

# SASTRA DEEMED TO BE UNIVERSITY THANJAVUR

Course Code: **CSE303**

Course Name: **Computer Networks Laboratory (CNL)**

## CNL Manual

Experiment Number: **1**

Experiment Name: **Development of a chat application based on socket programming**

Tools: **Java Programming**

Interface: **Graphical User Interface (GUI) using (Java Swing/AWT)**

Important Classes connection-oriented socket programming:

1. **Socket** class -- to communicate client and server
2. **ServerSocket** class -- to listen clients

### Socket class

Object of the Socket class provides features to communicate between client and server.

Important methods

Method	Description
-----	-----
1) public InputStream getInputStream()	returns the InputStream attached with this socket.
2) public OutputStream getOutputStream()	returns the OutputStream attached with this socket.
3) public synchronized void close()	closes this socket

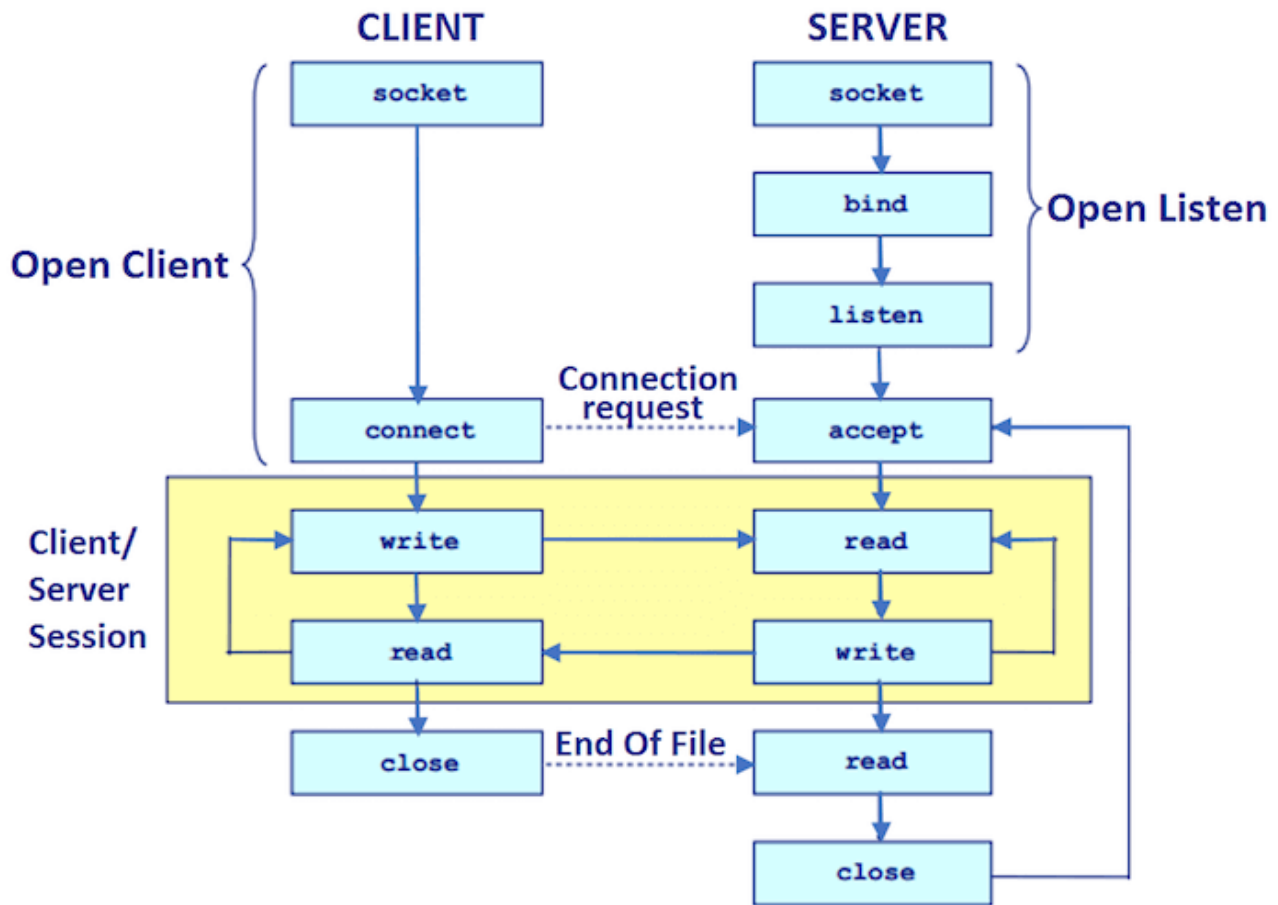
### ServerSocket class

Object of the ServerSocket to establish communication with the clients.

Important methods

Method	Description
