**THIRD ASSIGNMENT   
LECTURE : COMPUTER ORGANIZATION AND ARCHITECTURE**

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| OLEH :   |  |  | | --- | --- | | **MUHAMMAD DIENULLOH ULIL A.** | **L200164018** |   FAKULTAS KOMUNIKASI DAN INFORMATIKA  UNIVERSITAS MUHAMMADIYAH SURAKARTA  2018 |

**Theme : Summary table to show the performance comparison between HARDDISK & SSD**

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| **No** | **Aspect** | **Hard Disk Drive (HDD)** | **Solid State Drive (SSD)** |
| 1. | Definition | Stands for "Hard Disk Drive." is a type of mass storage device Internal or external. An HDDs connect to a computer using standard IDE or SATA connections.  HDD used moving parts called magnetic platters to save each data. The data is stored on a stack of disks that are mounted inside a solid encasement. These disks spin extremely fast (typically at either 5400 or 7200 RPM) so that data can be accessed immediately from anywhere on the drive.  The data is stored on the hard drive magnetically, so it stays on the drive even after the power supply is turned off. | Stands for "Solid State Drive." An SSD is a type of mass storage device similar to a hard disk drive (HDD). It supports reading and writing data and maintains stored data in a permanent state even without power. Internal SSDs connect to a computer like a hard drive, using standard IDE or SATA connections.  Unlike hard drives, SSDs do not have any moving parts (which is why they are called solid state drives). Instead of storing data on magnetic platters, SSDs store data using flash memory (*NAND gate*). Since SSDs have no moving parts, they don't have to "spin up" while in a sleep state and they don't need to move a drive head to different parts of the drive to access data. |
| 2. | Capacity |  |  |
| a. Minimum Capacity | **80 Gigabyte**  (the early generation HDD still has the minimum capacity) | **32 Gigabyte**  (you can find it on aliexpress on some cheap SSD) |
| b. Maximum Capacity | **14 Terabyte**  (the maximum capacity of a single piece HDD that claimed by Seagate. Usually used for corporation) | **4 Terabyte**  (this kind of highest capacity is made by Samsung brand) |
| 3. | Speed | The range can be anywhere from 50 – 120MB / s | Generally above 200 MB/s and up to 550 MB/s for cutting edge drives |
| 4. | Price | For the maximum variant the price is around **$600** | For the maximum variant the price is around $1000 |
| 5. | Advantages | a. Cheaper price  b. Higher Storage capacity than SSD  c. The is available in every shop and easy to buy  d. Long lifespan than SSD | a. Faster than HDD  b. Low power consumption  c. Durable than HDD  d. Doesn’t produce noise when operate |
| 6. | Disadvantages | a. HDD is slower than SSD  b. Higher power consumption  c. Produce noise while operating  d. Not durable compared to SSD | a. Expensive  b. Limited Storage capacity variant  c. Shorter lifespan than HDD |
| 7. | Picture | https://images-na.ssl-images-amazon.com/images/I/81CWoWS-l6L._SL1500_.jpg | 5-Samsung-SSD hard disk internal external hard drive harddisk 2.5 3.5 m2 msata sata NVMe PCIe USB  120GB 240GB 480GB 500GB 1TB 2TB 4TB hdd for computer Desktop tablet kingdian |