

NATIONAL UNIVERSITY OF COMPUTER & EMERGING SCIENCE
Computer Networks Lab (CL307)
Lab Session 03

Socket Programming

Example 1: How to get IP address in java using InetAddress

import java.net.UnknownHostException;
import java.net.InetAddress;
class InetAddressTest
{
public static void main(String[] args)
throws UnknownHostException
{
InetAddress Address=InetAddress.getLocalHost();
System.out.println(Address);
}
}

Output

```
C:\Program Files\Java\jdk1.6.0_03\bin>javac InetAddressTest.java
C:\Program Files\Java\jdk1.6.0_03\bin>java InetAddressTest
fast-pakistan/192.168.15.100
```

Example 2:How to get Host Address

import java.net.UnknownHostException;
import java.net.InetAddress;
public class IPTest {
public static void main(String args[]) throws UnknownHostException {
InetAddress addr = InetAddress.getLocalHost();
String ipAddress = addr.getHostAddress();
System.out.println("IP address of localhost from Java Program: " + ipAddress);
//Hostname
String hostname = addr.getHostName();
System.out.println("Name of hostname : " + hostname);
}
}

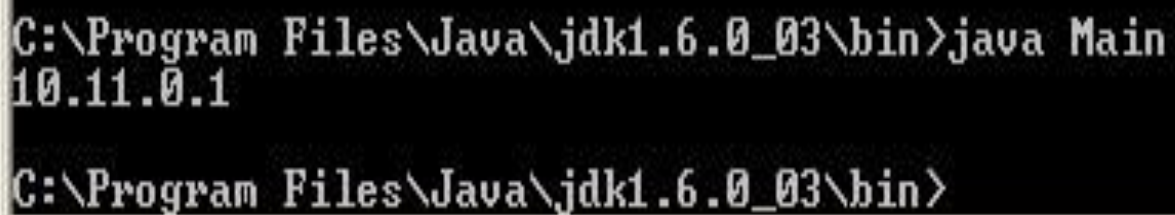
Output

```
C:\Program Files\Java\jdk1.6.0_03\bin>javac IPTest.java
C:\Program Files\Java\jdk1.6.0_03\bin>java IPTest
IP address of localhost from Java Program: 192.168.15.100
Name of hostname : fast-pakistan
```

Example 3: How to get Host IP Address

import java.net.UnknownHostException;
import java.net.InetAddress;
public class Main {
public static void main(String[] args) {
try {
InetAddress ia = InetAddress.getByName("10.11.0.1");
System.out.println(ia.getHostName());
} catch (Exception ex) {
System.err.println(ex);
}
}
}
}

Output



```
C:\Program Files\Java\jdk1.6.0_03\bin>java Main
10.11.0.1
C:\Program Files\Java\jdk1.6.0_03\bin>
```

Example 4: Convert a string (representing an IP) to InetAddress

import java.net.UnknownHostException;
import java.net.InetAddress;
import java.net.*;
class Ip {
public static void main(String[] args)
throws UnknownHostException
{
String hostname = args[0];
InetAddress ipaddress = InetAddress.getByName(hostname);
System.out.println("IP address: " + ipaddress.getHostAddress());
}
}

Output:

```
C:\Program Files\Java\jdk1.6.0_03\bin>java Ip
Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: 0
    at Ip.main(Ip.java:14)

C:\Program Files\Java\jdk1.6.0_03\bin>java Ip www.google.com
```

Example 5: To obtain the information about the (a)Host (b)Port(c)Protocol

import java.lang.* ;
import java.io.*;
import java.net.*;
class ud1
{
public static void main(String args []) throws
MalformedURLException
{ URL url = new URL("http://www.yahoo.com");
try
{
System.out.println("host name is " + url.getHost());
System.out.println("port no. is " + url.getPort());
System.out.println("protocol used is " + url.getProtocol());
}
catch (Exception e)
{
System.out.println("error"+e);
}
}
}

OUTPUT:

```
C:\JAVA\BIN>javac ud1.java
C:\JAVA\BIN>java ud1 yahoo.com
host name is www.yahoo.com
port no. is -1
protocol used is http
C:\JAVA\BIN
```

Example 6: To access daytime service from server using socket

```
import java.net.*;
import java.io.*;
class daytime
{
public static void main(String args[])
{
try
{
Socket daytime=new Socket("192.168.1.7",13);
System.out.println("Connection established");
daytime.setSoTimeout(2000);
BufferedReader reader=new BufferedReader(new
InputStreamReader(daytime.getInputStream()));
System.out.println("result:"+reader.readLine());
daytime.close();
}
catch(Exception ioe)
{
System.err.println("Error" +ioe);
}
}
}
```

OUTPUT:

```
C:\JAVA\BIN>javac daytime1.java
C:\JAVA\BIN>java daytime1
Connection established
result:Wed Sep 03 11:01:48 GMT+05:30 2014
C:\JAVA\BIN>
```

Example 7: Scan The Port Staring From 1024 to 65535

```
import java.net.*;
import java.io.*;
public class LocalPortScanner
{
    public static void main(String args[])
    {
        for(int port=1024;port<=65535;port++)
        {
            try
            {
                ServerSocket server=new ServerSocket(port);
            }
            catch(IOException e)
            {
                System.out.println("There is a server on port"+port);
            }
        }
    }
}
```

OUTPUT:

```
C:\JAVA\BIN>javac LocalPortScanner.java
C:\JAVA\BIN>java LocalPortScanner
There is a server on port4314
There is a server on port4315
There is a server on port4316
There is a server on port4317
There is a server on port4318
C:\JAVA\BIN>
```

EXERCISE: Design Client Server Application.