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1) public Socket accept()	returns the socket and establish a connection between server and client.

2) public synchronized void close() closes the server socket.



## SOCKET API

(<https://www.javatpoint.com/socket-programming>)

### Creating Server:

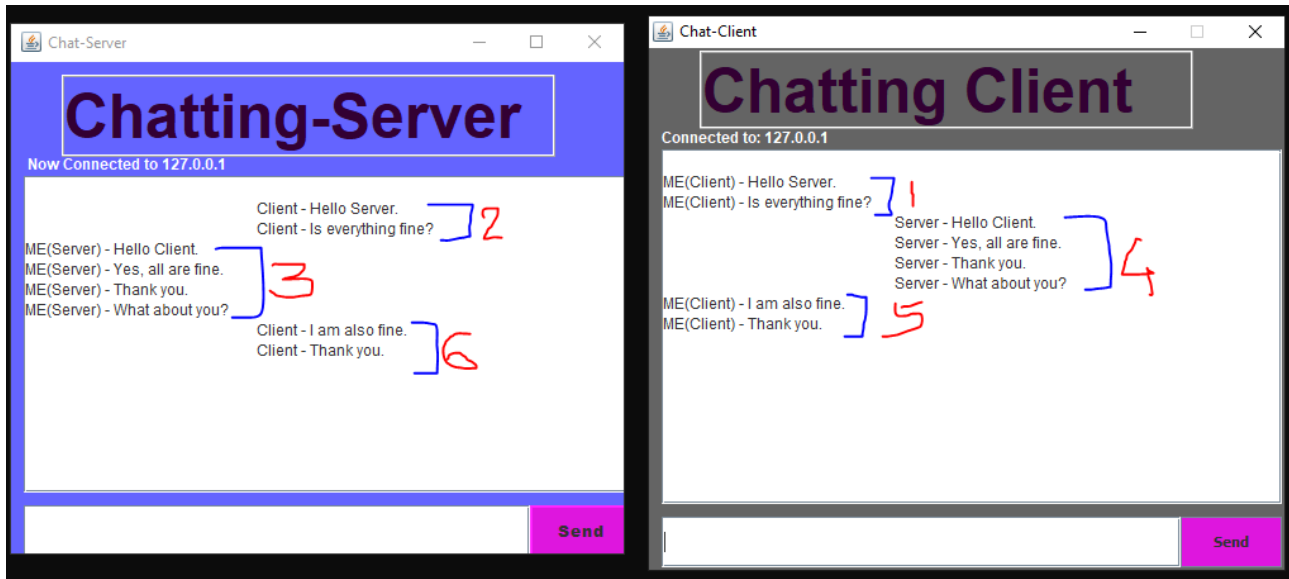
```
ServerSocket ss=new ServerSocket(4567);    // 4567 - user defined port number
Socket s=ss.accept();                     //establishes connection and waits for the client
```

### Creating Client:

We need to pass the **IP address or hostname** of the **Server** and a **port number**. For the same system, we can either use "localhost" or 127.0.0.1.

```
Socket s=new Socket("localhost",4567);
```

## Expected Sample Output



Use the Java Swing to create GUI with desired components.

Some important components are like

1. Use JFrame class to create a GUI.
2. JTextField ---- for text entry
3. JTextarea ---- text area for display texts
4. JButton ---- button to do some action
5. JPanel ---- to attach other GUI components