**What is cloud?**

The cloud" refers to servers that are accessed over the Internet, and the software and databases that run on those servers. Cloud servers are located in [data centers](https://www.cloudflare.com/learning/cdn/glossary/data-center/) all over the world. By using cloud computing, users and companies do not have to manage physical servers themselves or run software applications on their own machines.

It is the platform which processes the data & users of the application

Where --------install Linux,windows,genkins.my SQL,git etc.

**Cloud computing?**

study of the cloud servers.there are two types cloud

1. Service mode
2. Deploy mode
3. service mode:-

In service mode we use

Saas:- software as a service

paas:- platform as a service

Iaas:- infrastructure as a service

Faas:-function as a service

1. deploy mode

There are private cloud,public cloud,hybrid cloud and community cloud

1. private cloud:-only for particular persons or organizations(security)
2. Public cloud:-everyone can access this cloud
3. Hybrid cloud :-includes both private and public cloud
4. Community cloud:-combines with 2 organization they have share the amount of cloud price

**AWS(AMAZON WEB SERVICES)**

>AWS is a top most and best cloud provider

>this is the first cloud introduced in the market

>this is the combination of saas and paas

>without any physical space this aws allows people to store the data

>aws has an option like “pay as you go” that means pay wt you are using for.

>18 geographical regions were there where this aws is covering

AWS is having 37% market share along azure 27%,google cloud 15%,alibaba10%,ibm cloud 7%.

>cloud services are started in 2005

**DEVOPS**

Dev+ops(devops) is a combination of developers and operations team

>It is the way of software development

>it is a methodology

>it is a set of tools

>it is a way of automation things

**Devops is the process of delivering the project or product by ensuring automation in place ,by ensuring the quality with continues monitoring and continues testing**

**Devops is the culture of the organization to deliver the product**

**Why we need devops?**

To deliver the software project or product on time

Example :-phonepe app

If phonepe version have any issues to update version we need 10 days without devops.if we use devops in this case it will take 2 days to solve or update the issue using ci/cd

CI(continues integration)

CD(continues deployment)

**SDLC(sotware development life cycle)**

IT IS A PROCESS USED BY SOFTWARE COMPANY TO DEVELOP DESIGN,TEST SOFTWARE

1. waterfall model
2. Agile model
3. waterfall model :-water fall model is a old traditional model that first we have to develop the software and after test and deploy the software.

Requirement analysis---system design---implementation----deployment---mainainence

1. agile model

Agile model is a advanced methodology that gives the flexibility collaboration and deliver.it is introduced to decrease the errors and gives the accurate process.there is no limitations like waterfall model

1. Planning

To define the project scope and objectives and high level requirements

1. Analysis

To gather detailed requirements and understand the system needs.

1. Design

Create blueprints for the system

1. Development

Code and build the system as per design

1. Testing

To validate the system functionality and performance

1. Deployment

To ensure smooth delivery to the deployment

1. Maintenance

To handle updates and post deployment issues

**Waterfall model?**

Waterfall model is a old traditional model that first we have to develop the software and after that we have to test and deploy the software

>Requirement analysis---system design---implementation----deployment---mainainence

>It takes 6 to 12 months to deliver the project using waterfall model

1.Requirement analysis:

Software required specification(SRS)

2.system design

Based on the requirements

Design----planning(assigning work/task to the team)

There are two types of design

Low-level design

High-level design

Integration and 1st phase

In 2nd phase ---split-----develop---implementation(coding will be done in second phase)

Implementation:-implementation will combine all the coding previous steps and starts testing

Deployment:-complete software will be moved or shifted to the global server from the local server

Maintenance:-monitor the software or application (ex:-customer care)

Water fall model is also called as liner sequential development mode

It is non iterative model (no need of cycle)

Agile model

Present In the market any type application or software directly or indirectly connected with agile model only

Ex:-shopping applications like amazon flip-kart,ajio,myntra etc

In social media application like fb,Instagram,snap chat,wt app,twitter etc

Software:-combination of code

>the ability to respond to the changes from requirements,technology and people

>it is a combination of incremental and iterative to develop the software on application

