
# Computer Networks

# Lab Report-7

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**COURSE:** **BESE-26C**

**Exercise 7.1:**
Write a UDP client/server system in which the client program sends a number between 1 and 10 and the server program returns the corresponding element in an array of strings e.g.

Client>Input any number between 1 and 10 : 5
Client> Response from server is : Five

## Server :

```
import java.net.*;
import java.io.*;
public class Server {
    public static String search(String num)
    {
        String [] numbers =
{"zero","one","two","three","four","five","six","seven","eight","nine"};
        return numbers[Integer.parseInt(num.trim())];
    }
    public static void main(String[] args) throws SocketException, IOException
    {
        DatagramSocket server = new DatagramSocket(9999);
        byte [] receive = new byte[1024];
        byte [] send = new byte[1024];
        DatagramPacket in_client = new DatagramPacket(receive,receive.length);
        server.receive(in_client);
        send = (search( new String(in_client.getData()))).getBytes();
        DatagramPacket to_client =  new
DatagramPacket(send,send.length,in_client.getAddress(),in_client.getPort());
        server.send(to_client);
    }
}
```

## Client:

```
import java.net.*;
import java.io.*;
public class Client {
    public static void main(String[]args) throws SocketException, IOException
    {

    DatagramSocket client = new DatagramSocket();

    byte [] send =new byte[1024];
    byte [] receive = new byte [1024];
```

```
    BufferedReader in_client = new BufferedReader(new
InputStreamReader(System.in));
    System.out.print("Enter a number from 1 to 10 : ");
    send = (in_client.readLine()).getBytes();

    DatagramPacket to_server = new
DatagramPacket(send,send.length,InetAddress.getByName("localhost"),9999);
    client.send(to_server);

    DatagramPacket from_server = new DatagramPacket(receive,receive.length);
    client.receive(from_server);
    System.out.println("The response from server is: " + new
String(from_server.getData()));
    }
}
```

**OUTPUT:**

```
PS C:\Users\Ammar Younas\Desktop\CN Codes> cd "c
tput }
Enter a number from 1 to 10 :
8
The Response from Server is :eight
PS C:\Users\Ammar Younas\Desktop\CN Codes>
```

**Exercise 7.2:**

- Write the server side of the application in a file named DayTimeServer.java.
- The DayTimeServer simply listens on port 1078 and as soon as it receives a request from the DayTimeClient, it returns the current Date on the server using the following function of the java.util package Date now = new Date();
- Similarly you need to write the client side of the application in a file named DayTimeClient.java.
- The client simply sends a request to the server when it is run and the server returns the current Date at the server as mentioned above.

## Server :

```
import java.net.*;
import java.io.*;
```

```
import java.util.Date;
public class TimeServer {
    public static void main(String[] args) throws SocketException, IOException
    {
       DatagramSocket socket = new DatagramSocket(1078);
       byte [] receive = new byte[1024];
       byte [] send = new byte[1024];
       DatagramPacket from_client = new DatagramPacket(receive,receive.length);
       socket.receive(from_client);
       send = (new Date().toString()).getBytes();
       DatagramPacket to_client = new
DatagramPacket(send,send.length,from_client.getAddress(),from_client.getPort());
       socket.send(to_client);
    }
}
```

**Client:**

```
import java.net.*;
import java.io.*;
public class TimeClient {
    public static void main(String[] args) throws SocketException, IOException
    {
        DatagramSocket socket = new DatagramSocket();
        byte [] send = new byte[1024];
        byte [] receive = new byte [1024];
        DatagramPacket to_server = new
DatagramPacket(send,send.length,InetAddress.getByName("localhost"),1078);
        socket.send(to_server);
        DatagramPacket from_server = new DatagramPacket(receive,receive.length);
        socket.receive(from_server);
        System.out.println("The Date and Time is: " + new
String(from_server.getData()))
    }
}
```

**OUTPUT:**

```
PS C:\Users\Ammar Younas\Desktop\CN Codes> cd "c:\User
tput }
The Date and Time is : Sat May 28 19:14:01 PKT 2022
PS C:\Users\Ammar Younas\Desktop\CN Codes>
```