



# SNS COLLEGE OF TECHNOLOGY



Coimbatore-35.

**An Autonomous Institution**

**COURSE NAME : 23CSE201 OPERATING SYSTEMS**

**II YEAR/ IV SEMESTER**

**UNIT-I OVERVIEW AND PROCESS MANAGEMENT**

**Topic: Process Management – Memory Management**

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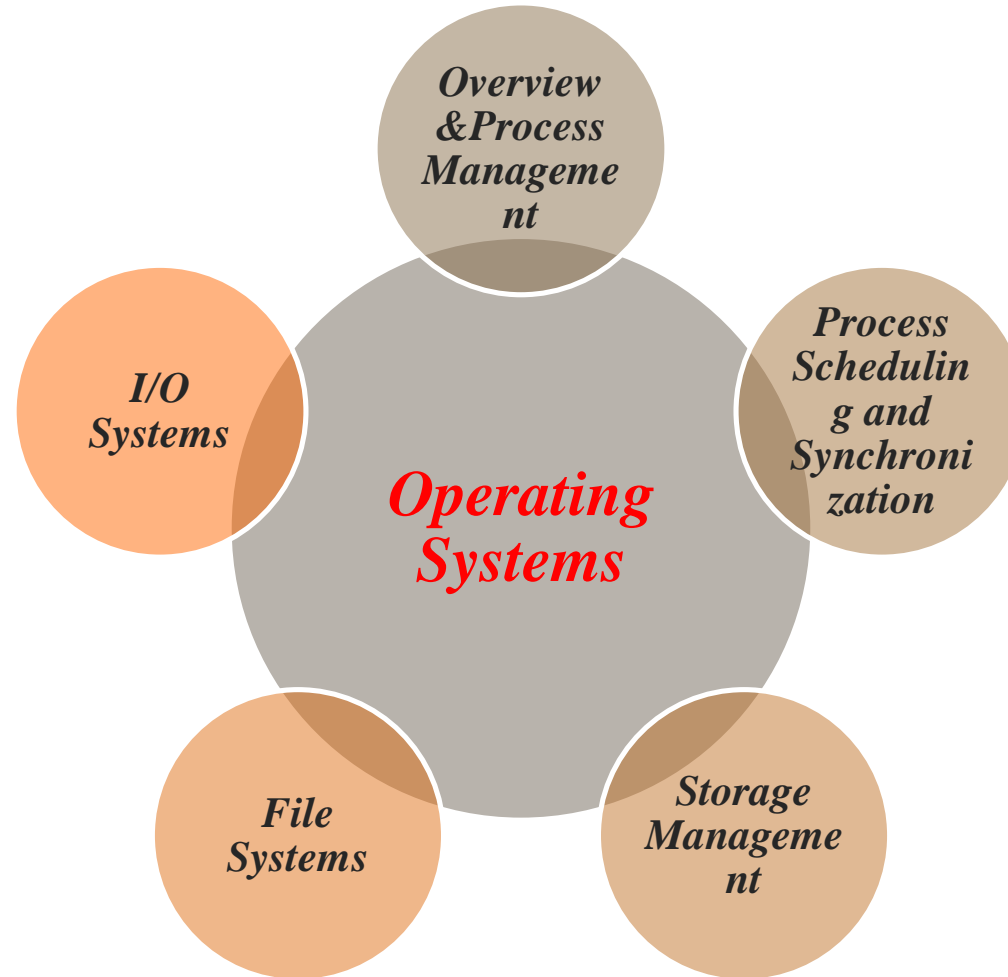


