# **6-1 Assignment: Memory and Storage Management**

**Memory Management:**

To ensure that memory is effectively managed in the Draw It or Lose It application, several considerations and specific approaches need to be taken. Firstly, it is important to optimize the size of the image files to reduce memory usage. One way to achieve this is by compressing the images using lossless compression techniques. This will reduce the size of the image files without degrading the image quality. Additionally, the application should load images only when they are needed to conserve memory.

Furthermore, the application should use efficient algorithms for rendering and displaying images to ensure that the game runs rapidly and effectively on all operating platforms. This can be achieved by using hardware acceleration techniques, such as GPU acceleration, to offload some of the processing to the graphics hardware. Another approach is to pre-load some of the images into memory during the loading screen to reduce loading times during gameplay.

**Storage Management:**

The Draw It or Lose It application requires a large library of image files to function. To determine how much storage is needed and how to manage storage, several considerations and approaches need to be taken. Firstly, the storage capacity of the target platforms should be assessed to ensure that it can accommodate the library of image files. This includes taking into account the size of the application itself and any other files that need to be stored on the device.

Secondly, the application should only download and store the image files that are required for the current game session to conserve storage space. One way to achieve this is by implementing a caching mechanism that stores frequently used images in memory, reducing the need to download them repeatedly.

**Comparison:**

Memory management and storage management are both crucial for the Draw It or Lose It application to function optimally. Memory management refers to how resources are utilized for rendering and displaying images, while storage management refers to how files and permanent discs are stored.

Memory management is concerned with optimizing the use of available memory to ensure that the game runs rapidly and effectively on all operating platforms. This includes techniques such as compressing image files and using efficient rendering algorithms. Storage management, on the other hand, is concerned with optimizing storage usage to ensure that the game can store the required image files without exceeding the available storage capacity. This includes techniques such as caching frequently used image files and only downloading the required image files for the current game session.

In summary, memory management and storage management are both critical components of the Draw It or Lose It application. By optimizing the use of memory and storage resources, the application can run efficiently on all operating platforms and provide a seamless user experience.

**Resources:**

**Hennessy, J. L., & Patterson, D. A. (2017). Computer Architecture: A Quantitative**  **Approach. Morgan Kaufmann Publishers.**

**Silberschatz, A., Galvin, P. B., & Gagne, G. (2018). Operating System Concepts. John**  **Wiley & Sons.**

**Tanenbaum, A. S., & Bos, H. (2014). Modern Operating Systems. Pearson Education.**