Module 1 (Week 1)

**Overview of Cloud Computing**

* Cloud computing is a model for enabling convenient and on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned with minimal service provider interaction.
* **In short, cloud computing provides us easy & quick access to computing resources on the cloud/internet.**
* **5 Essential characteristics of CC:**
  + On-demand self service
  + Broad Network Access (Phones, tablets, laptop, desktops all can access)
  + Resource pooling (Computing resources are pooled & shared across multiple platforms)
  + Rapid Elasticity (Access more resources if you need them, Or scale down on resources if you don’t need them)
  + Measured Service (Pay as you go model)
* **3 Deployment models:** 
  + Public (use cloud infrastructure by a service provider which is then shared by many companies),
  + Private (use cloud infrastructure by a service provider meant only for that company.
  + Hybrid (in between).
* **3 Service models:**
  + Application (SaaS) -> Cloud provider provides you the software you need
  + Platform (Paas) -> Cloud provider provides you a platform of tools to use
  + Infrastructure (IaaS) -> Cloud provider provides you the infrastructure or physical computing resources such as servers, networks, data centers, storage for you to use.
* **Benefits of CC:**
  + Reduce the need to set up your company’s own physical infrastructure (network, data centers, storage centers, servers etc), which can be costly
  + Broad Network Access -> many types of electronic devices e.g. from phones to desktops can readily access such cloud services nowdays
  + Data security.
* **Challenges of CC:**
  + Data security…
  + Who owns the data?
  + Choosing the right deployment model and service model
* **Major CC providers:** **AWS, Azure (Microsoft), Google (GCP), IBM Cloud etc**
* Organizations must consider their business needs, investment viability, and risk capacity in order to create a cloud adoption strategy that delivers desired benefits without causing business disruptions and security, compliance, or performance issues.
* **IoT devices/Block-chain**, **Cloud Computing** (top) and **AI are all connected** (in a triangle) to make the world a better place - **three-way symbiotic relationship**