Example:-v1-------v2----------vn

We can take the requirements from client

>we can deliver pieces like software versions

Advantages of the agile model:-

>requirement changes are allowed at any stage of development

>releases will be too fast (for every week)

>customers no need to wait for longer time

>good communication between all the teams

>very easy model to adapt (ex:- new person can use this )

Disadvantages

Less focus on design and document

Manual testing:- testing software manually without using automation tools is called manual tessting

There are three types of testng

1. white box testing
2. Black box testing
3. Grey box testing
4. white box testing:-

>developer will test each and every line of the code

>need programming skills to design the test cases

>each and every tester have knowledge to write the test cases

Like java python sql

>developers fixes the bugs and perform one round of white box testing

>fixing the bugs--->clearing the error or delete the bugs

1. black box testing:-

In this testing there are two types

1. Functional
2. Non fuunctional
3. Functional testing:-it is a type of testing whether each application works as per the software requirements

In functional testing there are 3 types

1. unit testing:-pieces of the software
2. Integration :-combined of multiple unit testing
3. System:-completion of integration

>to examine the functionality of the software

>to test getting exact result.

1. non functional:usability,security

Bug:-developer will develop the code and operation team performs testing and finds an error

Error:-mistakes in coding done by the developer

Defect:-the error that accepted by the developer

Failure:-total code is wrong

Grey box testing :-combination of blackbox and whitebox testing

TOOLS REQUIRED TO DEVOPS

1. PLANNING/CODING

GIT AND JIRA

1. BUILDING CODE

MAVEN,GRADLE,APACHE ANT

1. TESTING

SELENIUM TESTING WITH PYTHON

1. INTEGRATION

JENKINS(CI/CD)

1. DEPLOYMENT

DOCKERS,KUBERNATES

1. OPERATIONS ‘

ANSIBLE(MANAGING TOOLS)

1. MONITORING

TERAFORM

**My sql**

**Database:-** it is an application which stores and collects the data

>each database has one or more distinct api for creation,copy,manage,copy,searching and relocating the database.  
**Fill:-** unchanged or cannot update,cant organize the data in files.

**Api:-application programming interface**

**Excel:-**less secure or for security reasons we are not going to use excel

**DBMS:-database management system**

**>**stores the data in the form of tables

**Challenges of dbms**

Relations is not possible for the accessing the data

**RDBMS:-relation database management system**

>It is in the form of tables and we can also map them to the one location to another location

>it will retrieve the data very fastly

>operations will be very effective

Databases are 2 types

1. RDBMS
2. NON-RDBMS :-store the data in the form of key values (j-son format)

MY SQL DATABASE:-my sql along with sql

**SQL:-STRUCURED QUIERY LANGUAGE**

It refers to server platform in sql language

---> PREREQUISITES NEED TO CREATE A PROJECT

WE NEED

1. front-end:-view the data
2. Back-end:-interaction between data and program
3. Database:-storage--provides space to the applications

Database componenets

1. Client
2. Server

My sql uses 2 types of commands

1. DDL COMMANDS:-DATA DEFINITION LANGUAGE
2. DML COMMANDS :-DATA MANUPULATION LANGUAGE
3. DDL COMMANDS:-

Whatever we written

1. create :- to create
2. Alter :-in order to add rows and colums
3. Drop:-delete the record from db
4. Truncate:-remove the records from the table
5. Rename:-to change the table or records in the database
6. DML COMMANDS:-
7. insert:-insert the data into the table
8. Update:-update existing data into the table
9. Delete:-delete the records from the db
10. Call:-python or java progarmm
11. Explain call

Data types:-

CHAR-->a fixed length of string characters are allowed

VARCHAR -->a variable length

BINARY(SIZE)-->equal to char but stores the binary strings,default it will be 1

TEXT (SIZE)---> holds a string with a maximum length 65 to 535 bytes

TINY TEXT --> holds the string with maximum 255