

Lab Assignment # 01

Write programs/procedures for drawing gantt chart and for calculating turnaround time, individual waiting time for the processes, total waiting time and average waiting for the following scheduling algorithms.

First-Come-First-Served scheduling algorithm
Nonpreemptive Shortest Job First scheduling algorithm
Nonpreemptive Priority scheduling algorithm
Round Robin scheduling algorithm

Input

Process name, Arrival time of each processes, burst time, priority and time quantum.

Output

Gantt chart
Turnaround time
Individual waiting time
Total waiting time
Average waiting

Lab Assignment # 02

Implement paging memory management system for mapping logical memory address to physical memory address.

Input

Process size or Logical Memory size
Physical memory size
Paging unit size
Page table
A logical memory address

Output

Graphical or visual representation of logical address space
Page table
Graphical or visual representation of physical address space

Lab Assignment # 03

Implement segmentation memory management system for mapping logical memory address to physical memory address.

Input

No. of segment
Size of each segment
Physical memory size
Segment table
A logical memory address (segment number and offset)

Output

Graphical or visual representation of logical address space
Segment table
Graphical or visual representation of physical address space

Lab Assignment # 04

Implement page replacement algorithms.

Input

No. of pages
Page sequence
No. of page frames

Output

Graphical or visual representation of physical logical address for each replacement
No. of page faults

Lab Assignment # 05

Implement deadlock detection algorithm for single instance of each resource types.

Input

Processes
Resources
Process holding resource
Resource allocated to process

Output

Process –Resource graph(directed)
Whether there is deadlock or not in the system

Lab Assignment # 06

Implement deadlock detection algorithm for multiple instances of each resource types.

Input

Existing resource vector
Current allocation matrix
Need or request matrix

Output

For each step show the following
 Available resource vector
 Current allocation matrix
 Need or request matrix
If there is deadlock or not in the system