Cloud - Computing

- Cloud computing is the delivery of computing services—including servers, storage, databases, networking, software, analytics, and intelligence—over the internet ("the cloud") to offer faster innovation, flexible resources, and economies of scale. You typically pay only for cloud services you use, helping you lower your operating costs, run your infrastructure more efficiently, and scale as your business needs change.

Example:

Google Drive:

- Instead of storing documents on your computer, you can store them in the cloud (Google Drive) and access them from any device with internet access.

Software as a Service (SaaS) platforms like Salesforce:

- You access these platforms through a web browser or mobile app, rather than installing them on your computer.

Streaming services:

- You watch movies or listen to music by accessing the media files stored remotely on a cloud provider's servers.

Types Of Cloud-Computing

- Cloud computing types are broadly categorized by their deployment models (public, private, hybrid, community, multi-cloud) and service models (IaaS, PaaS, SaaS, serverless). The service models describe the level of resources provided, while the deployment models describe how the cloud infrastructure is owned and accessed.

Public Cloud:

- Accessed through the internet, services are shared among many users and are usually provided by a third-party vendor.

Private Cloud:

- Owned and managed by a single organization for its exclusive use.

Hybrid Cloud:

- Combines aspects of both public and private clouds, allowing resources to be shared between them.

Community Cloud:

- Shared by several organizations with common interests, but not publicly available.

Multi-Cloud:

- Utilizes resources from multiple cloud providers, offering flexibility and redundancy.

Cloud Service Models:

Infrastructure as a Service (IaaS):

- Provides virtualized infrastructure, including servers, storage, and networking.

Platform as a Service (PaaS):

- Offers a platform for developing, running, and managing applications, including tools and frameworks.

Software as a Service (SaaS):

- Delivers ready-to-use applications over the internet, such as email or CRM software.

Serverless Computing:

- A type of PaaS where you can deploy code without managing servers.

Function as a Service (FaaS):

- A serverless computing model where users upload code that runs on the cloud in response to events.