## *Operating Systems*



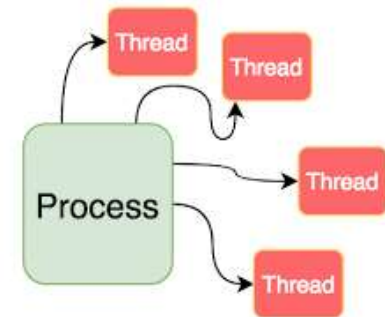
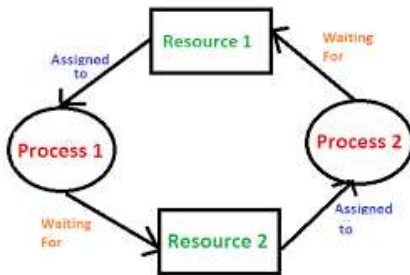
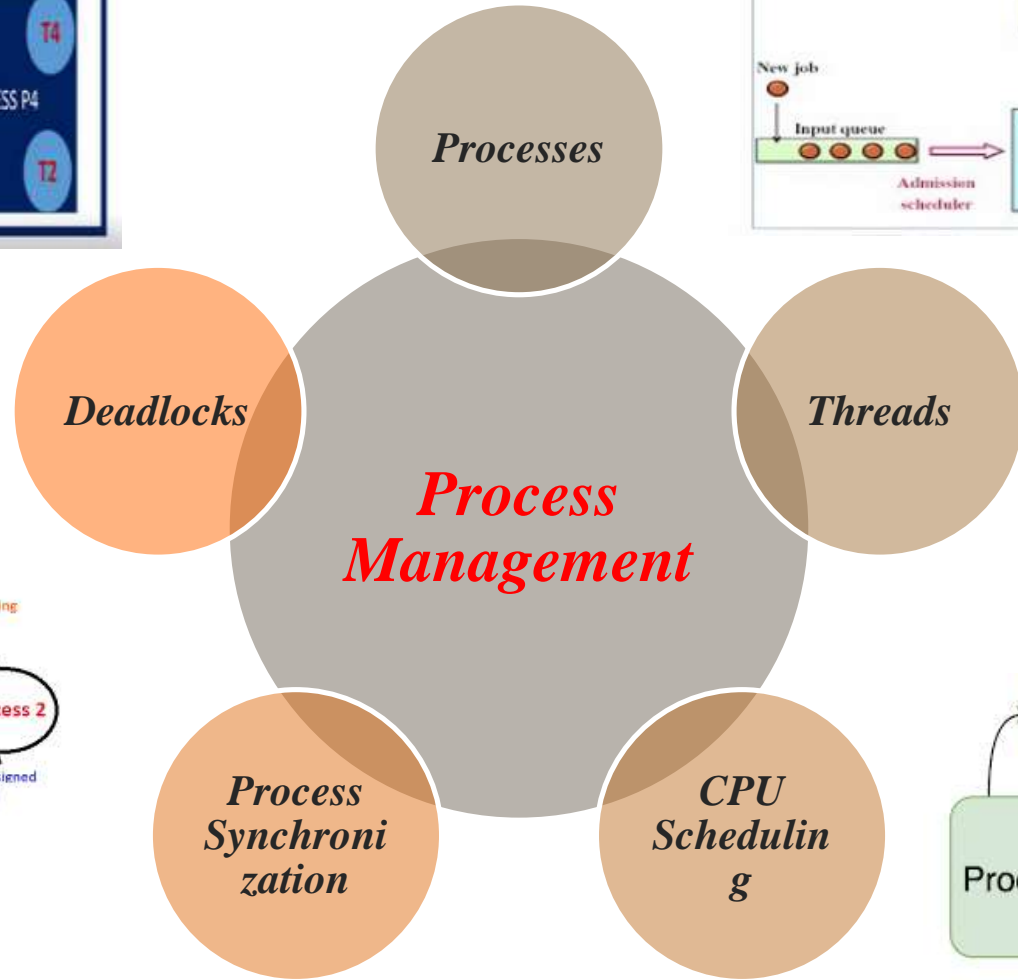
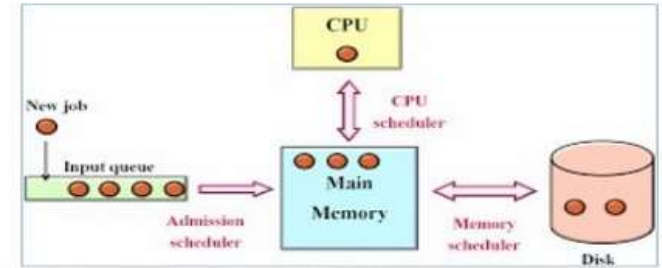
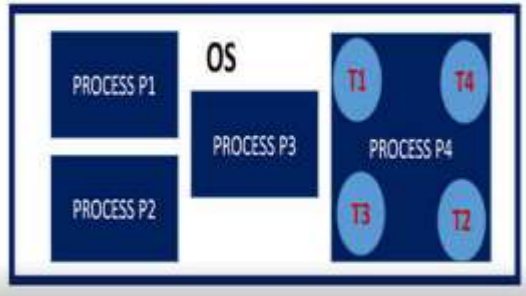


