Dev-Ops Course Day-1
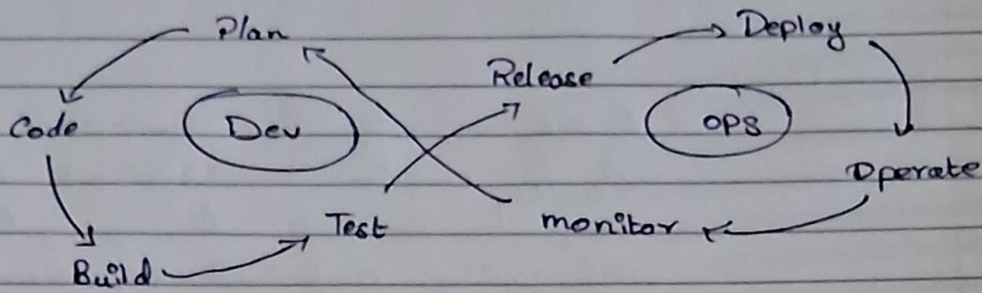

Dep-ops = Development + operation's

It is basically not a programming laungage.

It is not a single tool.

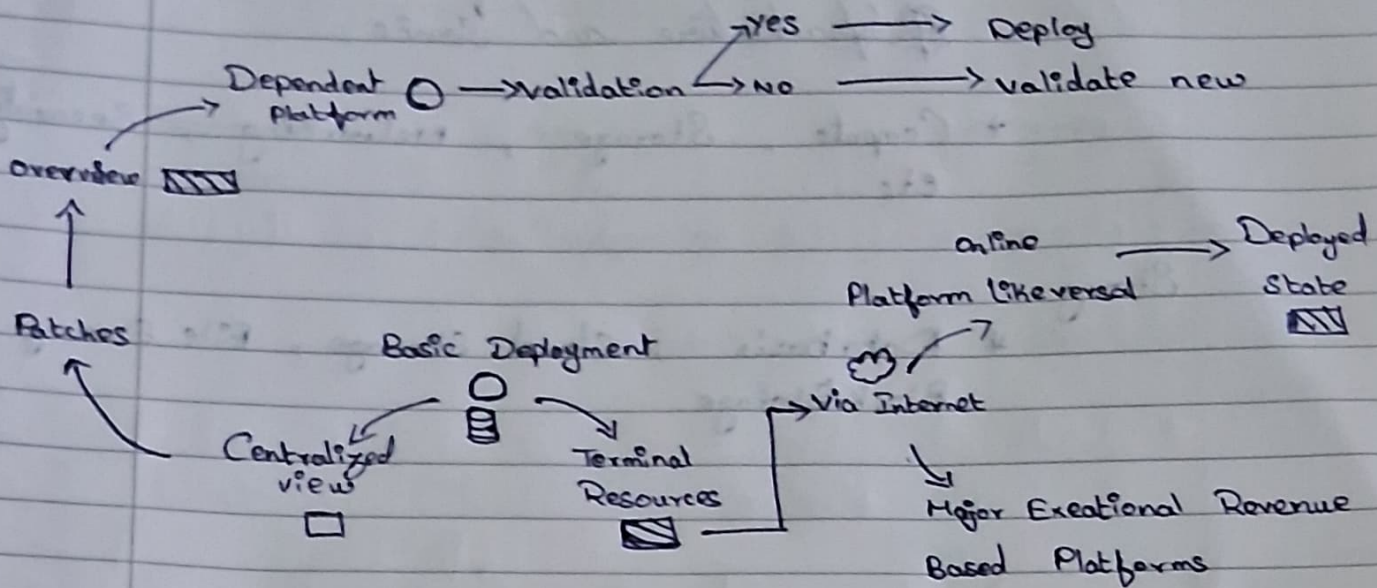It is a culture with a practice of multiple tools that helps to deliver the software faster with less errors.

※ Developer's will write code give to operation teams they will work in the sower and deploy, so, the user will wait for updates & patches in without Devops.

