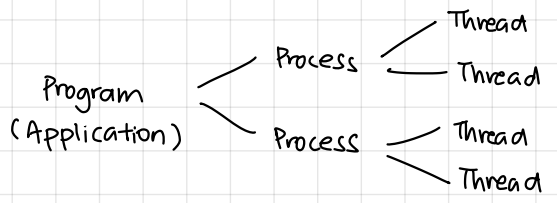


# #3 Application Layer : Socket Programming



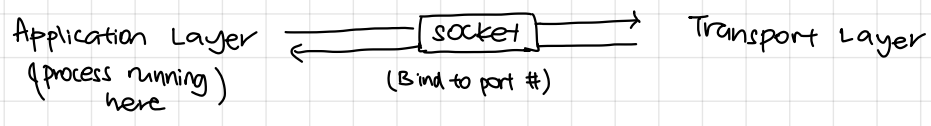
**Process:** - top-level execution container  
 - Independent memory space (isolated)

**Thread:** - runs in a process  
 - shared same memory

## Applications run in hosts as processes

- Communication within same host: inter-process communication (OS)
- " | " different host: exchange message (protocols)

## Port number of a host helps to identify the process via a socket



- Applications will treat internet as a black box, they will only send or receive information through the socket

## Datagram Socket : UDP socket

- connectionless, unreliable
- only one socket required

**Application:**  
 - attaches  
 - dest IP address + port  
 - src IP address + port

**Receiver identifies:**  
 - src IP address + port

## Stream Socket : TCP Socket

- process establishes a connection to another process

**TCP Server:**  
 - welcome / listening socket  
 ↳ when contacted by client, forks a new socket for server process to communicate with client

**TCP client**  
 - create socket to establish connection w server  
 - every connection has it's own connection instance