Module 6 Assignment

From the perspective of a software developer, there are numerous points that have to be addressed to ensure an environment with integrity is provided to the end user so that the user can have the best experience. Given that there are 200 high-definition image files in the software with each file occupies around 8MB of storage, a simple calculation of the memory (RAM) they are occupying could be carried out. On average, a 6-megapixel (6-MP) image yields a JPEG photo of around 2MB. Therefore, for each 8MB photo, the image could be estimated to have about 25 MP. A project with 1000 images at 40 MP each requires 32GB of RAM, so if the software has 200 images at 25MP each, then the total RAM required will be around 3 to 4 GB. Therefore, the most important consideration is to make sure that the user’s device, whether a computer or a mobile device, have enough RAM to process the software application. One approach that could be made is to introduce the use of cache to prevent RAM from being used all the time. Another approach is to provide options for the users to download the images locally before launching any games so that less RAM will be required during the actual game.

With the given information, the detailed storage requirement for the application could also be calculated. Each image file takes 8MB of storage, and there are a total of 200 images. The entirety of the image files will take up around 1GB of storage if all images are kept as high definition. On the top of the images, there are also system files and other files related to the software (sound files, local logs, etc.) that takes up more storage. One example would be a simple mahjong game on iOS having 200MB of downloadable data files that include high-definition images and sounds takes about 800MB of storage after downloading the files. If same analogy is to be used, then Draw It or Lost It with 1GB of downloadable data files should occupy about 4 to 5 GB of storage. Therefore, having enough storage on the user’s device is also an important consideration. Similar with memory, storage can also be managed by offering users to choose what to download: regular-definition images, high-definition images, compressed files for soundtracks, or source-grade soundtracks. In such way, users can have the freedom of picking what to download that best fits the condition of their device. When introducing usable prizes and items in the game, a time limit could also be added so that the users can manage the best time of using the items. Such action also ensures avoidance of redundant ancient files from accumulating in the server.

Memory is used to store data temporarily, while storage is used to store data permanently. The main difference between memory and storage in terms of game application functionality is that memory takes care of impromptu gaming experience while storage takes care of long-term gaming experience. If a device has a high RAM, then the game will have a very smooth flow throughout without lagging or high ping. On the other hand, if a device has a high storage, then the user can have enough room downloading the optimal image and soundtrack files and the long-term experience will be amazing.

**References:**

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