## Assignment (1.8 Disk, Memory and other Storage)

### Brief

This assignment will be a research assignment.

Choose one topic and discuss with your group the following:

1. Give the advantages and disadvantages of magnetic storage devices
2. What is SSD? And why is it faster than HDD?
3. Discuss the advantages and disadvantages of using optical media
4. Discuss why hard drive spaces are lesser than advertised (Ex. 2TB is 1.81TB in Windows)

### Submission

* Submit the URL of the GitHub Repository that contains your work to NTU black board.

**2.What is SSD? And why is it faster than HDD?**

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|  | **What is SSD** |
| 1 | Short for solid-state drive (and sometimes solid-state disk), an SSD is a computer data storage option that functions without any moving parts, compared to traditional HDD |
| 2 | An SSD stores data using flash memory to encode information rather than doing so through a physical writing process, which is one of the reasons SSDs consume less overall power. |
| 3 | An SSD works through a simple input/output interface, typically via what are called the Serial ATA or with the higher efficiency of PCI Express and NVMe connections. |
|  | **why is it faster than HDD** |
| 1 | SSDs outpace HDDs because they use electrical circuitry and have no physical moving parts. This leads to shorter wait times when you’re starting up and fewer delays when opening apps or doing heavy computing tasks. |
| 2 | Speed is also influenced by the interface used in an SSD vs. HDD that connects to the rest of the computer system when transferring data back and forth. In comparing these interfaces—SATA and PCI Express (PCIe), SSDs with PCIe interfaces will typically be much faster than HDDs with SATA because PCIe contains more channels to transfer data. |
| 3 | Use Case for SSD - Computer storage decisions can be simplified by thinking of data as either cold or hot. if you’re a business running real-time transactions, editing videos and photos and need fast access to a database of files, video clips, or models, or even just running the operating system, that’s referred to as “hot” data. The fast performance of SSDs makes them an ideal choice for when speedy access to your data is what matters most. |