# *Introduction*



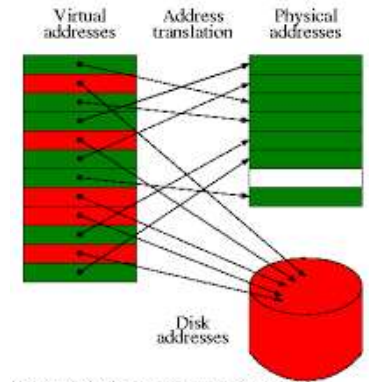
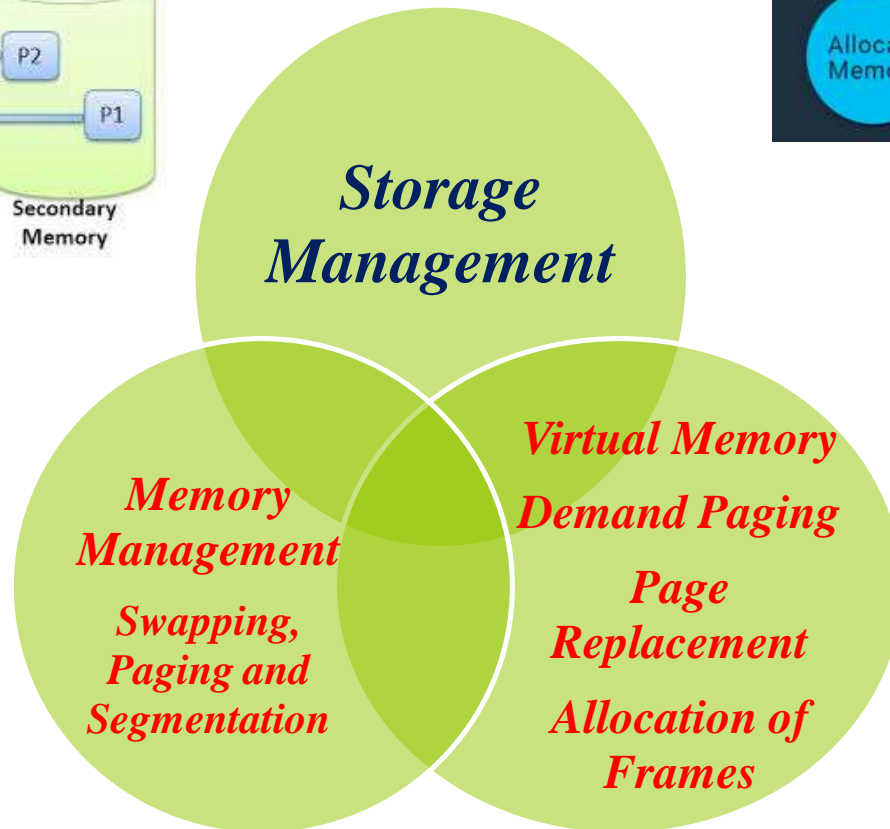
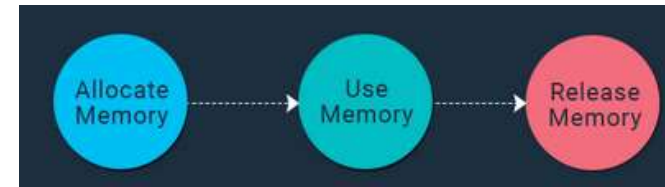
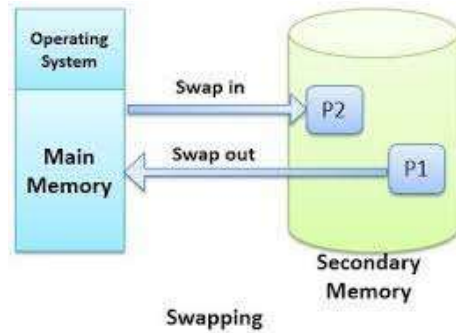


