**Practical No.1**

**Remote Process Communication**

**1-A] Aim: Develop a program for a multi-client chat server.**

**ChatClient.java** //1st file

package com.mycompany.chatclient;

import java.io.\*;

import java.net.\*;

public class ChatClient {

Socket soc;

BufferedReader br,br1;

PrintWriter out;

String str;

public ChatClient()

{

try{

soc=new Socket(InetAddress.getLocalHost(),9999);

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

out=new PrintWriter(soc.getOutputStream(),true);

System.out.println("Chat client started.");

while(true){

str=br.readLine();

out.println(str);

new ChatServer();

} }

catch(Exception e){

}

}

class ChatServer extends Thread

{

String str1;

ChatServer()

{

try{

br1=new BufferedReader(new InputStreamReader(soc.getInputStream()));

start();

}

catch(Exception e)

{}

}

public void run(){

try{

str1=br1.readLine();

System.out.println("Server says:"+str1);

}

catch(Exception e){}

}

}

public static void main(String[] args)

{

new ChatClient();

}}

**ChatServer.java** //2nd file

package com.mycompany.chatclient;

import java.io.\*;

import java.net.\*;

public class ChatServer extends Thread{

ServerSocket ss;

Socket soc;

BufferedReader br,br1;

PrintWriter out;

String str;

public ChatServer()

{

try{

ss=new ServerSocket(9999);

soc=ss.accept();

br=new BufferedReader(new InputStreamReader(soc.getInputStream()));

out=new PrintWriter(soc.getOutputStream(),true);

System.out.println("Chat server started.");

start();

new ChatServer1();

}

catch(Exception e)

{} }

public void run(){

try{

while(true)

{

str=br.readLine();

System.out.println("Client says:"+str);

} }

catch(Exception e)

{} }

class ChatServer1{

String str1;

ChatServer1()

{

try{

br1=new BufferedReader(new InputStreamReader(System.in));

out=new PrintWriter(soc.getOutputStream(),true);

while(true)

{

str1=br1.readLine();

out.println(str1);

} }

catch(Exception e)

{}}}

public static void main(String[] args)

{

new ChatServer();

}}

**1-B] Aim: Implement a server to find whether an entered string a palindrome using socket**

**PalinClient.java** //1st File

package com.mycompany.palinclient;

import java.io.BufferedReader;

import java.io.InputStreamReader;

import java.io.PrintWriter;

import java.net.InetAddress;

import java.net.Socket;

public class PalinClient {

Socket soc;

BufferedReader br,br1;

PrintWriter out;

String str;

public PalinClient()

{

try{

soc=new Socket("127.0.0.1",8765);

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

br1=new BufferedReader(new InputStreamReader(soc.getInputStream()));

out=new PrintWriter(soc.getOutputStream());

while(true){

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

str=br.readLine();

out.println(str);

out.flush();

System.out.println("Message from server: ");

str=br1.readLine();

System.out.println(str);

if(str.equals("q"))

break; }

soc.close();

}

catch(Exception e){

}

}

public static void main(String[] args)

{

new PalinClient();

}

}

**PalinServer.java** //2nd File

package com.mycompany.palinclient;

import java.io.BufferedReader;

import java.io.InputStreamReader;

import java.io.PrintWriter;

import java.net.ServerSocket;

import java.net.Socket;

public class PalinServer {

ServerSocket ss;

Socket soc;

BufferedReader br,br1;

PrintWriter out;

String str;

public PalinServer()

{

try{

ss=new ServerSocket(8765);

System.out.println("Server is listening to port 8765");

soc=ss.accept();

System.out.println("Connection Established");

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

br1=new BufferedReader(new InputStreamReader(soc.getInputStream()));

out=new PrintWriter(soc.getOutputStream());

while(true)

{

System.out.println("Message from client");

str=br1.readLine();

int k=str.length();

System.out.println(str);

int left=0, right=k-1, flag=1;

while(left<=right)

{

if(str.charAt(left)!=(str.charAt(right)))

{

flag=0;

break;

}

else

{

left++; right--;

}

}

if(flag==0)

System.out.println("Not a palindrome string");

else

System.out.println("Is a palindrome string");

out.println(str);

out.flush();

if(str.equals("q"))

break;

}

}

catch(Exception e)

{}

}

public static void main(String[] args)

{

new PalinServer();

}

}