

Session 1

Database Systems: What is RDBMS vs NORDBMS?

Feature	RDBMS	NoRDBMS (NoSQL DBMS)
Data Structure	Tables with rows and columns	Documents, key-value pairs, etc.
Schema	Fixed schema (structure of data is defined and strict)	Dynamic schema (structure can change, more flexible)
Use Cases	Structured data with complex relationships and transactions	Large volumes of data with simple relationships, scalability
Examples	MySQL, Oracle, SQL Server	MongoDB, Cassandra, DynamoDB

Cloud Environments: What are types of cloud available?

1. Private Cloud

It's a cloud (Delivering IT services over the internet) that is used by single organization.

2. Public Cloud

Provide resources and services to multiple organizations and users. Ex. Azure

3. Hybrid Cloud

Combines public and private clouds to allow applications to run in the most appropriate locations.

Cloud Service Models: IAAS vs PAAS vs SAAS ?

All three work on shared responsibility models.

IAAS(Infrastructure as a Service): It's the basic building blocks of computing - servers, storage, and networks - from a provider over the internet. We manage the software, but don't worry about the physical hardware.

PAAS(Platform as a Service): PaaS helps in getting a toolkit for developing and hosting apps online. It provides not just the hardware, but also software and tools needed to create applications, making it easier for developers.

SAAS(Software as a Service): It is like subscribing to use an application over the internet. We don't have to install anything; just access and use the software through the web, often paying a monthly fee.

Example - Office 365

Conventional Data Management Services: What are Traditional Data engineering services available in the market ?

- Oracle: Known for database solutions, data warehousing, and cloud services.
- Microsoft SQL Server: Provides relational database management system (RDBMS) services.
- SAP: Delivers data processing, analytics, and business intelligence solutions.
- Informatica: Specializes in ETL tools and data integration services.
- Teradata: Offers data warehousing and big data analytics solutions.