

Chat Application using Sockets

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Prerequisites

- Socket
- Python
- Tkinter

What is Socket ?

- Endpoints of Bidirectional communications channel.
- May communicate between processes on the same machine, or different machines.
- May be implemented over different channel types : TCP, UDP, Unix domain sockets and so on

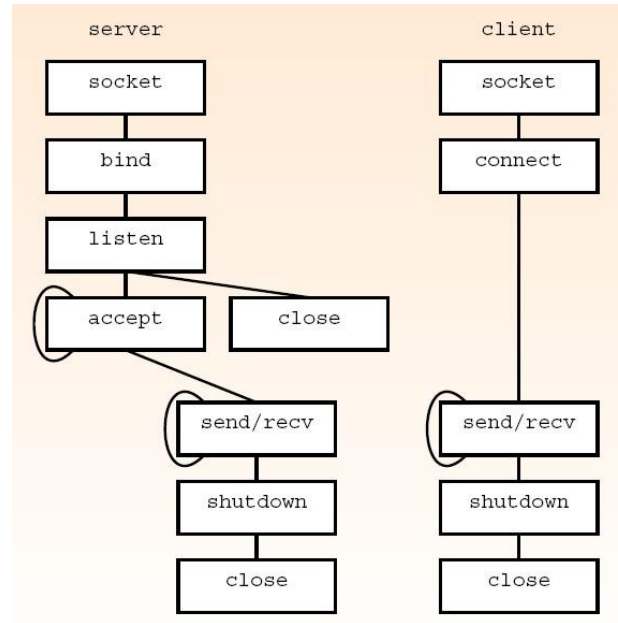
Sockets

- Uniquely identified by an IP address and a port.
- These (IP,Port) couple refers to an application.
- Used in client-server applilcation.
- Establishes connection between client and server and then for exchanging data.

Socket System calls

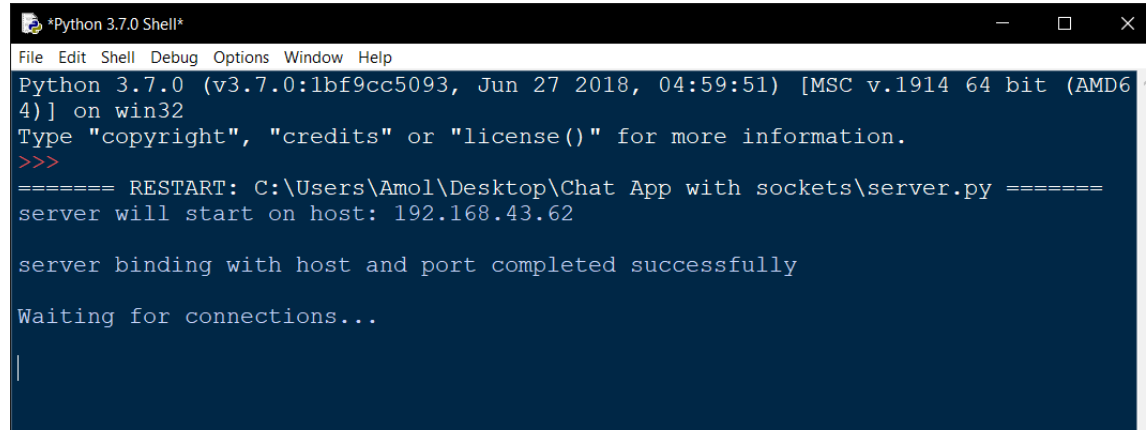
- `Socket()` creates a new socket.
- `bind()` binds the socket to an address.
- `listen()` allows socket to accept incoming connections from other sockets.
- `accept()` accepts a connection on a listening socket.
- `connect()` established a connection with another socket.

Our approach



Application snaps

SERVER

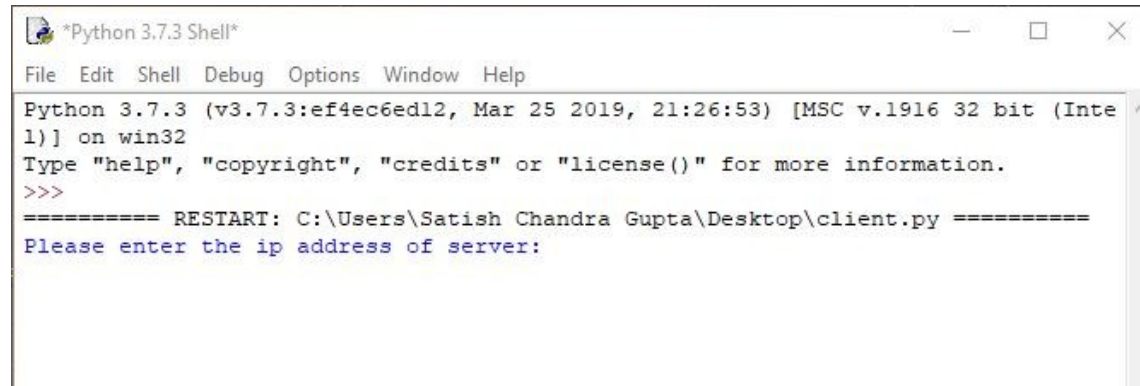


```
*Python 3.7.0 Shell*
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\Amol\Desktop\Chat App with sockets\server.py =====
server will start on host: 192.168.43.62

server binding with host and port completed successfully

Waiting for connections...
|
```

CLIENT



```
*Python 3.7.3 Shell*
File Edit Shell Debug Options Window Help
Python 3.7.3 (v3.7.3:ef4ec6ed12, Mar 25 2019, 21:26:53) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\Satish Chandra Gupta\Desktop\client.py =====
Please enter the ip address of server:
```


SERVER

CLIENT

```
*Python 3.7.0 Shell*
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bi
4)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\Amol\Desktop\Chat App with sockets\server.py ==
server will start on host: 192.168.43.62

server binding with host and port completed successfully

Waiting for connections...

('192.168.43.61', 50320) has been connected and is now online....
>>|
```

```
*Python 3.7.3 Shell*
File Edit Shell Debug Options Window Help
Python 3.7.3 (v3.7.3:ef4ec6ed12, Mar 25 2019, 21:26:53) [MSC v.1916 32 bit (Inte
1)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\Satish Chandra Gupta\Desktop\client.py =====
Please enter the ip address of server: 192.168.43.62

Connection to the chat server established successfully
```

SERVER

```
*Python 3.7.0 Shell*
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\Amol\Desktop\Chat App with sockets\server.py =====
server will start on host: 192.168.43.62

server binding with host and port completed successfully

Waiting for connections...

('192.168.43.61', 50347) has been connected and is now online...
>>Hello there!

message has been sent..

Client: Hi How are you?
>>I am fine. What about you?

message has been sent..

Client: I am good.
>>
```

CLIENT

```
*Python 3.7.3 Shell*
File Edit Shell Debug Options Window Help
Python 3.7.3 (v3.7.3:ef4ec6ed12, Mar 25 2019, 21:26:53) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\Satish Chandra Gupta\Desktop\client.py =====
Please enter the ip address of server: 192.168.43.62

Connection to the chat server established successfully

Server: Hello there!
>>Hi How are you?

message has been sent..

Server: I am fine. What about you?
>>I am good.

message has been sent..
```

Current Challenges

- Sending multiple line messages.
- Duplex communication.

Future Updates

- Implementation using graphical user interface(GUI)
- Connecting multiple clients to the same server for exchanging data

THANK YOU