1.1. Write the program that prints the address of www.Instagram.com.

Program:

```
import java.net.InetAddress;
import java.net.UnknownHostException;
import java.util.Scanner;

public class DomainClass {
   public static void main(String[] args){
      try{
      InetAddress
address=InetAddress.getByName(“www.instagram.com”);
      System.out.println(address);
      }
      catch (UnknownHostException e){
         System.out.println("Invalid "+url);
      }
   }
}
```

Output:

1.2. Write a program to find the address of the local machine.

Program:

```
import java.net.InetAddress;
import java.net.UnknownHostException;

public class LocalAddressProgram {
   public static void main(String[] args){
      try{
         InetAddress localIp=InetAddress.getLocalHost();
         System.out.println(localIp);
      }
      catch (UnknownHostException e){
         System.out.println("Man!! I got no address.");
      }
   }
}
```

Output:

```
C:\Users\Rubina\.jdks\openjdk-22.0.1\bin\java.exe "-javaagent:D:\IntelliJ IDEA Community Edition 2024.1.2\lib\idea_rt.jar=64470:D:\IntelliJ IDEA Community
DESKTOP-FTLMRLH/192.168.1.75

Process finished with exit code 0
```

1.3. Write a program to find the hostname with given address.

Program:

```
import java.net.InetAddress;
import java.net.UnknownHostException;

public class IpClass {
   public static void main(String[] args){
      try{
         InetAddress
ipAddress=InetAddress.getByName("157.240.239.174");
         System.out.println(ipAddress.getCanonicalHostName());
      }
      catch (UnknownHostException e){
         System.out.println("Invalid IP Address!");
      }
   }
}
```

Output:

1.4. Write a program to find the IP address of the local machine.

Program:

```
import java.net.*;

public class MyAddressProgram {
   public static void main(String[] args){
      try {
         InetAddress me = InetAddress.getLocalHost();
         String dottedQuad = me.getHostAddress();
         System.out.println("My address: " + dottedQuad);
      } catch (UnknownHostException ex) {
         System.out.println("Myan! I got no address");
      }
   }
}
```

Output:

1.5. Write a program to determine whether the address is IPv4 or IPv6.

Program:

```
import java.net.*;
public class IPVersionProgram {
   public static  void main(String[] args){
      try {
         InetAddress ia = InetAddress.getByName("FF00::");
         byte[] address = ia.getAddress();
         if(address.length==4)
            System.out.println(ia + " is IPv4.");
         else if(address.length==16)
            System.out.println(ia + " is IPv6.");
      } catch (UnknownHostException ex) {
         System.out.println("Invalid IP!");
      }
   }
}
```

Output:

1.6. Write a program to test the characteristics of an IP address

Program:

```
import java.net.*;
public class IPCharacteristics {
   public static void main(String[] args) {
      try {
         InetAddress address =
InetAddress.getByName("www.Youtube.com");
         if (address.isAnyLocalAddress()) {
            System.out.println(address + " is a wildcard address.");
         }
         if (address.isLoopbackAddress()) {
            System.out.println(address + " is a loopback address.");
         }
         if (address.isLinkLocalAddress()) {
            System.out.println(address + " is a link-local address.");
         } else if (address.isSiteLocalAddress()) {
            System.out.println(address + " is a site-local address.");
         } else {
            System.out.println(address + " is a global address.");
         }
         if (address.isMulticastAddress()) {
            if (address.isMCGlobal()) {
               System.out.println(address + " is a global multicast
address.");
            } else if (address.isMCOrgLocal()) {
               System.out.println(address + " is an organization wide
```

```
multicast address.");
                } else if (address.isMCSiteLocal()) {
                    System.out.println(address + " is a site wide multicast
address.");
                } else if (address.isMCLinkLocal()) {
                    System.out.println(address + " is a subnet wide multicast
address.");
                } else if (address.isMCNodeLocal()) {
                    System.out.println(address + " is an interface-local multicast
address.");
                } else {
                    System.out.println(address + " is an unknown multicast
address type.");
                }
            } else {
                System.out.println(address + " is a unicast address.");
            }
        } catch (UnknownHostException ex) {
            System.err.println("Could not resolve the address.");
        }
    }
}
```