# Process Management

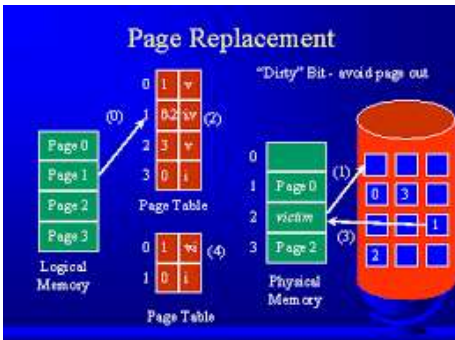




# Storage Management



<http://www.brakeetham.com/Resource/OOSDevID.html>





# *Introduction-Functions of OS*





# *Process Management*

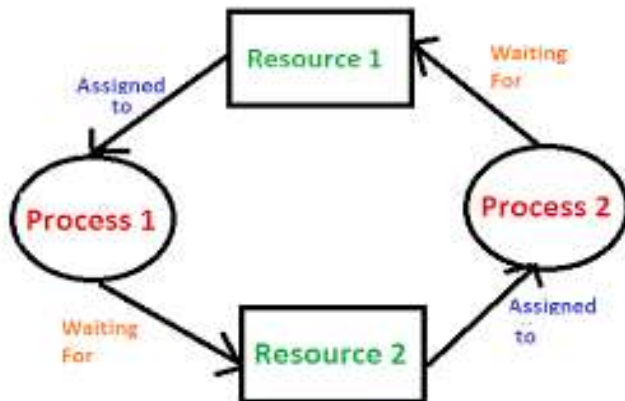
- A process is a program in execution. It is a unit of work within the system. Program is a *passive entity*, process is an *active entity*.
- Process needs resources to accomplish its task
  - CPU, memory, I/O, files
  - Initialization data
- Process termination requires reclaim of any reusable resources
- Single-threaded process has one **program counter** specifying location of next instruction to execute
  - Process executes instructions sequentially, one at a time, until completion
- Multi-threaded process has one program counter per thread
- Typically system has many processes, some user, some operating system running concurrently on one or more CPUs
  - Concurrency by multiplexing the CPUs among the processes / threads



# *Process Management Activities*

The operating system is responsible for the following activities in connection with process management:

- Creating and deleting both user and system processes
- Suspending and resuming processes
- Providing mechanisms for process synchronization
- Providing mechanisms for process communication
- Providing mechanisms for deadlock handling

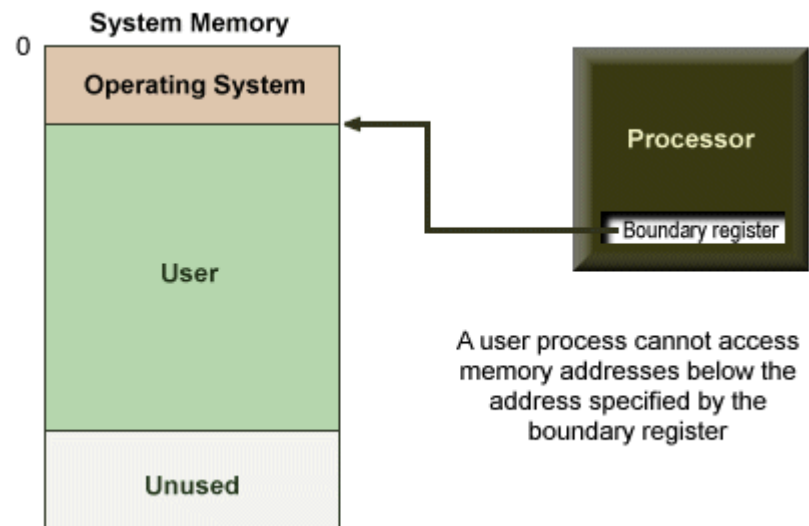






# Memory Management

- All data in memory before and after processing
- All instructions in memory in order to execute
- Memory management determines what is in memory when
  - Optimizing CPU utilization and computer response to users
- Memory management activities
  - Keeping track of which parts of memory are currently being used and by whom
  - Deciding which processes (or parts thereof) and data to move into and out of memory
  - Allocating and deallocating memory space as needed





# Summarization