WIA2004: OPERATING SYSTEMS

LABS

LAB 1 : MEMORY MANAGEMENT

Write a program to simulate the following contiguous memory allocation techniques:

a) Best-fit
b) First-fit

You program receives as input the amount of free memory available to run programs, the number of programs waiting to run and the size of each program. Display the allocation for each technique.

LAB 2 : PAGE REPLACEMENT ALGORITHMS

Write a program to simulate the page replacement algorithms:

a) FIFO
b) LRU

Your program receives as input the number of page frames available, the number of pages to execute and the order of execution. Your program displays how each algorithm handles the page replacement.

LAB 3 : CPU SCHEDULING ALGORITHM

Write a program to simulate the following scheduling algorithms and determine the turnaround time and waiting time:

a) SJF
b) Round Robin

Your program receives as input the number of jobs waiting in queue and the time required to execute each job. Display the outcome of each scheduling algorithm.

LAB 4 : DEADLOCK MANAGEMENT TECHNIQUE

Write a program to simulate the Banker's algorithm for the purpose of deadlock avoidance. Your program receives as input the number of processes in the systems and how many devices each job requires to complete execution. Your program shows how devices are allocated to each process as it executes and if the system is currently in a safe or unsafe state.

LAB 5 : DEADLOCK MANAGEMENT TECHNIQUE

Write a program to simulate disk scheduling algorithms

a) FCFS

LAB 6 : PROCESS SYNCHRONIZATION

Write a program to simulate the Dining Philosophers Problem.

LAB 7 : FILE ALLOCATION STRATEGIES

Write a program to simulate the following file allocation strategies:

a) Sequential

LAB 8 : FILE ORGANIZATION TECHNIQUES

Write a program to simulate the following file organization techniques:

a) Hierarchical