*Cycle 3 : Part Exercise*

NETWORK PROGRAMMING Using UDP

1. To implement echo server and client in java using UDP sockets.
2. Write a program to implement a text based message transfer from client to server process using UDP.
3. Implement a simple message transfer from client to server process using UDP.
4. To implement a chat server and client in java using UDP sockets.
5. To implement a DNS server and client in java using UDP sockets
6. Develop a TCP client/server application for transferring a text file from client to server?

*File operation between client and server*

**File transfer**

**Client**

import java.io.\*;

import java.net.\*;

import java.util.\*;

class Clientfile

{              public static void main(String args[])

                {try{

                                BufferedReader in=new BufferedReader(new InputStreamReader(System.in));

                                Socket clsct=new Socket("127.0.0.1",139);

                                DataInputStream din=new DataInputStream(clsct.getInputStream());

                                DataOutputStream dout=new DataOutputStream(clsct.getOutputStream());

                                System.out.println("Enter the file name:");

                                String str=in.readLine();

                                dout.writeBytes(str+'\n');

                                System.out.println("Enter the new file name:");

                                String str2=in.readLine();

                                String str1,ss;

                                FileWriter f=new FileWriter(str2);

                                char buffer[];

                                                while(true)

                                                {              str1=din.readLine();

                                                                if(str1.equals("-1")) break;

                                                                System.out.println(str1);

                                                                buffer=new char[str1.length()];

                                                                str1.getChars(0,str1.length(),buffer,0);

                                                                f.write(buffer);                                    }

                                f.close();

                                clsct.close();          }

                catch (Exception e)

                {              System.out.println(e);         }              }}

**Server**

import java.io.\*;

import java.net.\*;

import java.util.\*;

class Serverfile

{              public static void main(String args[])

                {try{       ServerSocket obj=new ServerSocket(139);

                                while(true)

                                {              Socket obj1=obj.accept();

                                                DataInputStream din=new DataInputStream(obj1.getInputStream());

                                                DataOutputStream dout=new DataOutputStream(obj1.getOutputStream());

                                                String str=din.readLine();

                                                FileReader f=new FileReader(str);

                                                BufferedReader b=new BufferedReader(f);

                                                String s;

                                                while((s=b.readLine())!=null)

                                                {              System.out.println(s);

                                                                dout.writeBytes(s+'\n');       }

                                                f.close();

                                                dout.writeBytes("-1\n");     }              }

                catch(Exception e)

                {              System.out.println(e);}       }}

**Output**

**File content**

Computer networks

jhfcgsauf

jbsdava

jbvuesagv

**client**

Enter the file name:

sample.txt

**server**

Computer networks

jhfcgsauf

jbsdava

jbvuesagv

**client**

Enter the new file name:

net.txt

Computer networks

jhfcgsauf

jbsdava

jbvuesagv

**Destination file**

Computer networks

jhfcgsauf

jbsdava

jbvuesagv

*Program for Client - Server communication to perform Chat operation using UDP in Java*

**client**

import java.io.\*;

import java.net.\*;

import java.util.\*;

class Client13

{

            public static void main(String args[])

            {

            try

            {

                        DatagramSocket client=new DatagramSocket();

                        while(true)

                        {

                        InetAddress addr=InetAddress.getByName("127.0.0.1");

                        byte[] sendbyte=new byte[1024];

                        byte[] receivebyte=new byte[1024];

                        BufferedReader in=new BufferedReader(new InputStreamReader(System.in));

                        System.out.print("You:");

                        String str=in.readLine();

                        sendbyte=str.getBytes();

                        DatagramPacket sender=new DatagramPacket(sendbyte,sendbyte.length,addr,1309);

                        client.send(sender);

                        if(str.equals("bye") )

                        {

                                    break;

                        }

                        DatagramPacket receiver=new DatagramPacket(receivebyte,receivebyte.length);

                        client.receive(receiver);

                        String s=new String(receiver.getData());

                        String s1=s.trim();

                        System.out.println("Server:"+s1);

                        if(s1.equals("bye") )

                        {

                                    break;

                        }

                        }

                        client.close();

            }

            catch(Exception e)

            {

                        System.out.println(e);

            }

            }

}

**Server**

import java.io.\*;

import java.net.\*;

import java.util.\*;

class Server13

{

            public static void main(String args[])

            {

            try

            {

                        DatagramSocket server=new DatagramSocket(1309);

                        while(true)

                        {

                                    byte[] sendbyte=new byte[1024];

                                    byte[] receivebyte=new byte[1024];

                                    DatagramPacket receiver=new DatagramPacket(receivebyte,receivebyte.length);

                                    server.receive(receiver);

                                    String str=new String(receiver.getData());

                                    String str2=str.trim();

                                    System.out.println("Client:"+str2);

                                    if(str2.equals("bye"))

                                    {

                                                break;

                                    }

                                    InetAddress addr=receiver.getAddress();

                                    int port=receiver.getPort();

                                    BufferedReader in=new BufferedReader(new InputStreamReader(System.in));

                                    System.out.print("You:");

                                    String str1=in.readLine();

                                    sendbyte=str1.getBytes();

