# LAB -1

1. Program to find the IP Address of the website

```
import java.net.*;
public class AddressDemo {
   public static void main(String[] args) {
      try {
         InetAddress address = InetAddress.getByName("https://kbcampus.edu.np/");
         System.out.println(address);
      } catch (UnknownHostException ex) {
         System.out.println("Could not find.");
      }
   }

}
```

2. Write a Program to find the address of local machine

```
try {
InetAddress address = InetAddress.getLocalHost(); System.out.println(address);
 }
catch (UnknownHostException ex)
 { System.out.println("Could not find this computer's address.");
 }
```

3. Detail program to work with the IP addresses

```
import java.net.*;
public class InetAddressDemo {
   public static void main(String[] args) {
```

```
    try {
        // Create an InetAddress object for a hostname
        InetAddress address1 = InetAddress.getByName("www.example.com");
        System.out.println("Address1: " + address1);
        printAddressDetails(address1);

        // Create an InetAddress object for an IP address
        InetAddress address2 = InetAddress.getByName("93.184.216.34");
        System.out.println("Address2: " + address2);
        printAddressDetails(address2);

        // Get the local host address
        InetAddress localAddress = InetAddress.getLocalHost();
        System.out.println("Local Address: " + localAddress);
        printAddressDetails(localAddress);

        // Get all IP addresses associated with a hostname
        InetAddress[] allAddresses = InetAddress.getAllByName("www.google.com");
        for (InetAddress addr : allAddresses) {
            System.out.println("Google Address: " + addr);
            printAddressDetails(addr);
        }
    } catch (UnknownHostException ex) {
        System.out.println("Could not find the address.");
    }
}

// Method to print the details of an InetAddress object
public static void printAddressDetails(InetAddress address) {
```

```
        System.out.println("Canonical Hostname: " + address.getCanonicalHostName());
        System.out.println("Host Address: " + address.getHostAddress());
        System.out.println("Host Name: " + address.getHostName());
        System.out.println("Is Any Local Address: " + address.isAnyLocalAddress());
        System.out.println("Is Link Local Address: " + address.isLinkLocalAddress());
        System.out.println("Is Loopback Address: " + address.isLoopbackAddress());
        System.out.println("Is Multicast Address: " + address.isMulticastAddress());
        System.out.println("Is Site Local Address: " + address.isSiteLocalAddress());
        System.out.println();
    }
}
```

4. IPV4 IPV6

```
import java.net.*;

public class Inetipv4ipv6Address {
   public static void main(String[] args) {
      try {
         InetAddress addr = InetAddress.getByName("ipv6.google.com");

         if (addr instanceof Inet6Address) {
            System.out.println("IPv6 = " + addr.getHostAddress());
         }

         if (addr instanceof Inet4Address) {
            System.out.println("IPv4 = " + addr.getHostAddress());
         }
      } catch (UnknownHostException e) {
         e.printStackTrace();
      }
   }
}
```

5. Remote system reachable or not

```
try {
         InetAddress net = InetAddress.getByName("192.168.1.165");
         if(net.isReachable(1000)) { // Increased timeout to 1000 milliseconds
            System.out.println("Success");
```

```
            } else {
                System.out.println("Failed");
            }
        } catch(Exception e) {
            e.printStackTrace(); // To print the exception stack trace if an error occurs
        }
```

6. Network Interface

```
try {
        // Use the factory method to get all network interfaces
        Enumeration<NetworkInterface> networkInterfaces =
NetworkInterface.getNetworkInterfaces();

        // Iterate through each network interface
        while (networkInterfaces.hasMoreElements()) {
            NetworkInterface networkInterface = networkInterfaces.nextElement();

            // Use the getter method to retrieve information about the network interface
            System.out.println("Name: " + networkInterface.getName());
            System.out.println("Display Name: " + networkInterface.getDisplayName());

            System.out.println("MTU: " + networkInterface.getMTU());
            System.out.println("Loopback: " + networkInterface.isLoopback());
            System.out.println("Up: " + networkInterface.isUp());
            System.out.println("Virtual: " + networkInterface.isVirtual());
            System.out.println();
        }
    } catch (SocketException e) {
        e.printStackTrace();
    }
}
```

7. Same website or not check

```
import java.net.*;
import java.util.Enumeration;
public class InetAddressExample {
  public static void main(String[] args) {
    try {


        InetAddress ibiblio =
        InetAddress.getByName("www.ibiblio.org");
        InetAddress helios = InetAddress.getByName("helios.ibiblio.org");
```

```
            if (ibiblio.equals(helios)) {
            System.out.println
            ("www.ibiblio.org is the same as helios.ibiblio.org");
            } else {
            System.out.println
            ("www.ibiblio.org is not the same as helios.ibiblio.org");
            }
              } catch (UnknownHostException ex) {
            System.out.println("Host lookup failed.");
    }
       }
    }
```

8. SpamCheck

```
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(); //bytes not string
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;
}
}

}
```

9. Write a program for weblog file( follow slide)