Government Polytechnic for Girls, Surat

Department of Information Technology

Subject : Linux Operating Systems (4331602)

Assignment-1

1. Define Operating System and explain the need of OS.
2. List different types of operating systems.
3. Explain multiprogramming operating systems.
4. Explain batch operating system.
5. Explain time sharing operating system.
6. Explain real time operating systems.
7. Discuss the operating system services.
8. Explain : Linux directory structure.
9. Draw and explain the architecture of Linux.
10. List down various distributions of Linux.
11. Differentiate :
    i.   Windows and Linux operating system.
    ii.   Time sharing and batch operating system.

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Assignment-2

Q.1.Define Program. Differentiate between program and process.

Q.2.Define Process? Explain the different states of a process with the help of a state diagram.

Q.3.Write a short note on Process Control Block (PCB).

Q.4. Explain the Scheduling criteria in the operating system.

Q.5. Explain the FCFS algorithm. Find Average waiting time & Turnaround time, Efficiency as given data.

Process ID	AT(Arrival Time)	BT(Burst Time)
1	0	8
2	1	4
3	2	9
4	3	5

Q.6. Explain the Round Robin algorithm. Find the average waiting time and turnaround time as given data for time quantum (TQ) =4 ms. Assume Context Switch = 1 ms

Process ID	AT(Arrival Time)	BT(Burst Time)
1	0	10
2	1	6
3	3	2
4	5	4

Q.7. What is a race condition? Explain race conditions with a proper example of the process.

Q.8. Explain mutual exclusion.

Q.9. What is a deadlock? Explain the necessary conditions for a deadlock to occur.

Q.10.Define Monitors? Explain the characteristics of monitors.

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Assignment-3

1. Differentiate Absolute file path and Relative file path.

2. List out disk space allocation methods. Explain any one in detail.

3. Explain File Access methods.

4. Explain different attributes of a file.

5. Explain single level directory structure.

6. Explain two-level directory structure.

7. Explain file operations.

8. Explain file structures.

9. Write a short note on Linux File System Structure.

10. Explain various features of Linux File System.

11. Explain the different types of Linux file systems in brief.

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Assignment-4

1. Explain security goals and threats.

2. Write a short note on Program threats.

3. Explain various System Threats.

4. Differentiate: User Authentication v/s User Authorization.

5. Explain various authentication techniques.

6. Write a short note on Security measures in operating systems.

7. Explain operating system security policies and procedures.

8. Explain the protection domain with a suitable example.

9. Explain Access Control List in brief.

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Assignment-5

1. Explain the installation steps of Linux.

2. What is the shell? Explain the interpretive cycle of the shell.

3. Write a short note on Filtering and Pipes.

4. Explain various directory related commands in Linux.

5. Explain various file related commands in Linux.

6. Explain various general purpose commands in Linux.

7. Explain various process related commands in Linux.

8. Explain the working of vi and vim editors along with their basic commands.

9. What is a shell script? Explain in detail.

10. Explain the features of gedit.