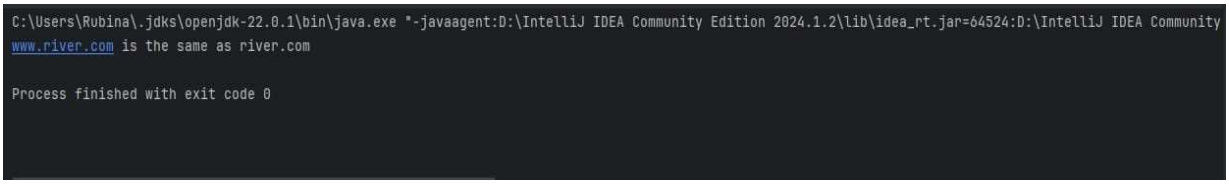
Output:

1.7. Write a Program to determine where two different domain name have same IP address.

Program:

```
import java.net.*;

public class SameIPProgram {
   public static void main(String[] args) {
      try {
         InetAddress site1 = InetAddress.getByName("www.river.com");
         InetAddress site2 = InetAddress.getByName("river.com");
         if (site1.equals(site2)) {
            System.out.println("www.example.com is the same as example.com");
         } else {
            System.out.println("Different Site");
         }
      } catch (UnknownHostException ex) {
         System.out.println("Host lookup failed.");
      }
   }
}
```

Output:

