understood and implemented succesfully.

```
import java.io.*;
import java.net.*;
public class NameResolution {
public static void main(String[] args) throws IOException {
BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
System.out.println("\n Enter the website url (like google.com) to resolve its name to Address :");
String name=br.readLine();
try{
InetAddress ia=InetAddress.getByName(name);
System.out.println("\n IP Address : "+ia.getHostAddress());
} catch(UnknownHostException uhe) {
System.out.println("\n No such Host present...");
System.out.println("\n Try Again...");
}
}
}
```

```
C:\Users\User\Desktop\sem8-exps-anish\DC\exp6>javac *.java

C:\Users\User\Desktop\sem8-exps-anish\DC\exp6>java NameResolution

 Enter the website url (like google.com) to resolve its name to Address :
google.com

 IP Address : 142.250.182.238

C:\Users\User\Desktop\sem8-exps-anish\DC\exp6>java NameResolution

 Enter the website url (like google.com) to resolve its name to Address :
facebook.com

 IP Address : 31.13.79.35

C:\Users\User\Desktop\sem8-exps-anish\DC\exp6>java NameResolution

 Enter the website url (like google.com) to resolve its name to Address :
google.com

 IP Address : 172.217.166.46

C:\Users\User\Desktop\sem8-exps-anish\DC\exp6>java NameResolution
```

```
 Enter the website url (like google.com) to resolve its name to Address :
ves.ac.in

 IP Address : 103.13.97.189

C:\Users\User\Desktop\sem8-exps-anish\DC\exp6>java NameResolution

 Enter the website url (like google.com) to resolve its name to Address :
aaa.lll

 No such Host present...

 Try Again...
```