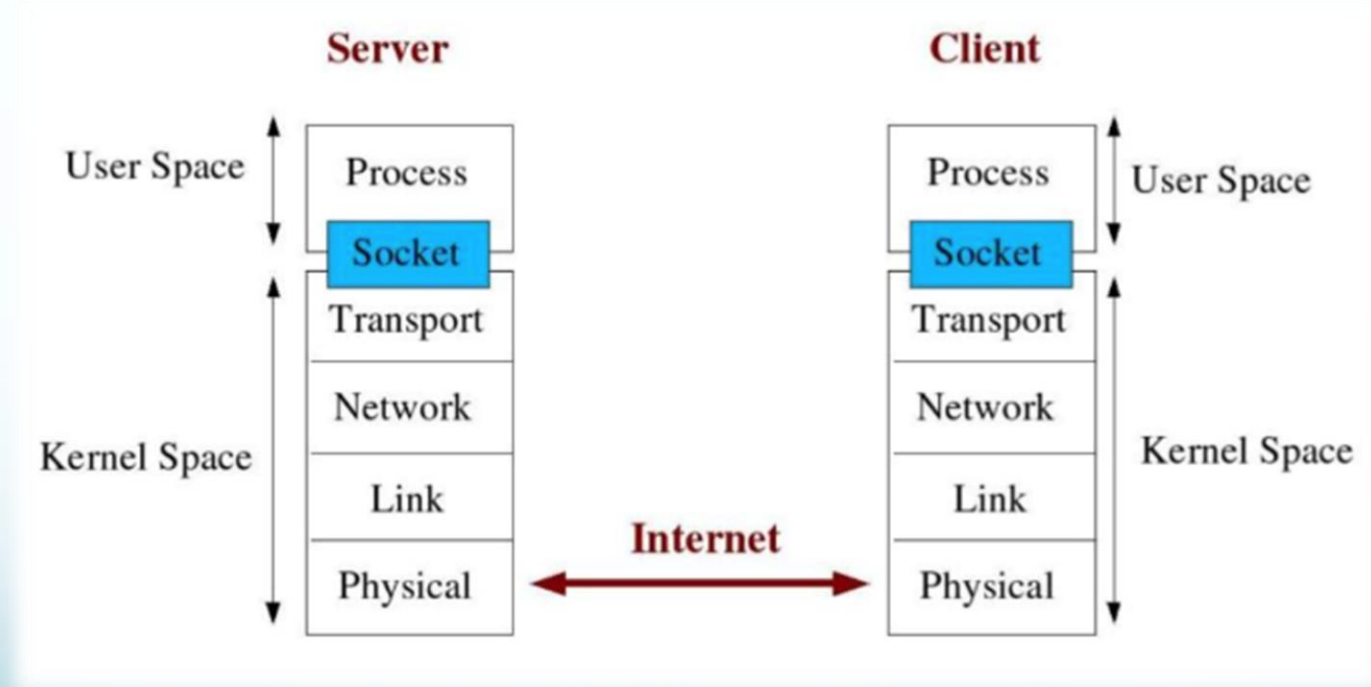# BLG 433E COMPUTER COMMUNICATIONS: SOCKET TUTORIAL

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What is Socket & Port?

- Socket is interface between Application and Transport layer
  - The application process can send/receive messages to/from another application process (local or remote)via a socket

What is Socket & Port?

- Multi process can be on internet from one computer (same IP address)

- There should be different Ports

- Internet sockets characterized by **IP Address (4 bytes)** and **port number (2 bytes)**

