Cloud computing:

Cloud computing is the on-demand delivery of computing services over the internet. This includes things like storage, servers, databases, networking, software, and even analytics. Essentially, you rent computing power from a cloud provider instead of buying and maintaining your own physical hardware.

Cloud service Models:

Infrastructure as a Service (IaaS): Rent the basic building blocks like servers, storage, and networking.

Platform as a Service (PaaS): Rent a platform to develop, deploy, and manage your applications.

Software as a Service (SaaS): Access software applications over the internet, like webmail or productivity suites.

Cloud Deployment Models:

Public Cloud: Resources are shared among multiple users over the internet. (e.g., Amazon Web Services, Microsoft Azure)

Private Cloud: Resources are dedicated to a single organization for increased security and control.

Hybrid Cloud: Combines public and private clouds for flexibility and control.

Benefits of cloud:

Cost-effective: Reduced upfront costs and pay-as-you-go model.

Scalability and Agility: Easily adapt resources to changing needs.

Increased uptime and reliability: Cloud providers manage infrastructure for redundancy and disaster recovery.

Improved collaboration: Access applications and data from anywhere with an internet

connection.

Challenges in cloud:

Security: Data security and privacy concerns when storing data in the cloud.

Vendor lock-in: Reliance on a specific cloud provider can make it difficult to switch.

Latency: Network latency can impact performance for applications requiring real-time responsiveness.