Day-1:

Cloud Computing:

==========

=>It is a process of delivering computing services (servers, databases, storage) over the internet is known as CC.

Cloud:

=>It is a process of accessing the data or application via internet at anytime and anywhere.

ex: Instagram, fb etc.

Vendors of cloud:

1.AWS

2.AZURE

3.GCP

4.SALESFORCE

5.IBM etc.

TYPES of CC:

1.Service Model:

a.IAAS b.PAAS c.SAAS

2.Deployment Model:

a.Private b.Public c.Hybrid d.Community cloud

1.Service Model:

	On-Premises	IAAS	PAAS	SAAS
Application	All	FIRST	FIRST	ALL
Data	Things	5	2	Managed
Runtime	Managed	Managed	Managed	By
Middleware	By	By	By You	Vendor
OS	You	You		
Virtualization				
Servers		Nxt 4 Managed	Nxt All	
Storage		By Vendor	Managed By Vendor	
Networking				
		Ex:Aws,Gcp etc.	Ex: GoDaddy	Ex: Gmail

Virtualization: creating a virtual version of something-like a server,storage,network-using software.

(or) : running multiple virtual machines on a single physical machine, each with its own os and resources, isolated from others.

e.g.: using VMware

2.Deployment Model:

public cloud	**private**	**hybrid**	**community**
Everyone can access	only Few people	Both	Multiple
cost low	cost high	Public	Organizations

security low	security high	+	use same cloud
pc managed by third parties	used by organizations	Private cloud	to store their data

AWS:(Amazon Web services)

==========

=>It is the best cloud provider.

->It is the first among all the clouds.

->It offers multiple services on different domains.

->It is the combination of Saas,Paas,Iaas.

why Aws so popular:

->Aws provides wide range of cloud computing services that can be used to build and run applications.

->It offers 200+ services on multiple domains.

->aws covers about 31 geographic regions around the world.

->the aws cloud spans 99 availability zones.

->It Follows Pay as You Go, Model.

Data Center : is the actual physical servers are housed.

Availability zone : is a physically isolated DC within a region. It is nothing but datacenter.

Region : is a geographical area, that contains 2 or more AZ's.

Edge Location : used to cache content closer to user. and used for low latency delivery of web content, videos etc.

cache : is the temporary storage of data to improve speed and performance.

Day-2:

services:

==========

1.EC2:(Elastic compute cloud)

=>EC2 is a service in the aws cloud which is used to launch/create virtual servers on the cloud. It provides on demand, scalable computing capacity in the aws.

->These servers are used for various purposes like hosting websites, running applications, storing and managing data.

SERVER: is a computer or machine which accepts and process the requests provided by another computer and provides response.

types of servers:

a.web server b. application c.database etc.

->To launch EC2 instance there will be some steps,

I. Add tags:

-you can give name to our instance.

ii. choose an AMI (Amazon Machine Image):

-An AMI is a template that contains the software configuration (os,applicaton server, applications) required to launch instance.

-It consists of an AMI-ID which is region specific.

iii. choose an Instance type:

-IT means server configuration; we are providing CPU & memory to our instance.

ex: t2.micro, t3.micro

Iv. Configure your instance and network part:

-here you need to configure all Ur instance details like no.of instances, subnets (AZ),vpc etc.

v. configure security group:

-A SG is a set of firewalls used to control inbound and outbound traffic for your AWS resources. Whom you want to allow or not

-these are region specific.

-the port range is 0 to 65535

-It deals with inbound and outbound traffic.

-SG are free you can create as many u want.

VI. Add storage:

-To store data in the server we use ebs volumes.

-free tier up to 30gb

vii.Review and launch:

Day-3:

EC2 Analysis:

=>whenever we launch an instance in the aws it will give 2 Ip address:

1.public Ip: To Access the application through internet(which are running in the server)

-It is also used to connect the instance.

-when you start and stop instance the public Ip will change.

2.private Ip: To Access the application within the server.

-Ip will not change

=>whenever we create SG for instance we should give SSH protocol with the port number 22, to connect to the Linux server(machine).

->you can also change SG after the instance creation, select the instance > click Actions >security >change sg >add sg you want >save

->You can use the same Security Group (SG) for multiple AWS EC2 instances.

=>whenever we create a instance a volume is created with mentioned size, after creation we can modify the size of the volume once, after once if u want to modify again u should wait 6hrs to modify. instead of modify again and again we can create volume, and we can attach it to the instance, but the volume should be created in the same availability zone of instance.

->You can attach and detach an Amazon EBS volume while an EC2 instance is running.

=>we can also change instance type, to modify the instance type, you must stop the instance first, after >click on actions >instance settings >change instance type >select type >apply

=>and also, we can change name tags for our instance.

Day-4:

continued Ec2... connect EC2 using putty(key-pair)

=>we can create instance in 2 ways, with key pair and without key pair.

=>keypair: when we launch an instance with keypair, it generates 2 keys

1.public key(instance)

2.private key (local system)

->when you want to connect your instance, the public key will have to match with private key.

->if we create an instance with key-pair, we can connect our instance on multiple ways

1.console (with or without key)

2. terminal (key pair): it is used to connect Linux machines.

ex: putty, mobaxtrem

types of key-pair:

1. RSA – it will support for all types of OS
2. ED25519 – it will not support by windows

->private key file formats are .pem and .ppk

=>using .ppk we can connect to machine though putty

steps: open putty >>give public Ip address of machine >>select SSH on left side and click auth and browse >>select ppk file and open

=>using .pem we can connect to machine through mobaxtrem and also we can convert pem file to ppk and connect it through putty. but we can't convert ppk to pem

=>in real time we use .pem file to connect to our machine.

->to convert .pem to .ppk we use putty Gen tool

steps: open putty gen >> click on load >>select all files at down and select the pem file >> click on save as private key and save