                                    DatagramPacket sender=new DatagramPacket(sendbyte,sendbyte.length,addr,port);

                                    server.send(sender);

                                    if(str1.equals("bye"))

                                    {

                                                break;

                                    }

                        }

                        server.close();

            }

            catch(Exception e)

            {

                        System.out.println(e);

            }s}

}

**Output**

E:\networks>javac Client13.java

E:\networks>javac Server13.java

E:\networks>java Client13

You:hai

Server:hello

You:how r u

Server:fine

You:u

Server:bye

E:\networks>java Server13

Client:hai

You:hello

Client:how r u

You:fine

Client:u

You:bye

*Program for Client - Server communication to access Date using UDP in Java*

**Client**

import java.io.\*;

import java.net.\*;

import java.util.\*;

class Client12

{

            public static void main(String args[])

            {

            try

            {

                        DatagramSocket client=new DatagramSocket();

                        InetAddress addr=InetAddress.getByName("127.0.0.1");

                        byte[] sendbyte=new byte[1024];

                        byte[] receivebyte=new byte[1024];

                        BufferedReader in=new BufferedReader(new InputStreamReader(System.in));

                        //System.out.println("Enter the String:");

                        String str=in.readLine();

                        sendbyte=str.getBytes();

                        DatagramPacket sender=new DatagramPacket(sendbyte,sendbyte.length,addr,1309);

                        client.send(sender);

                        DatagramPacket receiver=new DatagramPacket(receivebyte,receivebyte.length);

                        client.receive(receiver);

                        String s=new String(receiver.getData());

                        System.out.println(s.trim());

                        client.close();

            }

            catch(Exception e)

            {

                        System.out.println(e);

            }

            }

}

**Server**

import java.io.\*;

import java.net.\*;

import java.util.\*;

class Server12

{

            public static void main(String args[])

            {

            try

            {

                        DatagramSocket server=new DatagramSocket(1309);

                        while(true)

                        {

                                    byte[] sendbyte=new byte[1024];

                                    byte[] receivebyte=new byte[1024];

                                    DatagramPacket receiver=new DatagramPacket(receivebyte,receivebyte.length);

                                    server.receive(receiver);

                                    String str=new String(receiver.getData());

                                    //System.out.println(str.trim());

                                    InetAddress addr=receiver.getAddress();

                                    int port=receiver.getPort();

                                    Date d=new Date();

                                    String str1=d.toString();

                                    sendbyte=str1.getBytes();

                                    DatagramPacket sender=new DatagramPacket(sendbyte,sendbyte.length,addr,port);

                                    server.send(sender);

                        }

            }

            catch(Exception e)

            {

                        System.out.println(e);

            }

            }

}

**Output**

E:\networks>javac Client12.java

E:\networks>javac Server12.java

E:\networks>java Server12

E:\networks>java Client12

need date

Tue Jul 19 23:15:35 PDT 2011

*Program for Client - Server communication to perform Echo Opreration using UDP in Java*

The DatagramSocket object is used to establish communication between Client and Server.

**client**

import java.io.\*;

import java.net.\*;

import java.util.\*;

class Client1

{

            public static void main(String args[])

            {

            try

            {

                        DatagramSocket client=new DatagramSocket();

                        InetAddress addr=InetAddress.getByName("127.0.0.1");

                        byte[] sendbyte=new byte[1024];

                        byte[] receivebyte=new byte[1024];

                        BufferedReader in=new BufferedReader(new InputStreamReader(System.in));

                        System.out.println("Enter the String:");

                        String str=in.readLine();

                        sendbyte=str.getBytes();

                        DatagramPacket sender=new DatagramPacket(sendbyte,sendbyte.length,addr,1309);

                        client.send(sender);

                        DatagramPacket receiver=new DatagramPacket(receivebyte,receivebyte.length);

                        client.receive(receiver);

                        String s=new String(receiver.getData());

                        System.out.println(s.trim());

                        client.close();

            }

            catch(Exception e)

            {

                        System.out.println(e);

            }

            }

}

**Server**

import java.io.\*;

import java.net.\*;

import java.util.\*;

class Server1

{

            public static void main(String args[])

            {

            try

            {

                        DatagramSocket server=new DatagramSocket(1309);

                        while(true)

                        {

                                    byte[] sendbyte=new byte[1024];

                                    byte[] receivebyte=new byte[1024];

                                    DatagramPacket receiver=new DatagramPacket(receivebyte,receivebyte.length);

                                    server.receive(receiver);

                                    String str=new String(receiver.getData());

                                    System.out.println(str.trim());

                                    InetAddress addr=receiver.getAddress();

                                    int port=receiver.getPort();

                                    sendbyte=str.getBytes();

                                    DatagramPacket sender=new DatagramPacket(sendbyte,sendbyte.length,addr,port);

                                    server.send(sender);

                        }

            }

            catch(Exception e)

            {

                        System.out.println(e);

            }

            }

}

**Output**

E:\networks>javac Client1.java

E:\networks>javac Server1.java

E:\networks>java Client1

Enter the String:

hai

hai

E:\networks>java Server1

Hai