Republic of the Philippines
City of Olongapo
GORDON COLLEGE
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Learning Task

Practice Exercises 1

1. What is the purpose of system calls?

System calls serve as an interface between user-level programs and the kernel. They allow user-level processes to request services and functionality that can only be provided by the operating system, hardware, etc.

2. What are the five major activities of an operating system with regards to process management?

1. Process Creation
2. Process Scheduling
3. Process Termination
4. Process Suspension and Resumption
5. IPC or Interprocess Communication

3. What are three major activities of an operating system with regard to memory management?

1. Memory Allocation
2. Memory Protection
3. Memory Deallocation

4. What are the thre emajor activities of an operating system with regard to secondary-storage management?

1. File Management:
2. Storage Allocation:
3. I/O Device Control:

5. What is the purpose of the command interpreter? Why is it usally separate from the kernel?

A command interpreter serves as an interface between the user and the operating system. Its primary purpose is to interpret and execute user commands or scripts, manage processes, and facilitate communication with the kernel.

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Exercise 2

1. The services and functions provided by an operating system can be divided into two main categories. Briefly describe the two categories, and discuss how they differ.

The two services provided by an operating system is the Kernel Services and the User Services. Kernel is essential for managing hardware services resources and ensuring the basic operation of the computer system. The User Services perform higher-level tasks and interact with the hardware indirectly through the kernel.

2. Describe three general methods for passing parameters to the operating system.

Registers, which are small, fast storage locations within the CPU that can be quickly accessed by the processor; Stack, a region of memory used for temporary storage and bookkeeping during program execution; and memory, where parameters are passed to the operating system by providing a pointer or reference to a block of memory where the parameters are stored.

3. Describe how you could obtain a statistical profile of the amount of time spent by a program executing different sections of its code. Discuss the importance of obtaining such a statistical profile.

By utilizing periodic timer interrupts to see what sections of code are currently executing whenever an interruption occurs, you could optimize those sections of code that are consuming more of the CPU resources.

4. What are the five major activities of an operating system with regards to file management?

1. File Creation & Deletion
2. File Reading & Writing
3. File Security
4. File Metadata Management
5. File Caching

5. Describe how you could obtain a statistical profile of the amount of time spent by a program executing different sections of its code. Discuss the importance of obtaining such a statistical profile.

As I said on my previous answer on question 3, by utilizing periodic timer interrupts to see what sections of code are currently executing whenever an interruption occurs, you could optimize those sections of code that are consuming more of the CPU resources.