**Assignment No. 8**

* **DnsLookup.java**

import java.net.InetAddress;

import java.net.UnknownHostException;

import java.util.Scanner;

public class DnsLookup {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.println("Enter an IP address or hostname:");

String input = scanner.nextLine().trim();

if (isValidIP(input)) {

try {

InetAddress address = InetAddress.getByName(input);

String hostName = address.getHostName();

System.out.println("Hostname: " + hostName);

}

catch (UnknownHostException e) {

System.out.println("Could not find hostname for IP: " + input);

}

}

else {

try {

InetAddress address = InetAddress.getByName(input);

String ipAddress = address.getHostAddress();

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

}

catch (UnknownHostException e) {

System.out.println("Could not find IP address for hostname: " + input);

}

}

scanner.close();

}

private static boolean isValidIP(String ip) {

String ipPattern = "^(25[0-5]|2[0-4][0-9]|[01]?[0-9][0-9]?)\\." + "(25[0-5]|2[0-4][0-9]|[01]?[0-9][0-9]?)\\." + "(25[0-5]|2[0-4][0-9]|[01]?[0-9][0-9]?)\\." + "(25[0-5]|2[0-4][0-9]|[01]?[0-9][0-9]?)$";

return ip.matches(ipPattern);

}

}

//Output:

PS E:\TE\CNS\Practicals> javac DnsLookup.java

PS E:\TE\CNS\Practicals> java DnsLookup

Enter an IP address or hostname:

192.168.201.242

Hostname: LAPTOP-VPJ0F9DE

PS E:\TE\CNS\Practicals> javac DnsLookup.java

PS E:\TE\CNS\Practicals> java DnsLookup

Enter an IP address or hostname:

LAPTOP-VPJ0F9DE

IP Address: 192.168.201.242

PS E:\TE\CNS\Practicals>