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IT-365

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Module 2 ‘Run The Code’ Questions

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*Challenge Question One: 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 first category that services and functions provided by an operating system can be divided into would be the protections category. These services and functions ensure that processes are allowed access to their own memory locations and not other processes’ memory spaces (Silberschatz et al, 2009). This also blocks file corruption and device access that is not granted. The other category of services and functions are those who provide external functionality to the operating system. This means they are software or programs that add to the kernel functionality allowing for extended usage of the hardware. File systems are a good example of this type of service.

*Challenge Question Two: What are the five major activities of an operating system with regard to file management?*

According to the 8th edition of Operating System Concepts with Java, the five activities are:

1. The creation and deletion of files
2. The creation and deletion of directories
3. The support of primitives for manipulating files or directories
4. The mapping of files onto secondary storage
5. The backup of files on stable or nonvolatile storage media

*Challenge Question Three: What is the main advantage for an operating-system designer of using a virtual-machine architecture? What is the main advantage for a user?*

Using a virtual machine (VM) on a different operating system provides many advantages to a designer. The VM can be launched many times and run many different operating systems at once. The system is very easy to debug and security problems are scarce due to partitioning of the VM. These VM’s can offer a great platform to perform operating system research and comparison because of its capabilities to host multiple operating systems simultaneously, as well. This is the main advantage for a user who is thinking about operating a virtual machine on their operating system.

Reference:

Silberschatz, A., Galvin, P. B., & Gagne, G. (2009). *Operating System Concepts with Java* (8th ed.). John Wiley & Sons.