**5 B) TCP client and server application to transfer file.**

**FileServer.java**

import java.io.BufferedInputStream;

import java.io.File;

import java.io.FileInputStream;

import java.io.OutputStream;

import java.net.InetAddress;

import java.net.ServerSocket;

import java.net.Socket;

public class FileServer

{

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

{

*//Initialize Sockets*

 ServerSocket ssock = new ServerSocket(5004);

 Socket socket = ssock.accept();

*//The InetAddress specification*

 InetAddress IA = InetAddress.getByName("localhost");

*//Specify the file*

 File file = new File("R:\\Desktop\\vscode\\cn\_lab\\serverfile.txt");

 FileInputStream fis = new FileInputStream(file);

 BufferedInputStream bis = new BufferedInputStream(fis);

*//Get socket's output stream*

 OutputStream os = socket.getOutputStream();

*//Read File Contents into contents array*

 byte[] contents;

 long fileLength = file.length();

 long current = 0;

 long start = System.nanoTime();

 while(current!=fileLength){

 int size = 10000;

 if(fileLength - current >= size)

 current += size;

 else{

 size = (int)(fileLength - current);

 current = fileLength;

 }

 contents = new byte[size];

 bis.read(contents, 0, size);

 os.write(contents);

 System.out.print("Sending file ... "+(current\*100)/fileLength+"% complete!");

 }

 os.flush();

*//File transfer done. Close the socket connection!*

 socket.close();

 ssock.close();

 System.out.println("File sent succesfully!");

 } }

**FileClient.java**

import java.io.BufferedOutputStream;

import java.io.FileOutputStream;

import java.io.InputStream;

import java.net.InetAddress;

import java.net.Socket;

public class FileClient {

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

*//Initialize socket*

 Socket socket = new Socket(InetAddress.getByName("localhost"), 5004);

 byte[] contents = new byte[10000];

*//Initialize the FileOutputStream to the output file's full path.*

 FileOutputStream fos = new FileOutputStream("R:\\Desktop\\vscode\\cn\_lab\\clientfile.txt");

 BufferedOutputStream bos = new BufferedOutputStream(fos);

 InputStream is = socket.getInputStream();

*//No of bytes read in one read() call*

 int bytesRead = 0;

 while((bytesRead=is.read(contents))!=-1)

 bos.write(contents, 0, bytesRead);

 bos.flush();

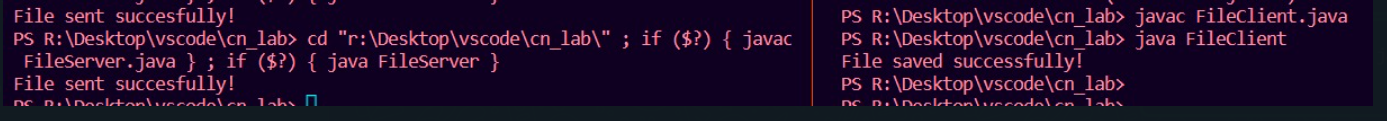
 socket.close();

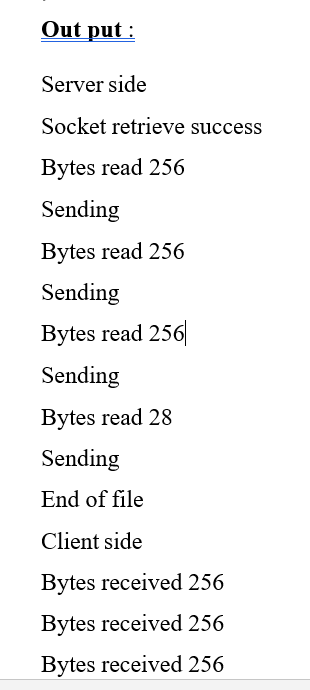
 System.out.println("File saved successfully!");

 }

}

**OUTPUT:**

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