

## 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