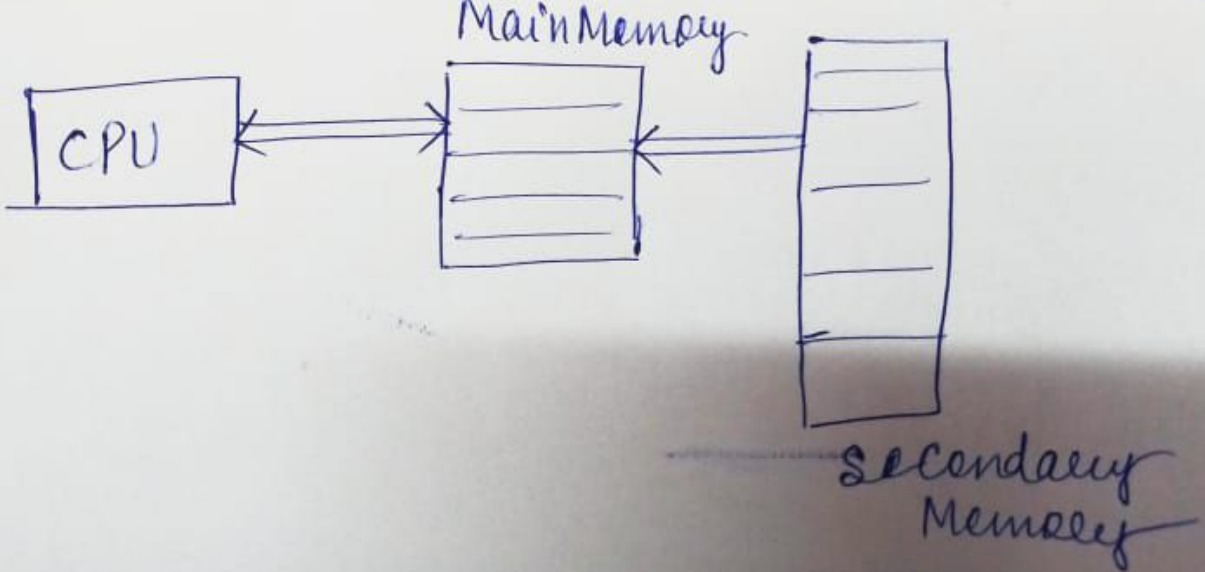
Memory Management Techniques

in Multiprogramming

- Contiguous Allocation
  - Fixed Partitioning or Static Partitioning or M.F.T
  - Dynamic Partitioning or M.V.T or Variable Partitioning
- Noncontiguous Allocation
  - Paging
  - Segmentation
  - Inverted Paging
  - Segmented Paging



Memory Management

- The operating system manages the Primary Memory or Main Memory. Main memory is made up of a large array of bytes or words where each byte or word is assigned a certain address.
- Main memory is a fast storage and it can be accessed directly by the CPU. For a program to be executed, it should be first loaded in the main memory. An Operating System performs the following activities for memory management:
- It keeps tracks of primary memory, i.e., which bytes of memory are used by which user program.
- The memory addresses that have already been allocated and the memory addresses of the memory that has not yet been used. In multi programming, the OS decides the order in which process are granted access to memory, and for how long.
- It Allocates the memory to a process when the process requests it and deallocates the memory when the process has terminated or is performing an I/O operation.

Definition: It Is The Functionality Of The Operating System Which Manages The 'Main Memory' And Keep Track Of Process Moving From ' Secondary Memory' To 'CPU' And Vice Versa.

Functionality :

- Keep Track Of What Memory Is In Use And What Memory Is Free
- Allocate Memory To A Process When Memory Is Free And DeAllocate Memory When They Do Not Required.
- Managing The Transfer Of Memory - Main Memory And Secondary Memory
- Prohibiting User Program To Enter In Others User Program Area And Operating System Area.
- Keep Updating Status Of Process

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• Keep Track Of What Memory Is In Use And What Memory Is Free

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GOALS :

• Maximize CPU Utilization

• Minimize Response Time

• Maximize Memory Management

• Prioritize Important Process