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server.java

```
//Server.java
import java.io.BufferedReader;
import java.io.InputStreamReader;
import java.io.PrintWriter;
import java.net.ServerSocket;
import java.net.Socket;
import java.util.Vector;

public class Server {
    private static Vector<PrintWriter> writers = new Vector<PrintWriter>();

    public static void main(String[] args) throws Exception {
        ServerSocket listener = new ServerSocket(9001);
        System.out.println("The server is running at port 9001."); while
        (true)
            new Handler(listener.accept()).start();
    }

    private static class Handler extends Thread {
        private Socket socket;

        public Handler(Socket socket) {
            this.socket = socket;
        }

        public void run() {
            try {
                BufferedReader in = new BufferedReader(new
                    InputStreamReader(socket.getInputStream()));
                PrintWriter out = new PrintWriter(socket.getOutputStream(), true);
                out.println("SUBMITNAME");
                String name = in.readLine();
                System.out.println(name + " joined");
                writers.add(out);
                while (true) {
                    String input = in.readLine();
                    for (PrintWriter writer : writers)
                        writer.println("MESSAGE" + name + ":" + input);
                }
            } catch (Exception e) {
                e.printStackTrace();
            }
        }
    }
}
```

```

}
} catch (Exception e) {
System.err.println(e);
}
}
}
}
}

```

master.java

```

import java.io.BufferedReader;
import java.io.InputStreamReader;
import java.io.PrintWriter;
import java.net.Socket;
import java.util.Scanner;

public class master {
public static void main(String[] args) throws Exception {
Scanner sc = new Scanner(System.in);
Socket socket = new Socket("localhost", 9001);
BufferedReader in = new BufferedReader(new
InputStreamReader(socket.getInputStream()));
PrintWriter out = new PrintWriter(socket.getOutputStream(), true);

System.out.print("Enter your name: ");
String name = sc.nextLine();

while (true) {
String line = in.readLine();
if (line.startsWith("SUBMITNAME")) {
out.println(name);
} else if (line.startsWith("MESSAGE")) {
System.out.println(line.substring(8));
}
if(name.startsWith("master")) {
System.out.print("Enter a message: ");
out.println(sc.nextLine());
}
}
}
}
}

```

slave1.java

```

import java.io.BufferedReader;
import java.io.InputStreamReader;
import java.io.PrintWriter;

```

```

import java.net.Socket;
import java.util.Scanner;
public class slave1 {
    public static void main(String[] args) throws Exception {
        Scanner sc = new Scanner(System.in);
        Socket socket = new Socket("localhost", 9001);
        BufferedReader in = new BufferedReader(new
        InputStreamReader(socket.getInputStream()));
        PrintWriter out = new PrintWriter(socket.getOutputStream(), true);

        System.out.print("Enter your name: ");
        String name = sc.nextLine();

        while (true) {
            String line = in.readLine();
            if (line.startsWith("SUBMITNAME")) {
                out.println(name);
            } else if (line.startsWith("MESSAGE")) {
                System.out.println(line.substring(8));
            }
            if(name.startsWith("master")) {
                System.out.print("Enter a message: ");
                out.println(sc.nextLine());
            }
        }
    }
}

```

slave2.java

```

import java.io.BufferedReader;
import java.io.InputStreamReader;
import java.io.PrintWriter;
import java.net.Socket;
import java.util.Scanner;

public class slave2 {
    public static void main(String[] args) throws Exception {
        Scanner sc = new Scanner(System.in);
        Socket socket = new Socket("localhost", 9001);
        BufferedReader in = new BufferedReader(new
        InputStreamReader(socket.getInputStream()));
        PrintWriter out = new PrintWriter(socket.getOutputStream(), true);

        System.out.print("Enter your name: ");
        String name = sc.nextLine();
    }
}

```

```

while (true) {
String line = in.readLine();
if (line.startsWith("SUBMITNAME")) {
out.println(name);
} else if (line.startsWith("MESSAGE")) {
System.out.println(line.substring(8));
}
if(name.startsWith("master")) {
System.out.print("Enter a message: ");
out.println(sc.nextLine());
}
}
}
}
}
}

```

output

```

apsit@apsit-HP-Pro-Tower-280-G6-PCI-Desk:~$ cd /home/apsit/Projects/Java/Server/
apsit@apsit-HP-Pro-Tower-280-G6-PCI-Desk:~/Projects/Java/Server$ java Server
The server is running at port 9999.
master joined
slave1 joined
slave2 joined

```

```

apsit@apsit-HP-Pro-Tower-280-G6-PCI-Desk:~$ cd /home/apsit/Projects/Java/Client/
apsit@apsit-HP-Pro-Tower-280-G6-PCI-Desk:~/Projects/Java/Client$ java Master
Enter your name: master
Enter a message: hello from master
aster:hello from master
Enter a message:

```

```

apsit@apsit-HP-Pro-Tower-280-G6-PCI-Desk:~$ cd /home/apsit/Projects/Java/Client/
apsit@apsit-HP-Pro-Tower-280-G6-PCI-Desk:~/Projects/Java/Client$ java Slave1
Enter your name: slave1
aster:hello from master

```

```

apsit@apsit-HP-Pro-Tower-280-G6-PCI-Desk:~$ cd /home/apsit/Projects/Java/Client/
apsit@apsit-HP-Pro-Tower-280-G6-PCI-Desk:~/Projects/Java/Client$ java Slave2
Enter your name: slave2
aster:hello from master

```