Chapter 2

Lab 1

Objective: To check whether address is IPv4 or IPv6.
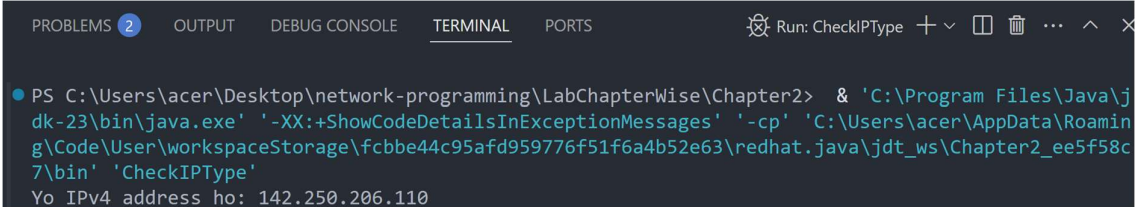
Source Code:

import java.net.*;

```java
public class CheckIPType {
    public static void main(String[] args) {
        try {
            // InetAddress object banaune (example: google.com ko lagi)
            InetAddress address = InetAddress.getByName("google.com");

            // Address ko type check garne
            if (address instanceof Inet4Address) {
                System.out.println("Yo IPv4 address ho: " + address.getHostAddress());
            } else if (address instanceof Inet6Address) {
                System.out.println("Yo IPv6 address ho: " + address.getHostAddress());
            } else {
                System.out.println("Unknown address type: " + address.getHostAddress());
            }
        } catch (Exception e) {
            System.out.println("Error aayo: " + e.getMessage());
        }
    }
}
```
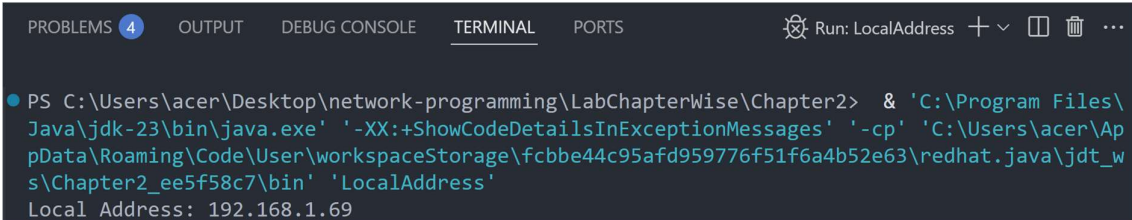
Output:

Lab 2

Objective: To find the address of local machine.

Source Code:

import java.net.*;

public class LocalAddress {

   public static void main(String[] args) {

     try {

      // Local machine ko address lina

      InetAddress local = InetAddress.getLocalHost();

      System.out.println("Local Address: " + local.getHostAddress());

    } catch (Exception e) {

      System.out.println("Error aayo: " + e.getMessage());

    }

   }

}

Output:

```
PROBLEMS 4    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS            Run: LocalAddress  + ∨  ⊡  🗑  ⋯

● PS C:\Users\acer\Desktop\network-programming\LabChapterWise\Chapter2>  & 'C:\Program Files\
  Java\jdk-23\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\acer\Ap
  pData\Roaming\Code\User\workspaceStorage\fcbbe44c95afd959776f51f6a4b52e63\redhat.java\jdt_w
  s\Chapter2_ee5f58c7\bin' 'LocalAddress'
  Local Address: 192.168.1.69
```
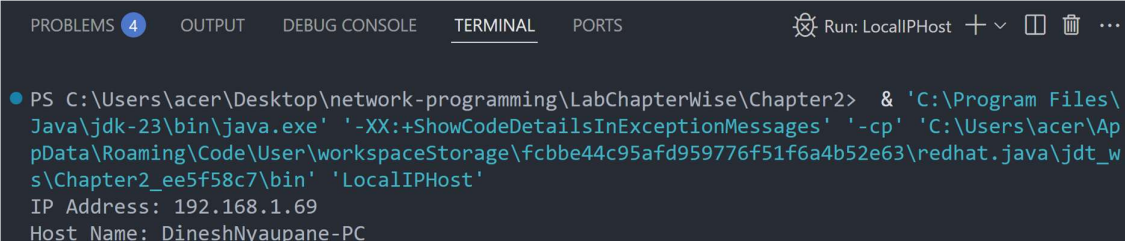
Lab 3

Objective: To find the IP Address and host name of local machine.

Source Code:

import java.net.*;

public class LocalIPHost {

  public static void main(String[] args) {

    try {

      // *Local machine ko IP ra Hostname print garne*

      InetAddress local = InetAddress.getLocalHost();

      System.out.println("IP Address: " + local.getHostAddress());

      System.out.println("Host Name: " + local.getHostName());

    } catch (Exception e) {

      System.out.println("Error aayo: " + e.getMessage());

    }

  }

}

Output:

```
PROBLEMS 4    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS              Run: LocalIPHost  + ⌄  ⬚  🗑  ⋯

PS C:\Users\acer\Desktop\network-programming\LabChapterWise\Chapter2>  & 'C:\Program Files\
Java\jdk-23\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\acer\Ap
pData\Roaming\Code\User\workspaceStorage\fcbbe44c95afd959776f51f6a4b52e63\redhat.java\jdt_w
s\Chapter2_ee5f58c7\bin' 'LocalIPHost'
IP Address: 192.168.1.69
Host Name: DineshNyaupane-PC
```

