Lab Assignment on Unit V: (Use JAVA/PYTHON)

Write a program using TCP sockets for wired network to implement
a. Peer to Peer Chat
b. Multiuser Chat

Demonstrate the packets captured traces using Wireshark Packet Analyzer Tool for peer to peer mode

PROGRAM

```
/*---------------SERVER SIDE--------------*/

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


public class Server { public static void main(String

   args[])throws Exception{

      ServerSocket ss=new ServerSocket(3333);

      Socket s=ss.accept();

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

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

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


      String str="",str2="";

         System.out.println("------Server Side------\n Type your
message"); while(!str.equals("stop")){ str=din.readUTF();

         System.out.println("Client says :

         "+str); str2=br.readLine();

         dout.writeUTF(str2); dout.flush();

      }

      din.close();

      s.close();

      ss.close();
```

```
    }
}

/*     OUTPUT

Microsoft Windows [Version 10.0.19041.508]
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C:\Users\dell>cd C:\Users\dell\Java\CN\TCPchat

C:\Users\dell\Java\CN\TCPchat>javac Server.java

C:\Users\dell\Java\CN\TCPchat>java Server
------Server Side------
 Type your message
Client says : Hello Akash
Hi Tanvi
Client says : How are you ?
I am fine. What about you >
Client says : I am fine too
Great.
Client says : Can we meet tomorrow ?
Yes sure
Client says : Okay Bye
Bye
Client says : stop
stop
C:\Users\dell\Java\CN\TCPchat>
*/
```

```
/*------------------CLIENT SIDE--------------*/
import java.net.*; import java.io.*;


public class Client {


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


      Socket s = new Socket("localhost",3333);


      DataInputStream din=new DataInputStream(s.getInputStream());
      DataOutputStream dout=new DataOutputStream(s.getOutputStream());
      BufferedReader br=new BufferedReader(new
InputStreamReader(System.in));


      String str="",str2="";
         System.out.println("------Client Side------\n Type your
message"); while(!str.equals("stop")){ str=br.readLine();
dout.writeUTF(str); dout.flush(); str2=din.readUTF();
         System.out.println("Server says: "+str2);
      }


      dout.close();
      s.close();
   }
}


/*     OUTPUT


Microsoft Windows [Version 10.0.19041.508]
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```
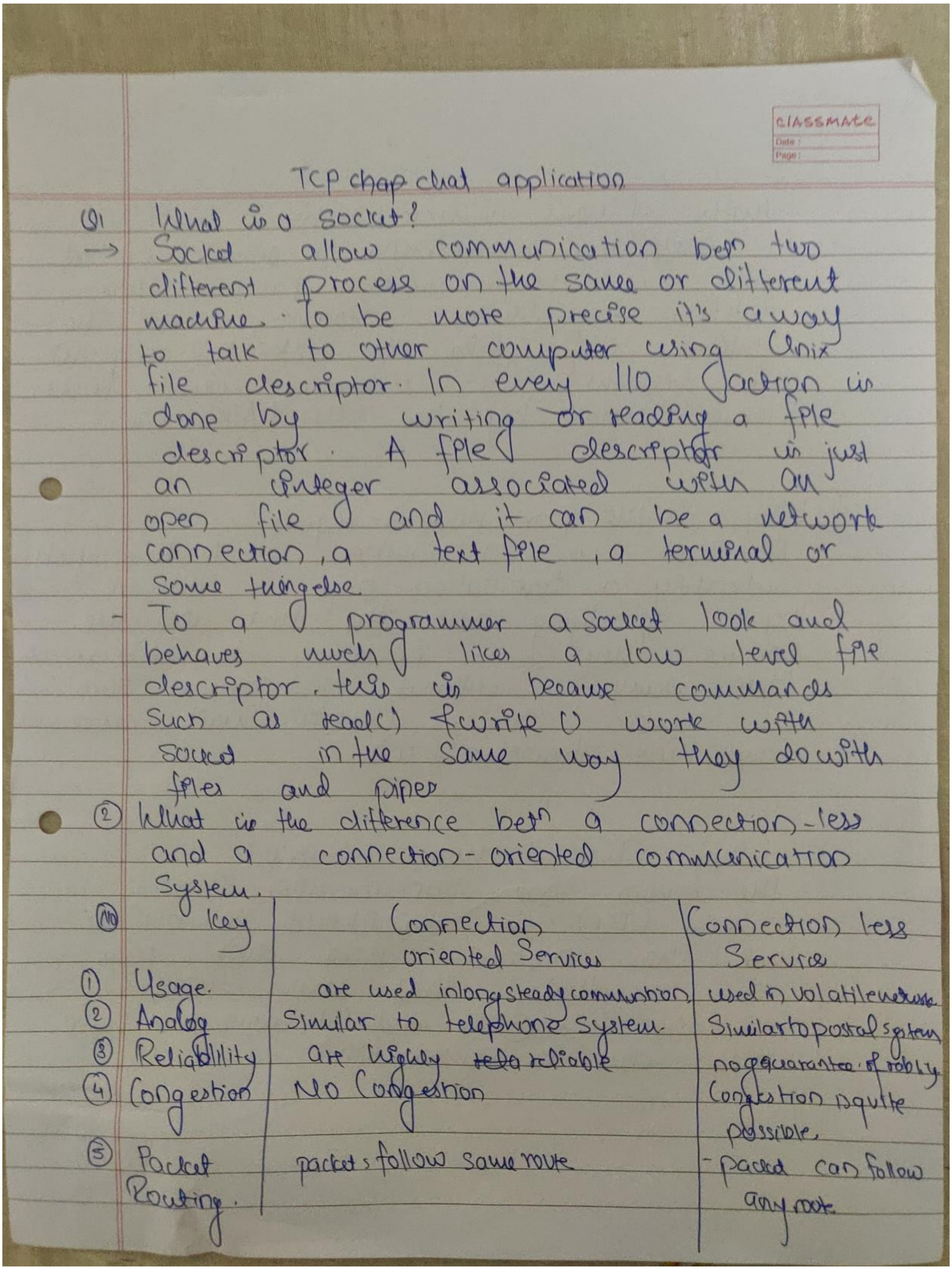

