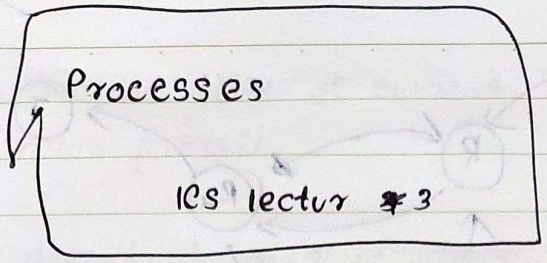


- A program in execution is called as a process. One line will execute at a time.

Parts of process.

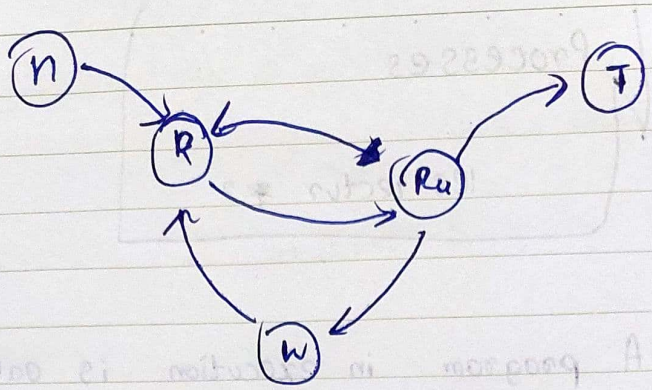
- text section
- Program Counter - next instruction to be executed.
- Stack - have temp data.
- Data Section.
- Heap

- Program is pasive entity, process is active entity.
- a program can be several processes.

Process States.

- Whaiting - Whaiting for resources
- New - Creat a process (bring exe to memory)
- Ready - ~~Running~~ - all recorees are allocated and ready to execute
- Running - being executed.
- Terminated - finished executed.

- if there is an interrupt go to ready state.
- Whaiting for Ilo go to whaiting state



Process control Block (PCB) / task control block

- Represent process in os by PCB (all info of process is stored.

ex : process state
Program counter
Cpu registers

Threads,

- process has a single thread of execution. if have multiple threads there will be different Program counters.

Process Scheduling,

- this will select processes from ready que and send it to processor to process.
- from ready que and whoit que.

- Switching a process from to another process called as Context Switching.

- Save the state of current process and reload the state of new process.

- cpu doesn't do anything while context switching. (Overhead)

Operations on processes.

- Create processes
- Terminate processes.

(01) Create processes.

- process can create another process. has a unique Id. (PId).

relationship that can have between parent & child.

- Resource Sharing
- Execution option
- Address Space

fork () → creat a new process
exec() → replace the current process
wait () → parent wait till child end.

(02) Process termination

- using exit() call process will delete.
- abort () → stop the execution of the child.

- Cascading termination - All childrens will terminated.

Zombi process - no parent. Parent sleep

Orphon process - if no wait and parent ~~gone to sleep~~ terminate.

Interprocess Communication (IPC)

- Used in Copperating processes to Communi-cat with different processes, need IPC.

2 Models of IPC.

01) Shared memory. - bounded buffer

02) Message passing.

Producer - Consumer problem.

Producer - produce items

Consumer - use items.

2 types of Producer - Consumer.

01) Unbounded buffer - unlimited

02) Bouded buffer. - fixed length

02) IPC message passing.

have 2 operations

- Send
- receive

- dont have Shared variable. Just pass the message. need a communication link.

Date No

Implementation of Communication link

- Physical
- Logical

Logical

- Direct link.
  - have to mention Sender and receiver.

- indirect Link.
  - have a mail box. both communicate using mail box. (have id).

So

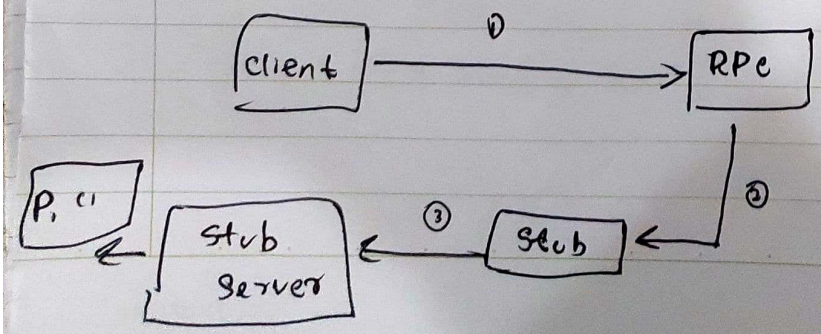
Buffer - que of messages.

Communication in client-server.

- Pipes
- Sockets
- Remote procedure call.

} IPs methods

Stub - all parameters send by client going to stub, and call function.



marshaling - Packing the parameters which can transmitted over network.

ProMate