Tentative List of assignments LP-1 (SPOS)

SPOS1: Design suitable Data structures (any two) for Pass-I of two-pass assembler

SPOS2: Design suitable Data structures (any two) for Pass-II of a two-pass assembler

SPOS3: Design suitable data structures (any two) for Pass-I of a two-pass macro-processor.

SPOS4: Design suitable data structures (any two) and implement pass-II of a two-pass macro-processor.

SPOS: Write a program to remove comments from given assembly or C/C++ program file. Single and multiline comments

OS: Write a program to solve Classical Problems of Synchronization using Mutex and Semaphore.

OS: CPU Scheduling Algorithms: FCFS, SJF (Preemptive),

OS: CPU Scheduling Algorithms: FCFS, Priority (Non-Preemptive)

OS: CPU Scheduling Algorithms: Round Robin (Preemptive).

OS: Memory placement strategies –first fit, best fit

OS: Memory placement strategies – best fit, worst fit.

OS: Memory placement strategies – best fit, next fit.

OS: Write a program to implement Page replacement algorithm.

OS: Memory placement strategies –first fit, worst fit

OS: Memory placement strategies –best fit, worst fit

OS: Memory placement strategies –next fit, first fit

OS: Memory placement strategies –worst fit, next fit

OS.2. Write a program to simulate CPU Scheduling Algorithms: FCFS, SJF (Preemptive)

|  |  |  |
| --- | --- | --- |
| Process Id | Burst Time | Arrival Time |
| P1 | 4 | 0 |
| P2 | 7 | 2 |
| P3 | 2 | 3 |
| P4 | 2 | 3 |

OS.3. Write a program to simulate CPU Scheduling Algorithms: Priority (Non-Preemptive)

|  |  |  |
| --- | --- | --- |
| Process Id | Burst Time | Arrival Time |
| P1 | 10 | 3 |
| P2 | 1 | 1 |
| P3 | 2 | 4 |
| P4 | 1 | 5 |
| P5 | 5 | 2 |

OS.4. Write a program to simulate CPU Scheduling Algorithms: Round Robin (Preemptive). TQ = 2

|  |  |  |
| --- | --- | --- |
| Process Id | Burst Time | Arrival Time |
| P1 | 5 | 0 |
| P2 | 4 | 2 |
| P3 | 7 | 4 |
| P4 | 6 | 6 |

OS.5. Write a program to simulate Memory placement strategies – best fit, first fit

Given the memory partition of size 100K, 500K, 200K, 300K, 600K in order. How would each of the first fit and best fit algorithm place the process of 300K, 530K, 190K , 425 K .

OS.6. Write a program to simulate Memory placement strategies – next fit and worst fit.

Given the memory partition of size 100K, 500K, 200K, 300K, 600K in order. How would each of the worst fit and best fit algorithm place the process of 300K, 530K, 190K , 425 K .

OS. Write a C++/Java Program (using OOP features) to implement paging simulation using FIFO, Least Recently Used (LRU) Optimal algorithm

OS.7.Write a program to simulate Page replacement algorithm: LRU

Input : 5,0,2,3,0,1,3,4,5,4,2,0,3,4,3, Frame size = 3

OS.8. Write a program to simulate Page replacement algorithm: Optimal

Input : 5,0,2,3,0,1,3,4,5,4,2,0,3,4,3, Frame size = 3

*Inputs like burst time, arrival time, frame size, partition size etc. may change for OS assignments*