

Write a program for DNS lookup. Given an IP address as input, it should return URL and viceversa.

```
import java.net.*;
import java.util.Scanner;

public class DnsLookup {
    public static String lookupByIp(String ip) {
        try {
            InetAddress inetAddress = InetAddress.getByIp(ip);
            return inetAddress.getHostAddress(); // Return the IP address
        } catch (UnknownHostException e) {
            return "Reverse lookup failed.";
        }
    }

    public static String lookupByHostname(String hostname) {
        try {
            InetAddress inetAddress = InetAddress.getByHost(hostname);
            return inetAddress.getHostAddress(); // Return the IP address
        } catch (UnknownHostException e) {
            return "Invalid hostname.";
        }
    }

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter an IP address or URL: ");
        String input = scanner.nextLine();

        try {
            InetAddress address = InetAddress.getByHost(input);
            if (address instanceof Inet4Address || address instanceof Inet6Address) {
                String hostname = lookupByIp(input);
                System.out.println("IP Address: " + input + " -> Hostname: " + hostname);
            } else {
                String ip = lookupByHostname(input);
                System.out.println("Hostname: " + input + " -> IP Address: " + ip);
            }
        } catch (UnknownHostException e) {
            System.out.println("Invalid input. Please enter a valid IP address or hostname.");
        }
    }
}
```

```

        String ip = lookupByHostname(input);
        System.out.println("Hostname: " + input + " -> IP Address: " + ip);
    }
} catch (UnknownHostException e) {
    String ip = lookupByHostname(input);
    System.out.println("Hostname: " + input + " -> IP Address: " + ip);
}
scanner.close(); // Close the scanner
}
}

```

Output:

```

d:\GITHUB\LAB\5TH SEMESTER\CNS\Assign 11>cd "d:\GITHUB\LAB\5TH SEMESTER\CNS\Assign 11\" && javac DnsLookup.java &&
a DnsLookup
Enter an IP address or URL: www.youtube.com
IP Address: www.youtube.com -> Hostname: www.youtube.com

d:\GITHUB\LAB\5TH SEMESTER\CNS\Assign 11>cd "d:\GITHUB\LAB\5TH SEMESTER\CNS\Assign 11\" && javac DnsLookup.java &&
a DnsLookup
Enter an IP address or URL: 8.8.8.8
IP Address: 8.8.8.8 -> Hostname: dns.google

d:\GITHUB\LAB\5TH SEMESTER\CNS\Assign 11>

```