EX.NO 4(A) Applications using TCP sockets like Echo client and Echo server

Aim

To write a java program for applications using TCP sockets like Echo client and Echo server

Algorithm

1.Start the program.
2.Get the frame size from the user

3.To create the framebased on the user request.
4.To send frames to server from the client side.

5.If your frames reach the server it will send ACK signal to client otherwise it will send NACK signal to client.
6.Stop the program

Program:

EchoServer.Java:

```
import java.io.*; import
java.net.*; public class
EchoServer
{
        public EchoServer(int portnum)
        {
    try
                {
                        server = new ServerSocket(portnum);
                }
                catch (Exception err)
                {
                        System.out.println(err);
                }
        }
        public void serve()
```

```
        {
    try     {
                        while (true)
                        {
                                Socket client = server.accept();
                                BufferedReader r = new BufferedReader(new
InputStreamReader(client.getInputStream()));
                                PrintWriter w = new
PrintWriter(client.getOutputStream(),
                                                        true);
                                w.println("Welcome to the Java EchoServer.  Type
'bye' to
                                                close.");
                                String line;
                                do
                                {
                                        line = r.readLine();
                                if ( line != null )
                                                w.println("Got: "+ line);
                                        System.out.println (line);
                                }
                                while ( !line.trim().equals("bye") );
                        client.close();
                        }
                        }
                        catch (Exception err)
                        {
                                System.err.println(err);
                        }
                }
                public static void main(String[] args)
```

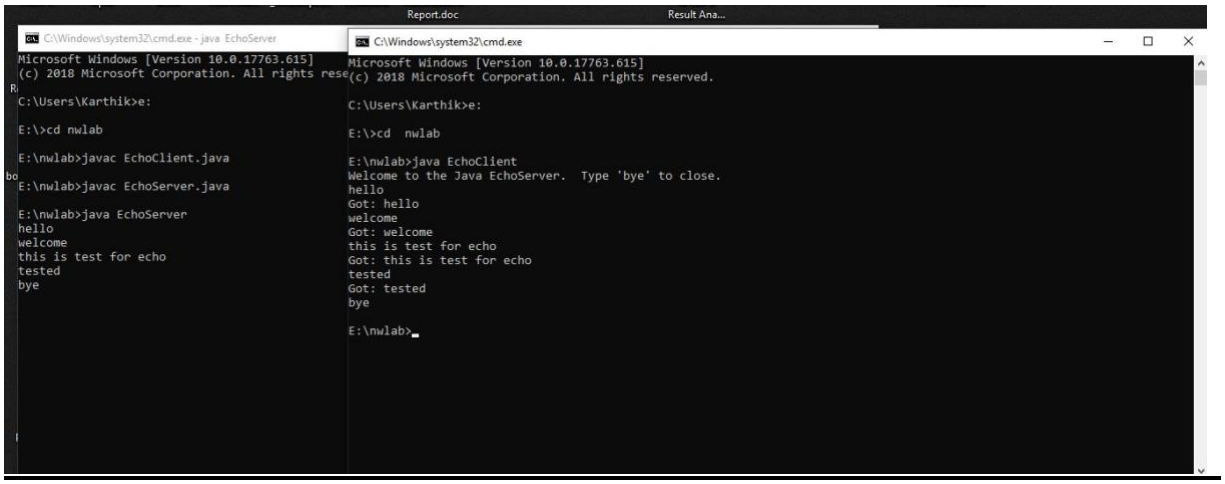
```
	{
		EchoServer s = new EchoServer(9999);
		s.serve();
	}
	private ServerSocket server;
}
```

EchoClient.java :

```
import java.io.*;
import java.net.*;
public class EchoClient
{
	public static void main(String[] args)
	{
	try
		{
			Socket s = new Socket("127.0.0.1", 9999);
			BufferedReader r = new BufferedReader(new
					InputStreamReader(s.getInputStream()));
			PrintWriter w = new PrintWriter(s.getOutputStream(), true);
			BufferedReader con = new BufferedReader(new
					InputStreamReader(System.in));
			String line;
			do
			{
				line = r.readLine();
		if ( line != null )
	System.out.println(line);
	line = con.readLine();
	w.println(line);
			}
```

```
                while ( !line.trim().equals("bye") );
            }
            catch (Exception err)
            {
                System.err.println(err);
            }
        }
}
```

Output:



Viva questions:

1. Define server and what are the types of server?
2. What are the three types of socket function?
3. What are concurrent servers?
4. Define Iterative server
5. Compare Iterative server and concurrent server
6. Explain socket address structure
7. List some character stream support classes
8. What do you mean by socket programming?

Result:

Thus the java program to concurrently communicate using TCP Sockets was executed successfully