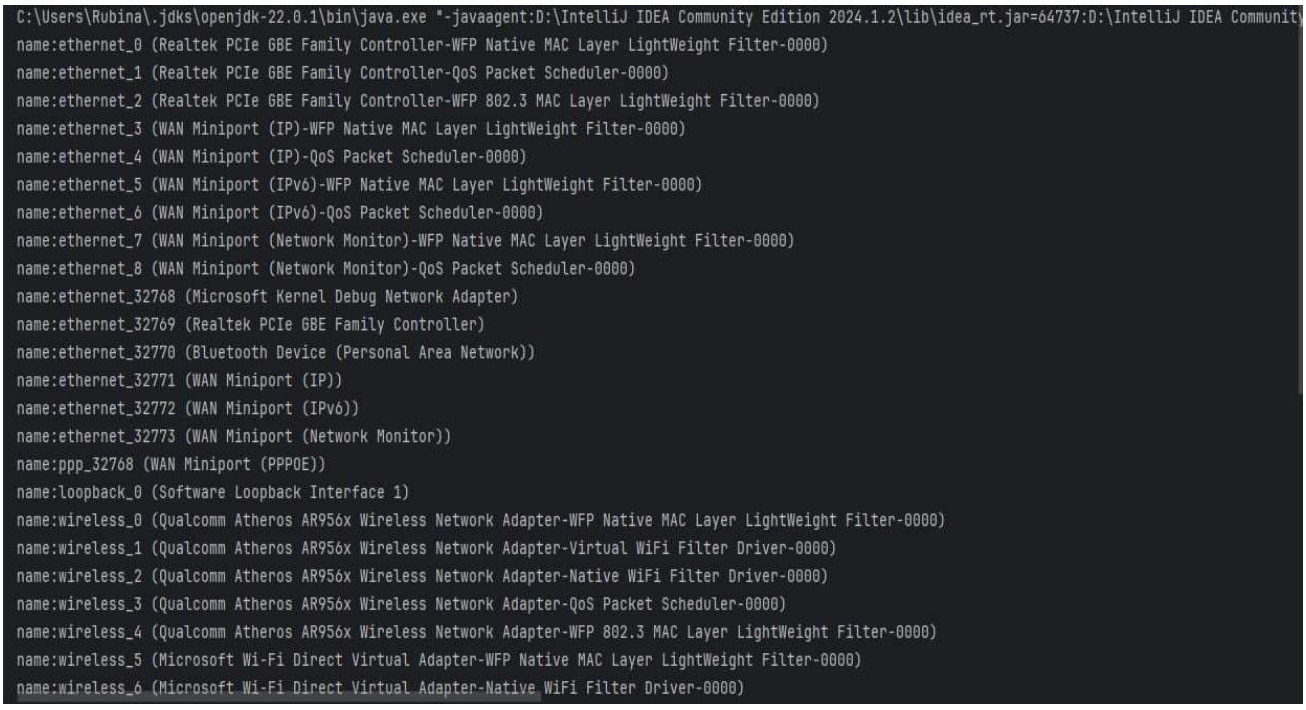


1.8. Write a program that lists all the network interfaces.

Program:

```
import java.net.*;
import java.util.*;
public class InterfaceListener {
   public static void main(String[] args) throws SocketException {
      Enumeration<NetworkInterface> interfaces =
NetworkInterface.getNetworkInterfaces();
      while (interfaces.hasMoreElements()) {
         NetworkInterface ni = interfaces.nextElement();
         System.out.println(ni);
      }
   }
}
```

Output:

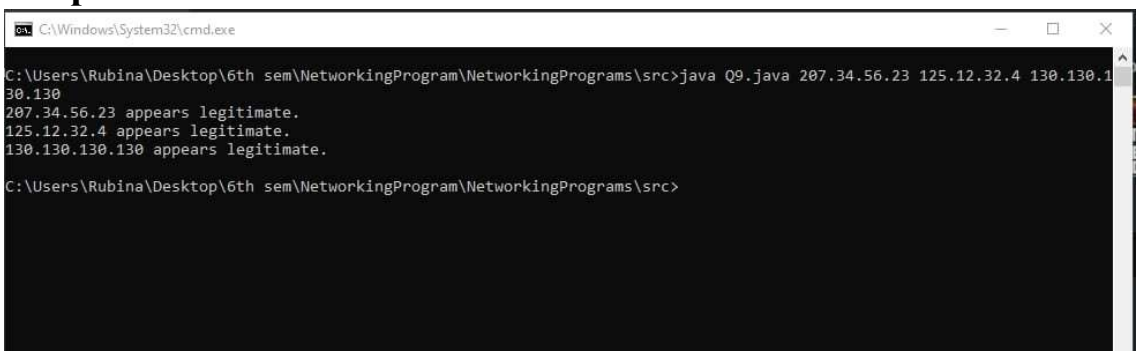


1.9. Write a program to demonstrate SpamCheck.

Program:

```
import java.net.*;

public class SpamCheck {

   public static final String BLACKHOLE = "sbl.spamhaus.org";

   public static void main(String[] args) throws UnknownHostException
{
      for (String arg: args) {
         if (isSpammer(arg)) {
            System.out.println(arg + " is a known spammer.");
         } else {
            System.out.println(arg + " appears legitimate.");
         }
      }
   }

   private static boolean isSpammer(String arg) {
      try {
         InetAddress address = InetAddress.getByName(arg);
         byte[] quad = address.getAddress();
         String query = BLACKHOLE;
         for (byte octet : quad) {
            int unsignedByte = octet < 0 ? octet + 256 : octet;
            query = unsignedByte + "." + query;
         }
         InetAddress.getByName(query);
         return true;
      } catch (UnknownHostException e) {
         return false;
      }

   }
}
```

Output:


C:\Windows\System32\cmd.exe
C:\Users\Rubina\Desktop\6th sem\NetworkingProgram\NetworkingPrograms\src>java Q9.java 207.34.56.23 125.12.32.4 130.130.1
30.130
207.34.56.23 appears legitimate.
125.12.32.4 appears legitimate.
130.130.130.130 appears legitimate.
C:\Users\Rubina\Desktop\6th sem\NetworkingProgram\NetworkingPrograms\src>