**What is Cloud Computing?**

* It is a type of computing that relies on shared computing resources, rather than having local personal devices or server to maintain build and deploy the Business Applications.

**Business Application:**

Any application which is hosted on internet;

Available, accessible and reachable to each and everyone

Fulfilling the need of an end user and also generating the revenue for the company.

Examples: Netflix.com; flipcart.com; Zomato.com; swiggy.com

* Now these all applications previously mean 10 years or 20 years back we were developing in a private cloud and now from 4-5(2017) we started developing, building, managing, deploying these business applications in public cloud.
* Now, Microsoft azure, AWS, GCP, Oracle, IBM. etc... all are developing their cloud systems called as public clouds

**Why cloud computing come into existence?**

Suppose a company got project and its scope is of 15 years (5 years development and 10 years of support). So, company has to go under CAPEX and OPEX to establish all things.

**CAPEX** 🡪 Capital Expenditure 🡪 these were the things on which the organization were investing to establish their data centres/ infrastructure for the first time.

Purchase the servers >> 128GB RAM 32 VCPU’S 5TB SSD Hard disks (2Lakhs) ... (8GB RAM, 2 VCPU’s & 500 GH Hard Disk

Purchase the hardware components (RAM, mother board, processors, slots, VPU. etc)

Purchase the networking components (cables, switches, modems, extenders, routers etc.)

Purchase of CCTV cameras air conditioners, electrical components

**OPEX** 🡪 Operational Expenditure >> these were the things on which the organisation was investing to maintain/sustain their datacentres/infrastructure on monthly bases.

Monthly rents

Monthly internet bills

Monthly electricity bills

Monthly salaries for hardware, network, security engineers.

Monthly salaries for security guards

So, every company who gets project have to maintain all these capex and opex managing all these is very difficult if working in private cloud.

But after public cloud came into existence, it says there is no need to maintain, manage and run all these things. It came as a revolution in companies.

**Types of cloud computing**

1. **Public cloud:** available, accessible and reachable to each and everyone. Ex: gmail.com – this is available and access to each and everyone but we can not see others mails. Example: portal.azure.com/ >> says come to our platform, create account and then start utilizing our features creating/deploying virtual machines, DB's, Networks, VMSS, users, groups etc.
2. **Private cloud:** IT firms/ organisations were having their own cloud called as Private cloud; companies maintain their own expenses and responsibilities and this was accessible only for them. They are responsible if something is misshaped /disaster occurred.

***when this web application is hosted on some server then we called that as a web server (public cloud). when we are putting the data in the DB and this DB is hosted on some server then that server, we called it is DB server (private cloud)***

1. Hybrid cloud: It is the combination of public and hybrid cloud. Ex: let us say our frontend application servers are hosted in cloud as public and DB servers are in on-prem, now using VPN will connect from our backend server i.e. on-prem to frontend server i.e. cloud, this type of setup is called as hybrid cloud.
2. Community cloud: multiple companies working on same requirements comes up with mutual understanding, making one region as target having same data, same domain, configuration, security and targeting one region to deploy there application is called as community cloud.
3. Multivendor (or) Multi cloud: - Suppose client demands for best of all cloud providers means, IAAS from AWS; PAAS from Azure; SAAS from google cloud called as multivendor cloud.