**Data Disk Notes**

**1. Definition**

A **Data Disk** is an **extra storage disk** that you attach to a Virtual Machine (VM) in the cloud (Azure/AWS).

* It is **separate from the OS Disk**.
* Used to **store application data, databases, files, or logs**.

Think of it like adding an **external hard drive** to your laptop.

### 2. ****Types of Disks (Azure/AWS)****

* **OS Disk** → Contains the operating system (Windows/Linux).
* **Temporary Disk** → Provides short-term storage; data is lost after VM restart.
* **Data Disk** → Extra disk attached by user for apps and data.

### 3. ****Characteristics of Data Disks****

* Persist even if VM is restarted.
* Can be detached and re-attached to another VM.
* Can have different performance types:
  + HDD (cheap, slower).
  + SSD (faster, good for databases/apps).
* Each disk has a maximum size (e.g., 32 TB in Azure).

### 4. ****When to Use Data Disks?****

* To store large files (images, videos, logs).
* To install applications separately from OS.
* For databases (SQL, MySQL, MongoDB).
* For backup and recovery.

### 5. ****Benefits of Data Disks****

* Separation of OS and data (safe if OS crashes).
* Scalability (add/remove disks as needed).
* Portability (can move disk between VMs).
* High performance with SSD.

**In simple words:**  
A **Data Disk is like an extra hard drive** that you attach to your cloud VM for storing data, apps, or databases