- **Port number → 0 to 65536**

- Web sites: HTTP , port # = 80, over TCP

- E-mail: POP3, port #=110, over TCP
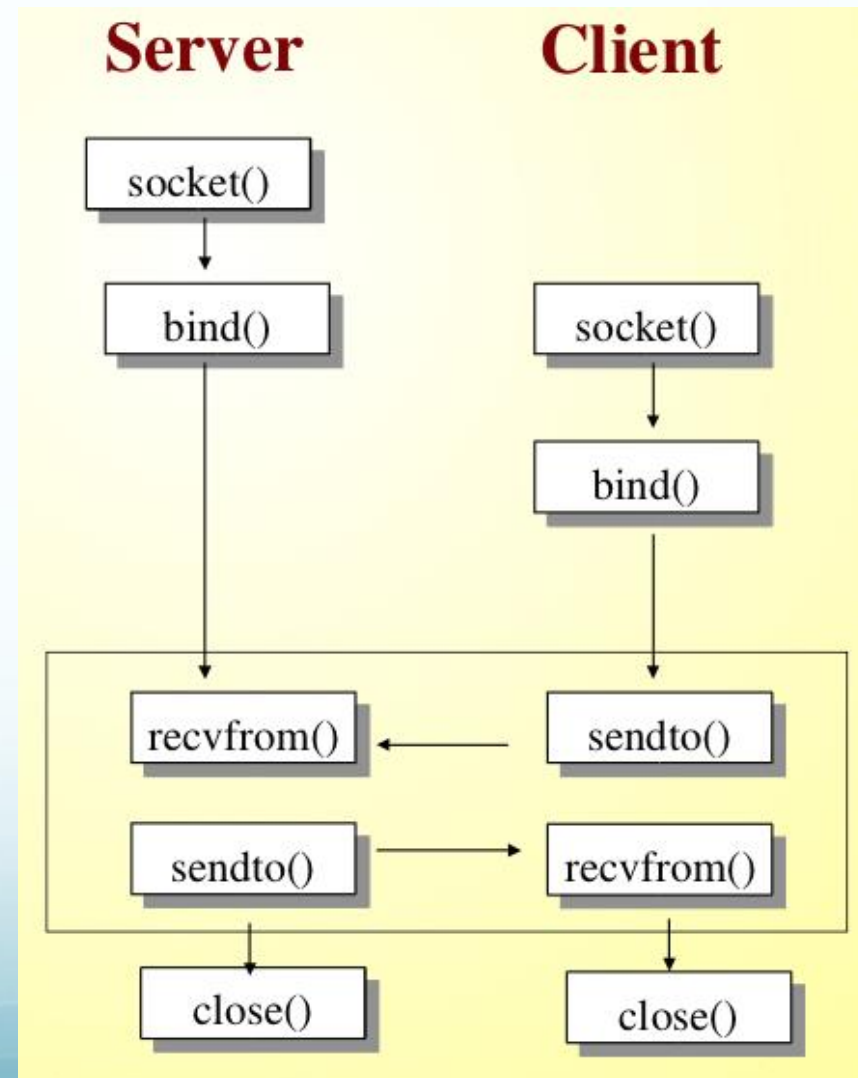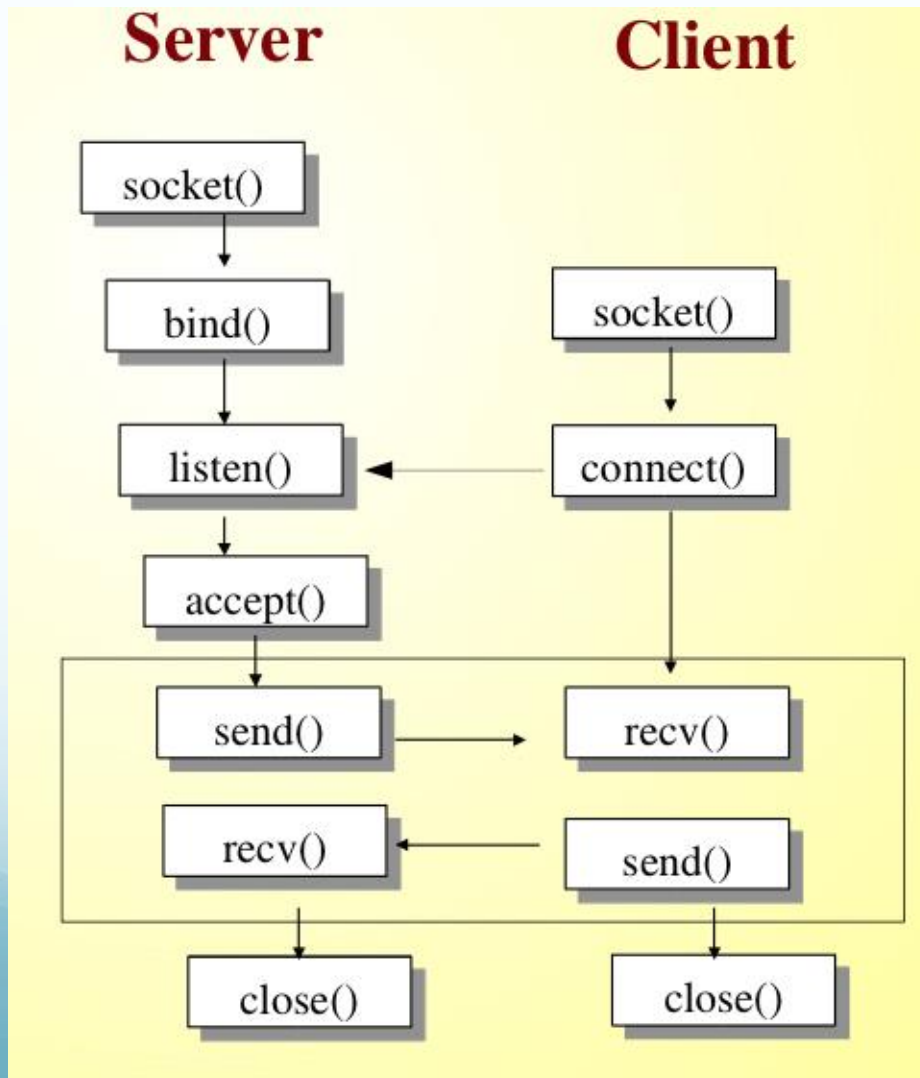
Socket Programming
Internet Socket Types

Stream Socket (SOCK_STREAM)
- Connection Oriented-Over TCP

Datagram Socket (SOCK_DGRAM)
- Connectionless-Over UDP

Socket Programming

socket() → Get the file descriptor

bind() - what port am I on?

connect() - Hello!

listen() - Call me please!

accept() - Thank you for calling !

send() and recv() - Let's talk!

sendto() and recvfrom()-DGRAM style

close()→bye bye!

Questions

R6.   Suppose you wanted to do a transaction from a remote client to a server as fast as possible. Would you use UDP or TCP? Why?

Questions

R26. InSection2.7, the UDP server described needed only one socket, where as the TCP server needed two sockets. Why? If the TCP server were to support n simultaneous connections, each from a different client host, how many sockets would the TCP server need?

Questions

R27. For the client-server application over TCP described in Section 2.7, why must the server program be executed before the client program? For the client- server application over UDP, why may the client program be executed before the server program?

Questions

P31. Install and compile the Python programs TCPClient and UDPClient (in Example 1) on one host and TCPServer and UDPServer on another host.

- Suppose you run TCP Client before you run TCP Server. What happens? Why?

- Suppose you run UDP Client before you run UDP Server. What happens? Why?