Department of Artificial Intelligence and Data Science

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Class: SY	Division: B	Roll No: 272028
Semester: IV	Academic Year: 2022-2023	
Subject Name & Code: Fundamentals of Computer Networks: ADUA22203		
Title of Assignment: Write a program using UDP Sockets to enable file transfer (Script, Text, Audio and Video one file each) between two machines.		
Date of Performance: 27-04-2023	Date of Submission: 27-04-2023	

Assignment No.- 8

Program:

Server.js:

```java
import java.io.PrintWriter;
import java.net.DatagramPacket;
import java.net.DatagramSocket;
import java.net.InetAddress;

public class Server {
  public static void main(String[] args) throws Exception {

    System.out.print("hello");
    try (DatagramSocket s = new DatagramSocket(65535)) {
      InetAddress ia = InetAddress.getLocalHost();
      byte[] filename = new byte[1000];
      byte[] b = new byte[10000000];

      // receiving name

      DatagramPacket name = new DatagramPacket(filename, filename.length);
      s.receive(name);
      System.out.print("hello");
      System.out.println(new String(name.getData()));

      DatagramPacket p = new DatagramPacket(b, b.length);
      s.receive(p);
      System.out.print("hello");
      System.out.println(new String(p.getData()));

      String rec = "Received your packet";
      byte[] b1 = rec.getBytes();
      System.out.println(b1);
      DatagramPacket p1 = new DatagramPacket(b1, b1.length, ia, p.getPort());
      s.send(p1);

      String fname = new String(name.getData()).trim();
      fname = "/Users/pranavbagade/Desktop/VIIT/FCN" + fname;
      System.out.println(fname);

      String filedata = new String(p.getData()).trim();
      System.out.println(filedata);

      PrintWriter pw = new PrintWriter(fname);
      pw.println(filedata);
```

```
      pw.close();
    }
  }
}
```

Client.js:

```java
import java.io.BufferedReader;
import java.io.File;
import java.io.FileReader;
import java.net.DatagramPacket;
import java.net.DatagramSocket;
import java.net.InetAddress;
import java.util.Scanner;

public class Client {
    public static void main(String[] args)throws Exception {
        // TODO Auto-generated method stub
        Scanner sc=new Scanner(System.in);
        DatagramSocket s=new DatagramSocket();
        InetAddress ia=InetAddress.getLocalHost();
        File f1=new File("/Users/yashagarwal/Desktop/fcn");
        File[] files=f1.listFiles();

        StringBuilder sb=new StringBuilder("\n");
        int x=0;
        for(int i=0;i<files.length;i++)
        {
          if(files[i].canRead())
          {
            sb.append(files[i].getName()+" ,size"+files[i].length()+"bytes\n");           x++;
          }
        }
        System.out.println(x+" Files found");
        System.out.println(sb);
        System.out.println(" Enter filename for download ");
        String fname = sc.nextLine();
        System.out.println(fname);
            boolean flag = false;
            int id= 0;
            for(int i=0;i<files.length;i++)
            {
        if(files[i].getName().toString().equalsIgnoreCase(fname))
        {           flag = true;
          id = i;
          break;
        }
```

```
        }
        if(!flag)
        {
           System.out.println(fname + " does not exist!");
           return;
        }

        File filetocopy=new File(files[id].getAbsolutePath());
        FileReader fileReader=new FileReader(filetocopy);
        BufferedReader br=new BufferedReader(fileReader);
        StringBuilder sb1=new StringBuilder();

        String line;
        while((line=br.readLine())!=null)
        {
           sb1.append(line);
           sb1.append("\n");
        }
        System.out.println(sb1.toString());

        byte[] sentname=files[id].getName().getBytes();
        DatagramPacket p1=new DatagramPacket(sentname,sentname.length,ia,65535);
        s.send(p1);
        byte[] senttoserver=sb1.toString().getBytes();
        DatagramPacket p2=new
        DatagramPacket(senttoserver,senttoserver.length,ia,65535);
        s.send(p2);
        s.close();
        }
}
```

Output:

File:

```
e607342bytes
MyServer.java ,size409bytes
Client.java ,size2569bytes
.DS_Store ,size6148bytes
intro.txt ,size24bytes
me.txt ,size44bytes
DateServer.class ,size1415bytes
DateServer.java ,size564bytes
DateClient.java ,size379bytes
MyClient.java ,size357bytes
Server.java ,size1611bytes
.vscode ,size96bytes

 Enter filename for download
me.txt
me.txt
```

Script:

```
MyServer.java ,size409bytes
Client.java ,size2566bytes
.DS_Store ,size6148bytes
intro.txt ,size24bytes
subtract.py ,size65bytes
me.txt ,size44bytes
DateServer.class ,size1415bytes
Server.class ,size1861bytes
DateServer.java ,size564bytes
DateClient.java ,size379bytes
MyClient.java ,size357bytes
Server.java ,size1611bytes
.vscode ,size96bytes

 Enter filename for download
subtract.py
subtract.py
number1 = 10
number2 = 7
number = number1 - number2
print(number)
```

Audio:

```
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- PagalWorPagalWorld Happy Birthday Song2018Download F
rom PagalWorld.comÇ

Exception in thread "main" java.net.SocketException: M
essage too long
        at java.base/sun.nio.ch.DatagramChannelImpl.se
nd0(Native Method)
        at java.base/sun.nio.ch.DatagramChannelImpl.se
ndFromNativeBuffer(DatagramChannelImpl.java:901)
        at java.base/sun.nio.ch.DatagramChannelImpl.se
nd(DatagramChannelImpl.java:863)
        at java.base/sun.nio.ch.DatagramChannelImpl.se
nd(DatagramChannelImpl.java:821)
        at java.base/sun.nio.ch.DatagramChannelImpl.bl
ockingSend(DatagramChannelImpl.java:853)
        at java.base/sun.nio.ch.DatagramSocketAdaptor.
send(DatagramSocketAdaptor.java:218)
        at java.base/java.net.DatagramSocket.send(Data
gramSocket.java:664)
        at Client.main(Client.java:67)
```

Video:

```
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Exception in thread "main" java.net.SocketException: M
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nd0(Native Method)
        at java.base/sun.nio.ch.DatagramChannelImpl.se
ndFromNativeBuffer(DatagramChannelImpl.java:901)
        at java.base/sun.nio.ch.DatagramChannelImpl.se
nd(DatagramChannelImpl.java:863)
        at java.base/sun.nio.ch.DatagramChannelImpl.se
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        at java.base/sun.nio.ch.DatagramChannelImpl.bl
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        at java.base/sun.nio.ch.DatagramSocketAdaptor.
send(DatagramSocketAdaptor.java:218)
        at java.base/java.net.DatagramSocket.send(Data
gramSocket.java:664)
        at Client.main(Client.java:67)
```

Conclusion: Successfully write a program using UDP socket to enable file transfer such script, Text, Audio & video one file each between two machine.

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Ashwin
27/4/23