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

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### CS-230-11604: Operating Platforms

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The Gaming Room’s “Draw It or Lose It” will have a very extensive library of drawing images that will slowly render and cycle through for the teams to guess. The user experience will be dependent on the memory allocated during this rendering process. We want the users to have the best experience so we need to consider, and come up with a viable solutions for, storage and memory management, on all of the operating platforms. Since the library of drawings will be stored on the server, I believe our plan of attack involves giving our servers the best type of storage and memory possible without breaking the proverbial bank.

**Considerations and specific approaches to ensure that memory and storage are effectively managed in the software application, Draw It or Lose It, are relatively easy to understand. We’ll definitely want to utilize a solid-state drive (SSD) for hosting on a cloud server. SSDs have fast** data writing speed and are more reliable in case of power outages. They’re also infinitely faster than HDDs, energy efficient and have longer data retention time (Moris, 2022). The size we should look at for our SSD is 1TB. I don’t think we’ll need more than this for our storage capabilities. Network attached storage, or NAS, is also something to consider but I think with our current plan, it won’t be necessary at this time.

When talking about memory or RAM, we want to utilize a good amount since our game has a lot of operations that require high amounts of RAM to execute properly. *“The main challenge will be to keep memory consumption to a minimum while not compromising playability or quality* (Juan Pérez, A. (2016).*”* The last thing we need is a complaint about poor performance or lagging. In technical terms, RAM is the short-term storage of information and is directly linked to the speed at which information is accessed. To quickly render without lagging, I suggest 128 GB of DDR4+ RAM due to its size and generous overclocking headroom. I believe with this expenditure, which is needed at this time; the game won’t require more in the future. In the end, low memory means slower gaming speeds. If we go this route then we circumvent that issue.

The player interacts with our game through a session, stored in short-term memory, and that session’s outcomes are saved and recorded onto the server, long-term. Memory or RAM is where temporary data is stored and storage is where you save files permanently. Saving a game, or data, is writing from memory to a location on a disk. So, let’s look at this in terms of our game, Draw It or Lose It. We have the username and password used for a player to log in and that is all placed in the database for each user – long-term storage. Playing the game requires short-term memory or RAM to render our images per each unique session. We aren’t saving when we show the drawing images. We are only saving our players’ chances of guessing first to earn a win or loss in the game.

In conclusion, I have outlined a good plan for us at Creative Technology Solution to be able to offer The Gaming Room a quality product without losing what’s important about the product in the first place.

Sources

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