**Module 6 Assignment**

Draw it or lose it consists of 200 images that are 8-mb in size. The gameplay is based around four rounds lasting one minute. The images are rendered at a steady rate and are completed at the 30-second mark. The game is dependent on a steady framerate; therefore memory must be maintained effectively for the game to be a success.

* **What considerations and specific approaches would it take to ensure that memory is effectively managed in the software application, Draw It or Lose It?**

The game being successful depends on it maintaining an effective framerate. The most effective way to do this is to pull the images from the RAM memory. Having the whole image located on the RAM should keep the program from lagging and prevent poor performance. The images could be kept on the disk until drawn.

* **What considerations and specific approaches would you take to determine how much storage is needed and how to manage storage for your client’s application, Draw It or Lose It?**

First you must determine how much storage is required, Such as the Image Library Size. Calculate the total size of the image library, if there are 200 high-definition images, each approximately 8 MB, the total storage required for images alone would be 1.6 GB. Then determine Additional Assets. Consider other game assets such as audio files, UI elements, and user data. Estimate their cumulative size to get a comprehensive storage requirement.

Then you need to find effective ways to save your available space. There are ways to achieve this such as, File Compression, Caching and Preloading, and Memory Optimization. File Compression is a technique to reduce the size of image and audio files. This can significantly optimize storage utilization while maintaining the ability to access and decompress files when needed. Caching and Preloading is frequently used for images and preloading them before they are required. This minimizes loading times and latency during gameplay. Memory Optimization techniques like memory pooling and lazy loading can optimize memory utilization and prevent memory leaks

* **What are the differences in how memory and storage are used in terms of the game application functionality?**

Memory and storage have two distinct roles in game applications. RAM(Random Access Memory) should be sized for performance needs and storage for the images and applications. RAM needs to be optimized so that there is a consistent frame rate. This includes making sure that there is enough main memory available to meet the performance needs. Storage for the application on the server would be used to hold the images and code. Storage on the client would only need to be considered if there was some sort of cache created to pre-load images.