3

Lab 4

Objective: To demonstrate the SpamCheck.
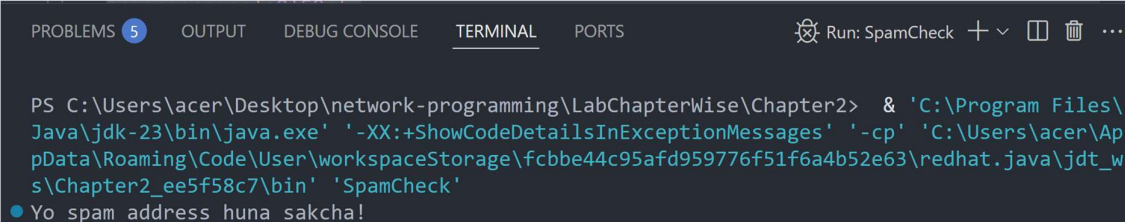
Source Code:

```java
import java.net.*;

public class SpamCheck {
    public static void main(String[] args) {
        try {
            // Domain name ko address khojne
            InetAddress address = InetAddress.getByName("www.google.com");

            // Hostname spam chaina bhane reply garne
            if (!address.isAnyLocalAddress()) {
                System.out.println("Yo spam address huna sakcha!");
            } else {
                System.out.println("Yo safe address ho.");
            }
        } catch (Exception e) {
            System.out.println("Error aayo: " + e.getMessage());
        }
    }
}
```

Output:

```
PROBLEMS 5    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS            ⚙ Run: SpamCheck  + ∨  ▯  🗑  …

PS C:\Users\acer\Desktop\network-programming\LabChapterWise\Chapter2>  & 'C:\Program Files\
Java\jdk-23\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\acer\Ap
pData\Roaming\Code\User\workspaceStorage\fcbbe44c95afd959776f51f6a4b52e63\redhat.java\jdt_w
s\Chapter2_ee5f58c7\bin' 'SpamCheck'
● Yo spam address huna sakcha!
```

Lab 5

Objective: To compare the domain names "*www.ibiblio.org*" and "*helios.ibiblio.com*".

Source Code:

```
import java.net.*;
public class CompareDomain {
    public static void main(String[] args) {
        try {
            // Duita domain ko IP address khojne
            InetAddress addr1 = InetAddress.getByName("www.ibiblio.org");
            InetAddress addr2 = InetAddress.getByName("helios.ibiblio.org");
            // Address compare garne
            if (addr1.equals(addr2)) {
                System.out.println("Domain haru same address ma point garcha.");
            } else {
                System.out.println("Domain haru different address ma chha.");
            }
        } catch (Exception e) {
            System.out.println("Error aayo: " + e.getMessage());
        }
    }
}
```
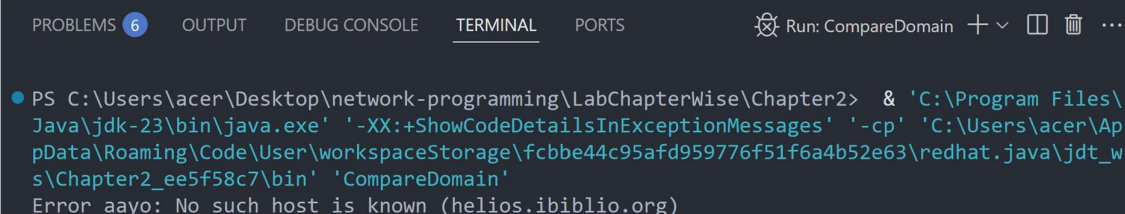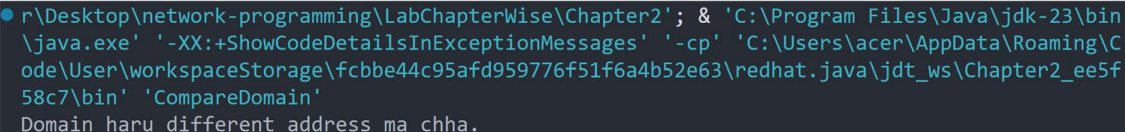
Output:

```
PROBLEMS 6    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS         Run: CompareDomain  + v  [] 🗑 ...

● PS C:\Users\acer\Desktop\network-programming\LabChapterWise\Chapter2>  & 'C:\Program Files\
  Java\jdk-23\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\acer\Ap
  pData\Roaming\Code\User\workspaceStorage\fcbbe44c95afd959776f51f6a4b52e63\redhat.java\jdt_w
  s\Chapter2_ee5f58c7\bin' 'CompareDomain'
  Error aayo: No such host is known (helios.ibiblio.org)
```

If we check www.google.com and www.youtube.com :

```
● r\Desktop\network-programming\LabChapterWise\Chapter2'; & 'C:\Program Files\Java\jdk-23\bin
  \java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\acer\AppData\Roaming\C
  ode\User\workspaceStorage\fcbbe44c95afd959776f51f6a4b52e63\redhat.java\jdt_ws\Chapter2_ee5f
  58c7\bin' 'CompareDomain'
  Domain haru different address ma chha.
```