Learning Guide Unit 5

Reading Assignment

As you go through the readings and watch the videos, consider the following:

1. How do different directory structures, impact the efficiency of data access and organization in file systems?
2. Compare the performance and efficiency of different disk scheduling algorithms, in managing secondary storage.
3. Explain how proficiency with the command line interface can enhance system management and troubleshooting.

Read:

1. Arpaci-Dusseau, R. H., & Arpaci-Dusseau, A. C. (2018). *Operating systems: three easy pieces (1.01 ed.)*. Arpaci-Dusseau Books. https://pages.cs.wisc.edu/~remzi/OSTEP/

    - View the online book.
    - Read Chapter 37: Hard Disk Drives (pp. 439 till pp. 452)

    This chapter delves into the intricacies of Hard Disk Drives (HDDs), exploring their fundamental components, architecture, and operational principles. It examines how HDDs utilize magnetic storage to retain data, detailing the roles of platters, read/write heads, and the actuator mechanism. The chapter also highlights the advantages and limitations of HDDs in comparison to newer storage technologies, such as Solid State Drives (SSDs), particularly in terms of capacity, speed, and durability. By understanding the functionality and significance of HDDs in modern computing, readers gain insight into their essential role in data storage solutions.

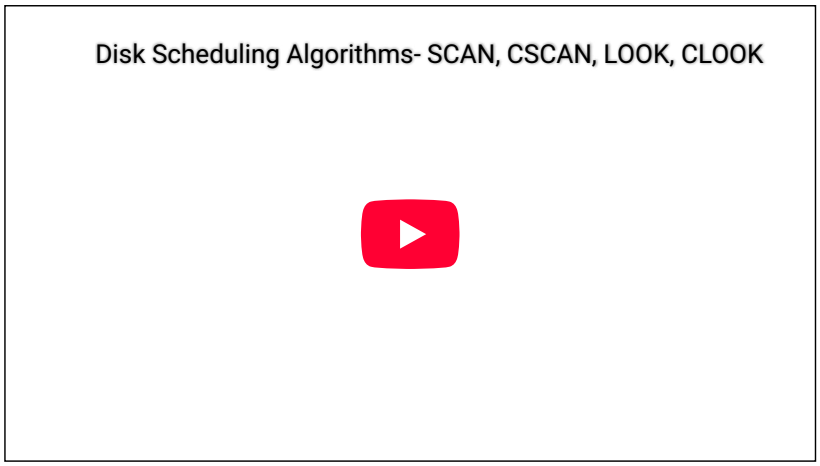
Watch:

1. Ekeeda. (2023, September 7). *Directory and Disk Structure and Storage* Structure [Video].

- This video covers the fundamentals of Directory and Disk Structures in Operating Systems. It explains how directories are organized to manage files efficiently and explores various disk structures used to store and access data on secondary storage.

2. Ramjith R P. (2020, March 27). *Disk scheduling algorithms- SCAN, CSCAN, LOOK, CLOOK* [Video].

- This video provides an overview of Disk Scheduling Algorithms, focusing on SCAN, CSCAN, LOOK, and CLOOK methods. It explains how each algorithm works to optimize the order of disk requests, reducing seek time and improving overall system performance.



3. Neso Academy. (2018, March 12). *User Operating System Interface* [Video].

- This video introduces the basics of the Command Line Interface (CLI) for beginners, explaining key concepts and essential commands used to navigate and interact with a computer's file system.