UNIT 2

Internet Addresses Lab

1. WAP that prints the address of www.javatpoint.com.

```
import java.net.InetAddress;
import java.net.UnknownHostException;
public class JavaInternetAddressByName {
	public static void main(String[] args) {
		try {
			InetAddress address =
InetAddress.getByName("www.javatpoint.com");
			System.out.println(address);
		} catch(UnknownHostException e) {
			System.out.println("Couldn't find the host.");
		}
	}
}
```

2. WAP to find the hostname of any address (e.g. 104.21.79.8).

```
import java.net.*;
public class ReverseTest {
	public static void main(String[] args) {
		try {
		InetAddress machine =
InetAddress.getByName("104.21.79.8");
	System.out.println(machine.getCanonicalHostName());
		} catch (UnknownHostException e) {
			System.out.println("No hostname found.");
		}
	}
}
```

3. Find the IP address of the local machine.

```
import java.net.*;
public class IPLocal {
	public static void main(String[] args) {
		try {
		InetAddress machine = InetAddress.getLocalHost();
		System.out.println(machine.getHostAddress());
		} catch (UnknownHostException e) {
		System.out.println("No hostname found.");
		}}}
```

4. Determining whether an IP address is v4 or v6.

```
import java.net.*;
public class AddressTest{
        public static void main(String[] args) {
                try {
                InetAddress machine =
InetAddress.getByName("www.prime.edu.np");
                byte[] address = machine.getAddress();
                        if(address.length == 4)
                                System.out.println("IPv4 is being used.");
                        else
                                System.out.println("IPv6 is being used.");
                } catch (UnknownHostException e) {
                System.out.println("No hostname found.");
}}}
```

5. Are www.ibiblio.org and helios.ibiblio.org the same?

```
import java.net.*;
public class IBiblioAliases {
  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.");
       }}}
```

6. A program that lists all the network interfaces.

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

7. WAP for Spam Check.

```
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(); //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;
     }}}
```

8. WAP for processing web server logfiles.

```
import java.io.*;
import java.net.*;
public class Weblog {
 public static void main(String[] args) {
  try (FileInputStream fin =  new FileInputStream(args[0]);
   Reader in = new InputStreamReader(fin);
   BufferedReader bin = new BufferedReader(in);) {
   for (String entry = bin.readLine();
    entry != null;
    entry = bin.readLine()) {
    // separate out the IP address
    int index = entry.indexOf(' ');
    String ip = entry.substring(0, index);
    String theRest = entry.substring(index);
   // Ask DNS for the hostname and print it out
    try {
     InetAddress address = InetAddress.getByName(ip);
     System.out.println(address.getHostName() + theRest);
    } catch (UnknownHostException ex) {
     System.err.println(entry);
    }  } } catch (IOException ex) {
  System.out.println("Exception: " + ex);
 }}}
```