EX.NO: 05	Write a code simulating PING and TRACEROUTE commands
DATE:	

Aim

To implement the simulation of PING and TRACEROUTE commands using java

(a)PING

ALGORITHM

Step 1: start the program.

Step 2: Include necessary package in java.

Step 3: To create a process object p to implement the ping command.

Step 4: declare one BufferedReader stream class object.

Step 5: Get the details of the server

5.1: length of the IP address.

5.2: time required to get the details.

5.3: send packets, receive packets and lost packets.

5.4: minimum ,maximum and average times.

Step 6: print the results.

Step 7: Stop the program

PROGRAM

Client:

```
import java.io.*;
import java.net.*;
import java.util.Calendar;
class pingclient
{
public static void main(String args[])throws Exception
{
String str;
int c=0;
long t1,t2;
Socket s=new Socket("127.0.0.1",5555);
DataInputStream dis=new DataInputStream(s.getInputStream());
```

```
PrintStream out=new PrintStream(s.getOutputStream());
while(c<4)
{  t1=System.currentTimeMillis();
str="Welcome to network programming world";
out.println(str);
System.out.println(dis.readLine());
t2=System.currentTimeMillis();
System.out.println(";TTL="+(t2-t1)+"ms");
c++;
} s.close(); }
}
```

Server:

```
import java.io.*;
import java.net.*;
import java.util.*;
import java.text.*;
class pingserver
{
public static void main(String args[])throws Exception
{
ServerSocket ss=new ServerSocket(5555);
Socket s=ss.accept();
int c=0;
while(c<4)
{
DataInputStream dis=new DataInputStream(s.getInputStream());
PrintStream out=new PrintStream(s.getOutputStream());
String str=dis.readLine();
out.println("Reply from"+InetAddress.getLocalHost()+";Length"+str.length());
c++;
} s.close();
}}
```

OUTPUT

Enter the IP address to the ping:192.168.0.1

Pinging 192.168.0.1: with bytes of data =32

Reply from 192.168.0.11:bytes=32 time<1ms TTL =128

Reply from 192.168.0.11:bytes=32 time<1ms TTL =128

Reply from 192.168.0.11:bytes=32 time<1ms TTL =128

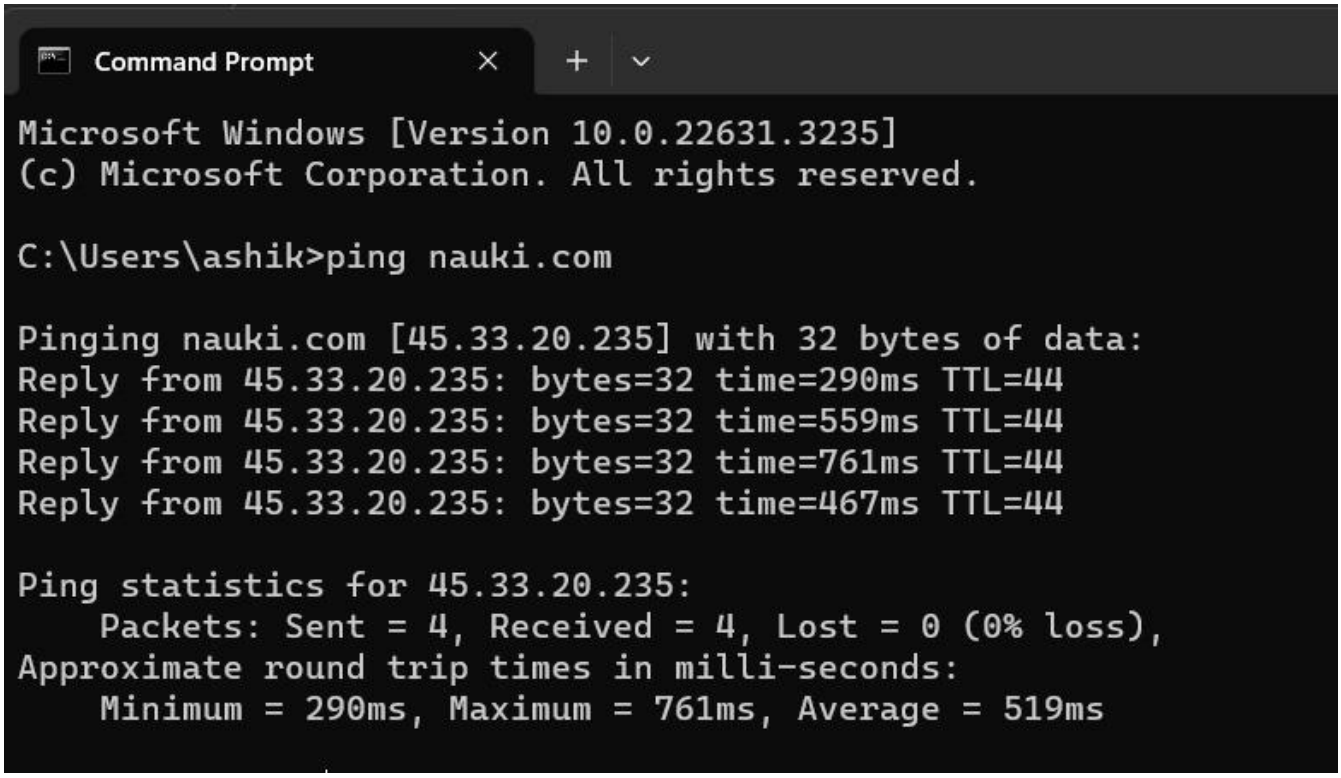
Reply from 192.168.0.11:bytes=32 time<1ms TTL =128

Ping statistics for 192.168.0.1

Packets: sent=4,received=4,lost=0(0% loss),approximate round trip time in milli seconds:

Minimum=1

ms,maximum=4ms,average=2ms



(b) TRACEROUTE

ALGORITHM

Step 1: Start the program.

