CLOUD COMPUTING SNIPPETS

Cloud Computing Technologies

1. Virtualization

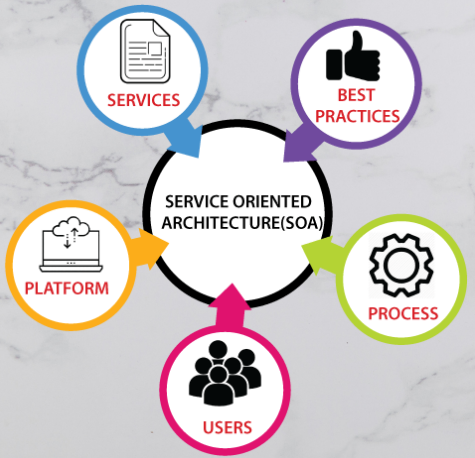
- Virtualization is the process of creating a virtual environment to run multiple applications and operating systems on the same server.
- The virtual environment can be anything, such as a single instance or a combination of many operating systems, storage devices, network application servers, and other environments.
- The concept of Virtualization in cloud computing increases the use of virtual machines.

- A virtual machine is a software computer or software program that not only works as a physical computer but can also function as a physical machine and perform tasks such as running applications or programs as per the user's demand.
- A list of types of Virtualization is given below -
- Hardware virtualization
- Server virtualization
- Storage virtualization
- Operating system virtualization
- Data Virtualization

2. Service-Oriented Architecture (SOA)

- Service-Oriented Architecture (SOA) allows organizations to access on-demand cloud-based computing solutions according to the change of business needs.
- It can work without or with cloud computing.
- The advantages of using SOA is that it is easy to maintain, platform-independent, and highly scalable.
- There are the following applications of Service-Oriented Architecture -
- It is used in the healthcare industry.
- It is used to create many mobile applications and games.

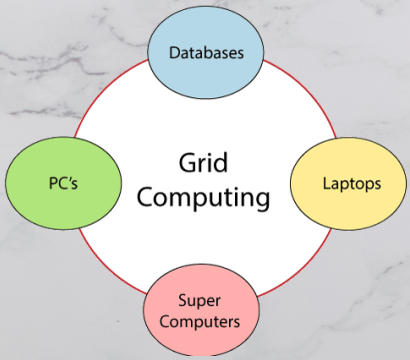
- In the air force, SOA infrastructure is used to deploy situational awareness systems.



Grid Computing

- Grid computing is also known as distributed computing.
- It is a processor architecture that combines various different computing resources from multiple locations to achieve a common goal.
- In grid computing, the grid is connected by parallel nodes to form a computer cluster.
- These computer clusters are in different sizes and can run on any operating system.
- Grid computing contains the following three types of machines -

- Control Node: It is a group of the server which administrates the whole network.
- Provider: It is a computer that contributes its resources in the network resource pool.
- User: It is a computer that uses the resources on the network.



- Mainly, grid computing is used in ATMs, back-end infrastructures, and marketing research.

Utility Computing

- Utility computing is the most trending IT service model.
- It provides on-demand computing resources (computation, storage, and programming services via API) and infrastructure based on the pay per use method.
- It minimizes the associated costs and maximizes the efficient use of resources.

- The advantage of utility computing is that it reduced the IT cost, provides greater flexibility, and easier to manage.
- Large organizations such as Google and Amazon established their own utility services for computing storage and application.