```
C:\Users\dell>cd C:\Users\dell\Java\CN\TCPchat

C:\Users\dell\Java\CN\TCPchat>javac Client.java

C:\Users\dell\Java\CN\TCPchat>java Client
------Client Side------
 Type your message
Hello jay
Server says: Hi simran
How are you ?
Server says: I am fine. What about you >
I am fine too
Server says: Great.
Can we meet tomorrow ?
Server says: Yes sure
Okay Bye Server
says: Bye stop
Server says: stop

C:\Users\dell\Java\CN\TCPchat>
*/
```



classmate
Date :
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TCP chap chat application

Q1 What is a socket?

→ Socket allow communication betn two different process on the same or different machine. To be more precise it's a way to talk to other computer using Unix file descriptor. In every I/O action is done by writing or reading a file descriptor. A file descriptor is just an integer associated with an open file and it can be a network connection, a text file, a terminal or some thing else

- To a programmer a socket look and behaves much likes a low level file descriptor. this is because commands such as read() &write () work with socket in the same way they do with files and pipes

② What is the difference betn a connection-less and a connection-oriented communication System.

Ans	Key	Connection oriented Services	Connection less Service
①	Usage.	are used in long steady communction,	used in volatile network
②	Analog	Similar to telephone system.	Similar to postal system
③	Reliablility	are highly ~~tela~~ reliable	no guarantee of reliablity
④	Congestion	No Congestion	Congestion is quite possible.
⑤	Packet Routing.	packets follow same route	- packet can follow any route.

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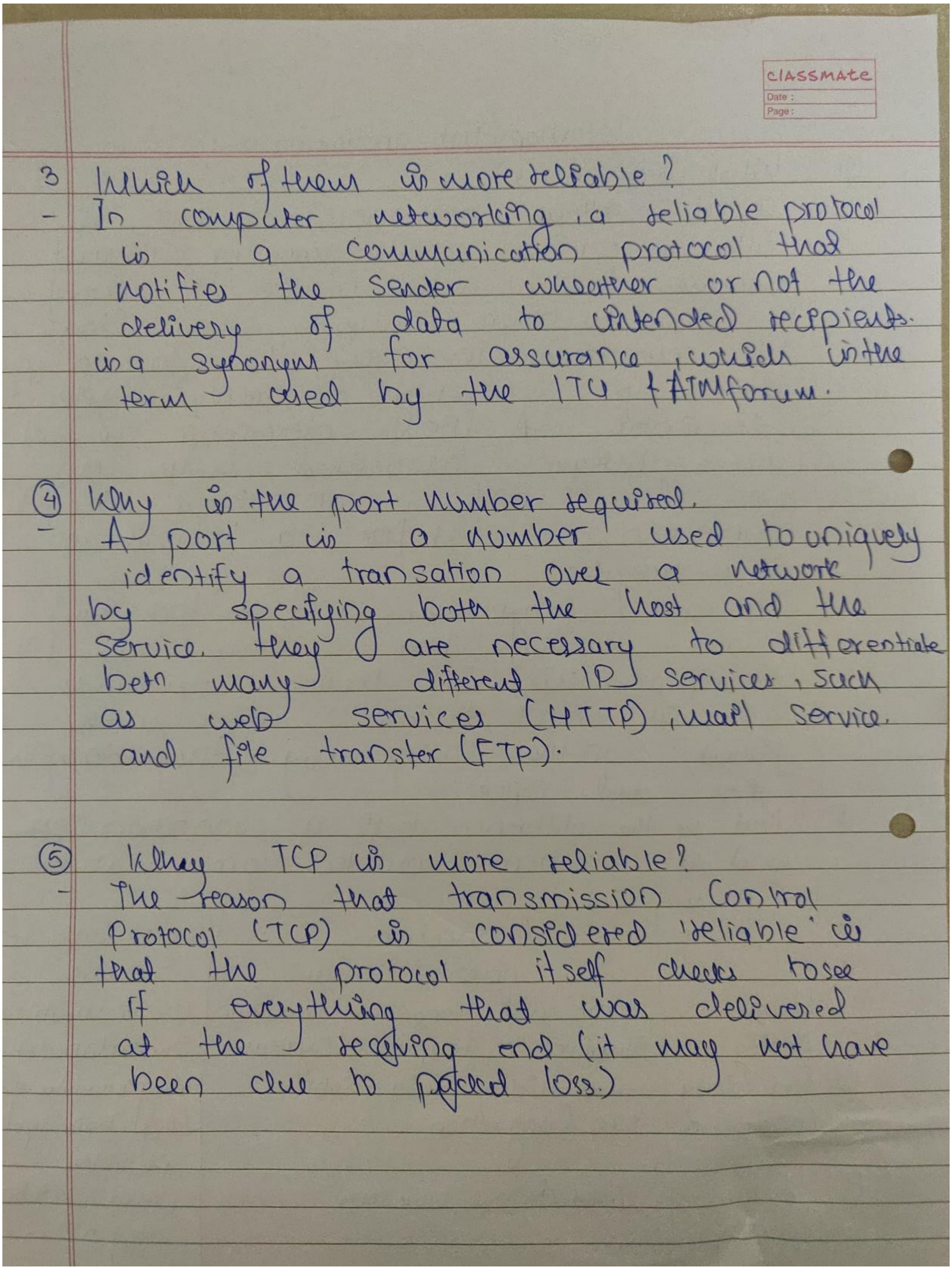

CLASSMATE

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3 Which of them is more reliable ?

- In computer networking, a reliable protocol is a communication protocol that notifies the sender whether or not the delivery of data to intended recipients. is a synonym for assurance, which is the term used by the ITU & ATM forum.

(4) Why is the port number required.

- A port is a number used to uniquely identify a transation over a network by specifying both the host and the service. they are necessary to differentiate betn many different IP services, such as web services (HTTP), mail service. and file transfer (FTP).

(5) Why TCP is more reliable?

- The reason that transmission Control Protocol (TCP) is considered 'reliable' is that the protocol itself checks to see if everything that was delivered at the receiving end (it may not have been due to packed loss.)

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