Module -1 Introduction To Cloud Computing

1. What is cloud computing?

Ans: Cloud computing is using the internet to store, manage, and process data instead of keeping everything on your own computer.

Think of it like using electricity — we don't need to own a power plant; we just plug in and use it. Similarly, with cloud computing, we use powerful computers (called "servers") run by companies like Amazon, Google, or Microsoft to do things like store files, run apps, or back up data, all online.

2. Describe cloud computing deploy model.

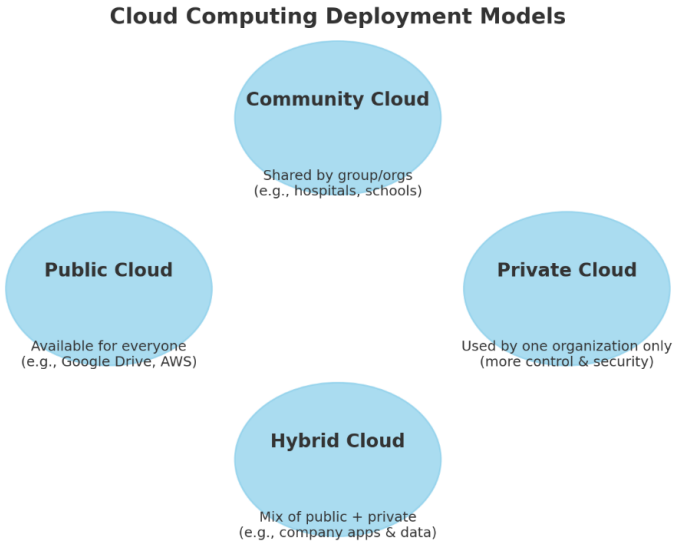
Ans: Cloud computing deployment models are like different ways we can set up and use the cloud, depending on what we need.

 Public Cloud – Services are available for everyone on the internet. Example: Google Drive, AWS.

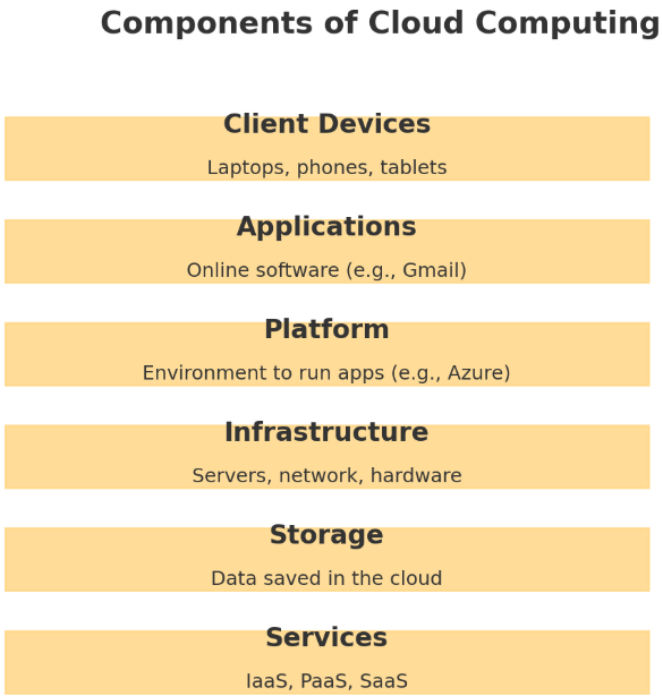
 Private Cloud – Used by only one organization for more control and security. Example: A company's own cloud.

 Hybrid Cloud – A mix of public + private cloud, used together. Example: A company stores sensitive data in private cloud but uses public cloud for apps.

 Community Cloud – Shared by a group of organizations with similar needs. Example: Hospitals sharing a cloud for medical data.



3. **What are components of cloud computing?**
Ans: Cloud computing has several key components that make it work.



1. **Client Devices**: These are the devices people use to access the cloud, like laptops, smartphones, or tablets.

2. **Internet**: The connection that lets users access cloud services from anywhere.

3. **Cloud Services**: These are the tools and features provided by cloud companies. They come in three main types:

    - **IaaS (Infrastructure as a Service)**: Gives us virtual computers, storage, and networks (like renting hardware).

    - **PaaS (Platform as a Service)**: Gives us tools to build and run apps without managing the hardware.

    - **SaaS (Software as a Service)**: Lets we use software (like Gmail or Zoom) without installing it on our device.

4. **Cloud Providers**: Companies that run the cloud, such as Amazon Web Services (AWS), Microsoft Azure, and Google Cloud.

5. **Data Storage**: A place in the cloud where all our data, files, and backups are kept securely.

6. **Servers**: Powerful computers that do the work behind the scenes—running applications, processing data, and storing files.

7. **Security**: Measures to keep our data safe, like encryption, firewalls, and access controls.

8. **APIs (Application Programming Interfaces)**: These let different apps and services talk to each other in the cloud.

4. Cloud computing advantage and disadvantage Advantages of Cloud Computing

Advantages of Cloud Computing:

1. **Saves Money**
   We don't need to buy expensive computers or servers. We only pay for what we use.

2. **Access from Anywhere**
   We can use our data and apps from any device with the internet.

3. **Scalable**
   we can easily get more storage or power if we need it — no need to buy new hardware.

4. **Automatic Updates**
   The cloud provider takes care of software and security updates.

5. **Backup and Recovery**
   Our data is backed up, so if our device crashes, our data is still safe in the cloud.

6. **Team Collaboration**
   Many people can work on the same document or project at the same time from different locations.

Disadvantages of Cloud Computing:

1. **Needs Internet**
   If we don’t have a good internet connection, it may not work well or at all.

2. **Less Control**
   Since the servers belong to someone else, we have less control over the system.

3. **Security Risks**
   Although it's usually safe, storing data online can still be a target for hackers.

4. **Ongoing Costs**
   We keep paying for the service. Over time, this might cost more than owning our own setup.

5. **Limited Customization**
   Some cloud services may not let us change everything the way we want.