OPERATING SYSTEMS & COMPUTER NETWORKS LAB THROUGH LINUX

Experiment List

Part - A: Operating Systems

Week 1: Basic commands in Linux
(i)File handling utilities
a) cat b) mv c) rm d) cp
(ii) Directory commands
a)mkdir b) cd c) ls d) rmdir

Week2: Simulate the following CPU Scheduling Algorithms using C.
a) FCFS b) SJF

Week 3: Simulate the following CPU Scheduling Algorithms using C.
a) Priority b) Round Robin

Week 4: Simulate Paging Technique of Memory Management using C.

Week 5: Write a program to implement page replacement algorithms (FIFO, Optimal, and LRU).

Week 6: Write a C program to simulate the following file allocation strategies.
a) Sequential b) Indexed c) Linked

Week 7: Write a program to implement Banker's algorithm for deadlock avoidance.

Part - B: Computer Networks

Week 8: Design and Implement the data link layer framing methods such as character stuffing and bit stuffing.

Week 9: Implementation of Hamming code algorithm

Week 10: Implement CRC technique for any frame using generator polynomial.

Week 11: Implement Dijkstra's algorithm to compute the Shortest path through a graph.

Week 12: Take an example subnet graph with weights indicating delay between nodes. Construct Routing table art each node using Distance Vector Routing Algorithm.

Week 13: Analyze an example subnet of hosts. Construct and simulate broadcast tree for it.

References:

1. Abraham Silberschatz Peter B.Galvin and Greg Gagne, Operating System Concepts, Wiley 8th Edition, 2008.
2. Garry. J. Nutt, Operating Systems: A Modern Perspective, Addison-Wesley
3. Andrew S. Tanenbaum and Herbert Bros, Modern Operating Systems (4th Edition), Pearson
4. Russ Cox, Frans Kaashoek, Robert Morris , xv6: a simple, Unix-like teaching operating system",Revision
5. Sumitabha Das , UNIX Concepts and Applications, Tata McGraw-Hill
6. Data Communications and Networking - Behrouz A. Forouzan, Fifth Edition TMH, 2013.
7. Computer Networks - Andrew S Tanenbaum, 4th Edition, Pearson Education