



MEMORY MANAGEMENT:

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

GOALS :

- Maximize CPU Utilization
- Minimize Response Time
- Maximize Memory Management
- Prioritize Important Process
- Protection To User Program And OS

OPERATING SYSTEM MEMORY MANAGEMENT

DEF:- MEMORY MANAGEMENT IS A FUNCTIONALITY OF OPERATING SYSTEM WHICH MANAGES 'MAIN MEMORY' AND KEEP TRACK OF PROCESSES MOVING FROM 'SECONDARY MEMORY' TO 'MAIN MEMORY' TO 'CPU' AND VICE VERSA.

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FUNCTIONALITY:-

- KEEP TRACK OF WHAT MEMORY IS IN 'USE' AND WHAT MEMORY IS 'FREE'
- ALLOCATE FREE MEMORY TO PROCESSES WHEN 'NEEDED' AND
→ 'DEALLOCATES' IT WHEN THEY DONOT REQUIRED
- MANAGING THE TRANSFER OF 'MEMORY' 'RAM & DISK'
- PROHIBITING USER PROGRAM TO ENTER IN OS AREA & OTHERS USER AREA
- KEEP UPDATING STATUS OF PROCESSES

GOALS:-

- MAXIMISE CPU UTILISATION
- MINIMISE RESPONSE TIME
- MAXIMISE MEMORY UTILISATION
- PRIORITISE IMPORTANT PROCESSES
- SECURITY TO USER PROGRAMS AND OPERATING SYSTEM

The diagram illustrates the memory management process. On the left, a circle labeled 'CPU' is connected by a double-headed arrow labeled 'PRO' to a vertical stack of boxes representing 'OS MAIN MEMORY'. This stack is further connected by another double-headed arrow labeled 'PRO' to a larger vertical stack of boxes representing 'SECONDARY MEMORY', which is labeled '100 GB' at the bottom.