With Devops they use multiple tools to automate the project & collaborate with Developer & operation team, So, using Devops the use will get continous updates & patches

Dev-OPs Course Day-2
Cloud And Its Concepts :-

```
                                              ┌→ yes ────→ Deploy
        Dependent ○ ──→ Validation ─→ No ─────→ validate new
        Platform

overview ▨

  ↑
                                                              online ────→ Deployed
                                              Platform like versal              State
Patches                  Basic Deployment                                         ▨
    ↑                          ○
    |                          ▤                              →Via Internet
     └─   Centralized     ↗        ↘
            view              Terminal
              □               Resources              ↘
                                 ▨ ──┘         Major Exeational Revenue
                                              Based  Platforms
```

1) What is Cloud Architecture?

Cloud architecture is a design + a structure of cloud Computing systems.

Different Type of Cloud architecture

* Compute   * Storage
* Network   * Security
         * etc...

Front End:

Frontend , Backend , Middleware , cloud deploy
Cloud delevery.

User Interface

Backend :-

* It is the backbone of cloud.
  * Infrastructure and Sorice.

* Compute , Storage , Networking , Security
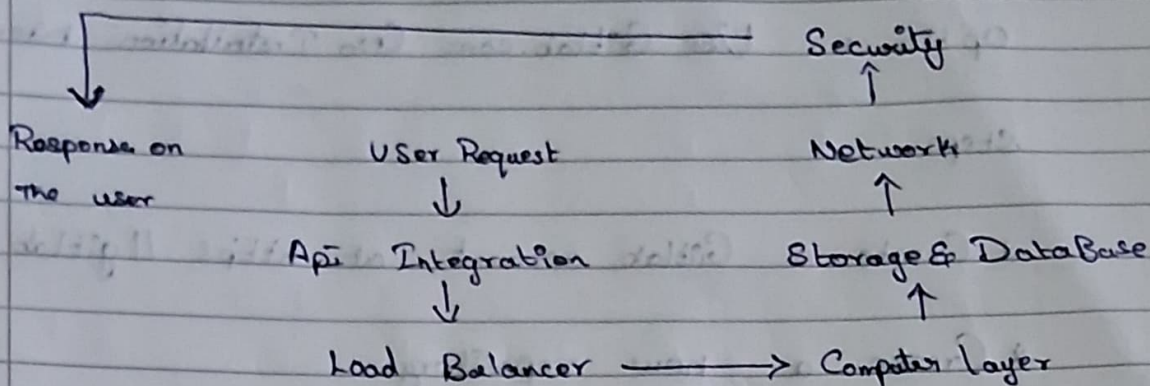 etc...

Storag :-

* Data basis , Cloud Storage , File Storage,
  Block Storage.

Security :-

IAM and acciablity - IAM (Identity
and Access Management)

It acts like a bridge between user &
System.

Cloud Delevery Model ::

```
                                              Security
                                                 ↑
Response on          USer Request            Network
The user                 ↓                      ↑
            Apī  Integration            Storage & DataBase
                         ↓                      ↑
            Load  Balancer  ——————→  Computer layer
```

What is CI /CD ?

Developers merge code frequently, daily (or) multiple files per day. trigers automatic builds per day.

Continous ~~Deployment~~ Develevery.