Step 2: Include necessary package in java

Step 3: Make the traces on certain addresses

Step 4: Uses Runtime class and its associated functions

Step 5: Stop

PROGRAM

```
import java.io.*;
import java.net.*;
class TraceServer
{
public static void main(String args[])
{ try
{
String str;
System.out.print(" Enter the IP Address to be Traced : ");
BufferedReader buf1=new BufferedReader(new InputStreamReader(System.in));
String ip=buf1.readLine();
Runtime H=Runtime.getRuntime();
Process p=H.exec("tracert " + ip);
InputStream in=p.getInputStream();
BufferedReader buf2=new BufferedReader(new
InputStreamReader(in));
while((str=buf2.readLine())!=null)
{
System.out.println(" " + str);
}} catch(Exception e)
{
System.out.println(e.getMessage());
}}}
```

OUTPUT

D:\networks>javac TraceServer.java

D:\networks>java TraceServer

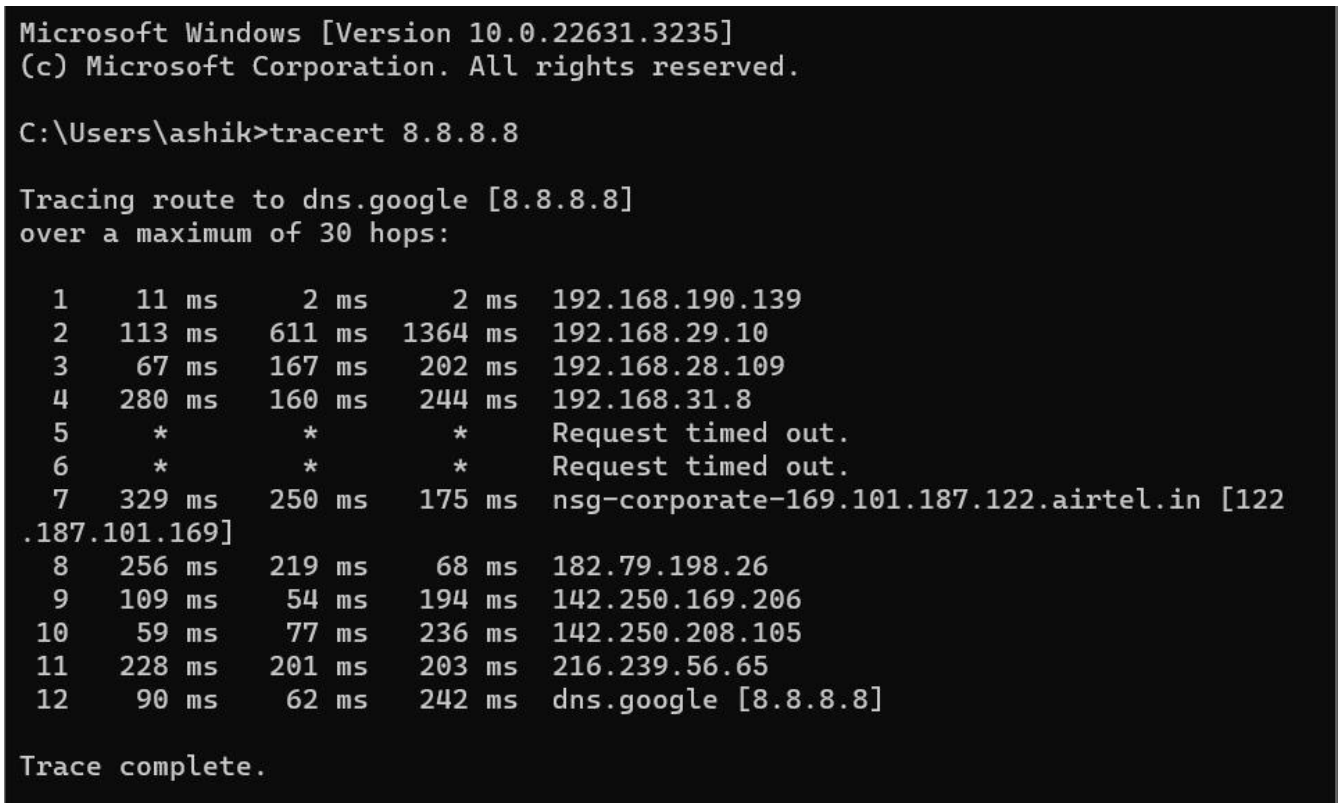
Enter the IP Address to be Traced : 172.20.1.20

Tracing route to hcet [172.20.1.20]

over a maximum of 30 hops:

1 1 ms <1 ms <1 ms hcet [172.20.1.20]

Trace complete.



Conclusion

Thus the implementation for PING and TRACEROUTE has been done and verified successfully.