Assignment 6-1: Memory and Storage Management

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**Memory and Storage Management**

**READ PT 3&4 memory and storage management respectively**

**Memory Management:**

When creating the Gaming Room application we have to take into consideration both the storage of the 200 image files and how we go about accessing the images when the game is being played. Since the 200 images are going to be the same group of images used for each playthrough of the game we can have it be stored in the disk permanently. However, we will not be rendering and opening all 200 image files at once so we will need to use the computer’s memory to access specific image files. One thing to consider would be whether we want to use segmented memory, paged memory, or maybe a hybrid of both. With segmented memory either the whole process is in memory at once or none. This allows for faster access to the code but it can lead to segmentation and wasted memory. However, with paged memory, only the parts of various processes that are currently in use are stored in memory. This allows for more efficient use of free space but at the cost of speed as it runs slower than segmented memory. It is also important to consider whether or not the user’s operating system (OS) supports the memory management system. Paged memory is more common and more widely supported than segmented memory.

**Storage Management:**

When we consider the different storage management systems it would be best to have the 200 image files permanently stored either in the cloud or the user’s storage device. This is so that the user does not have to render or download the 200 images each time they need to access an image. Having the 200 images pre-downloaded allows for easier and faster access when users are playing the game. As an application, you can have the images be a part of the application files that the user needs to download before playing the game. Another thing to consider would be the type of storage to use if the application is made for a web browser because then it isn’t possible to have the data stored in the user’s local drive. The data would have to be either stored in cloud servers or the Gaming Room would have to host its own servers to accommodate the browser applications. Another consideration would be the cost of hosting or renting cloud servers for storage.

**Comparison:**

Memory and storage are similar in that they both store and handle data, however, how they handle that data is wildly different. Memory handles data that needs to be accessed and run in the short term while storage deals with data that needs to be stored permanently. When considering memory and storage management you generally want to have a larger storage capacity than memory capacity. Memory only handles the data and processes currently running on the computer at any given time, and you will store a lot more files on your computer than you will use at any given time. In terms of game applications and functionality, the memory management system needs to handle the current actions that the players are inputting and accessing. The storage will need to store all the files necessary to run the game and accommodate different actions the player might take.