It is nothing but the code is abread completed tha is ready to deploy
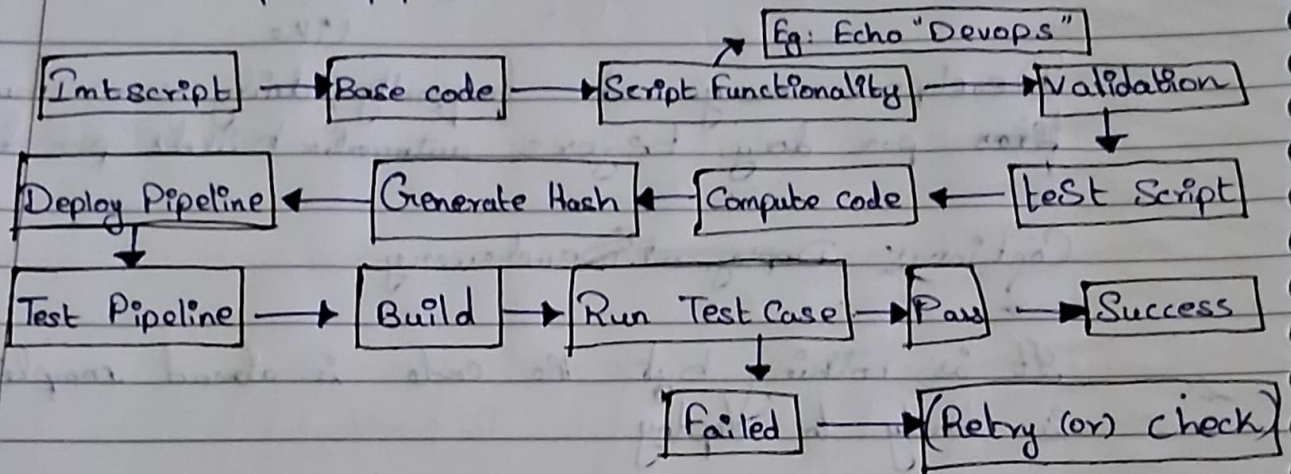
Continous Deploy

It is nothing but

Dev-ops Day-3
Using Gitlab As CI/CD Pipeline

Option:1 Use Gitlab.com (No Installation Needed)

Steps:

* Create a Gitlab account at https://gitlab.com

* Create a new repository

* Inside the repo, Create a gitlab-ci.yml file with a Sample pipeline.

```
                                          Eg: Echo "Devops"
┌──────────┐    ┌──────────┐    ┌──────────────────┐    ┌────────────┐
│Imt script│ ─→ │Base code │ ─→ │Script Functionality│ ─→ │Validation  │
└──────────┘    └──────────┘    └──────────────────┘    └────────────┘
                                                               ↓
┌──────────────┐   ┌──────────────┐   ┌────────────┐    ┌────────────┐
│Deploy Pipeline│←─│Generate Hash │←─ │Compute code│ ←─ │test Script │
└──────────────┘   └──────────────┘   └────────────┘    └────────────┘
      ↓
┌────────────┐    ┌───────┐    ┌──────────────┐    ┌─────┐    ┌─────────┐
│Test Pipeline│─→ │ Build │ ─→ │Run Test Case │ ─→ │Pass │ ─→ │Success  │
└────────────┘    └───────┘    └──────────────┘    └─────┘    └─────────┘
                                      ↓
                                 ┌────────┐    ┌──────────────────┐
                                 │ Failed │ ─→ │ Retry (or) check │
                                 └────────┘    └──────────────────┘
```

Tools:

Jira - A project management tool used to track tasks & progress in software projects

Use: used in software projects to organize work

Github - It's a cloud based platform to host our repositiaries.

* Developers can collaburate, review and manage process.

Git = A version control system the keeps the track of code changes.

* Let you go back to your old version if something breaks.

Github Actions: A CI/CD tool build onside Github

* Automate work flow like building whenever the input changes.

Docker - A tool that package application in to container so the our the same every where

* Avoids 'The work on the mechine problem.

MEVAN - A build automation tool for java projects.

* handle dependence and project build

GRADE - It also a automated tool compartivel flexible with Maven

* Faster than moven and supports incromentel bills

TERRAFORM : It is an Infrastructure as a code tool used to create and manage Resource databases and networks automatically

Why? Terraform - Ensure Consistent Infrastructure setup Accross environment

* An configuration Management and Automation tool

* helps to install Software Configure System and update Media Services.

PROMETHEUS - It is an open Source Monitoring tool.

Dev-ops Day-1

Why it is used :-

Color Collects metris → cpu →
Memory usage → Request rate → err
and allerts when something goes
wrong.

GRAFANA :-

It is used for data visualization
and dash board tool display metrics
information of graphs & charts