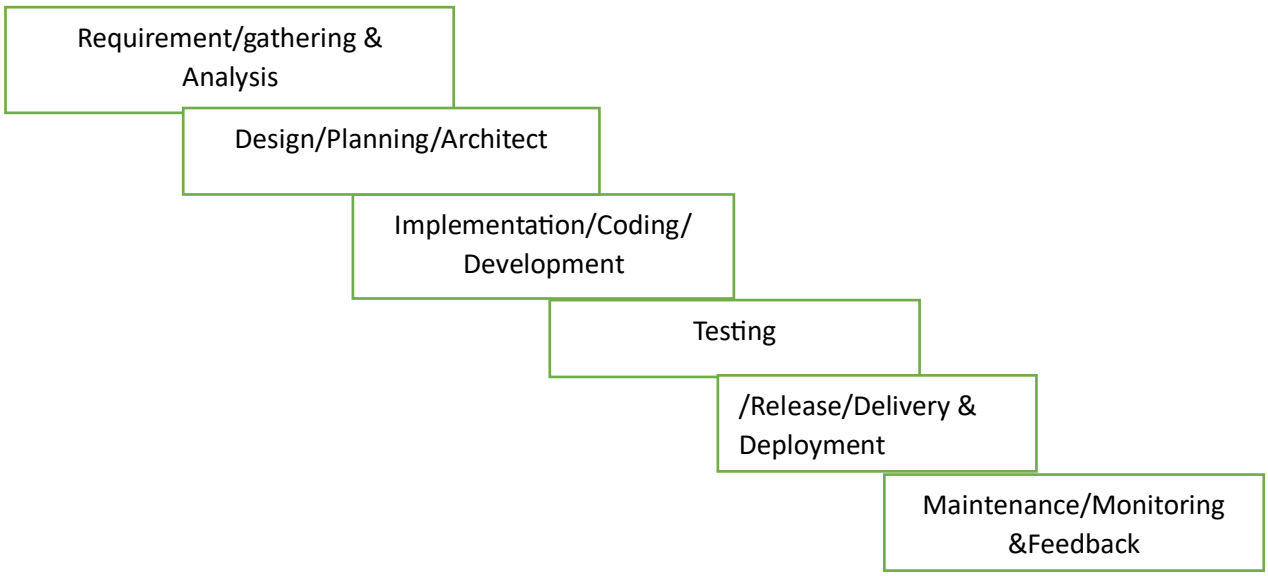
Introduction To DevOps

1 SDLC (Software Development Life Cycle)

•It is a process to build any package or software and application

•We have Two type of sdlc models

1] Waterfall Model



1] Disadvantages Of Waterfall Model

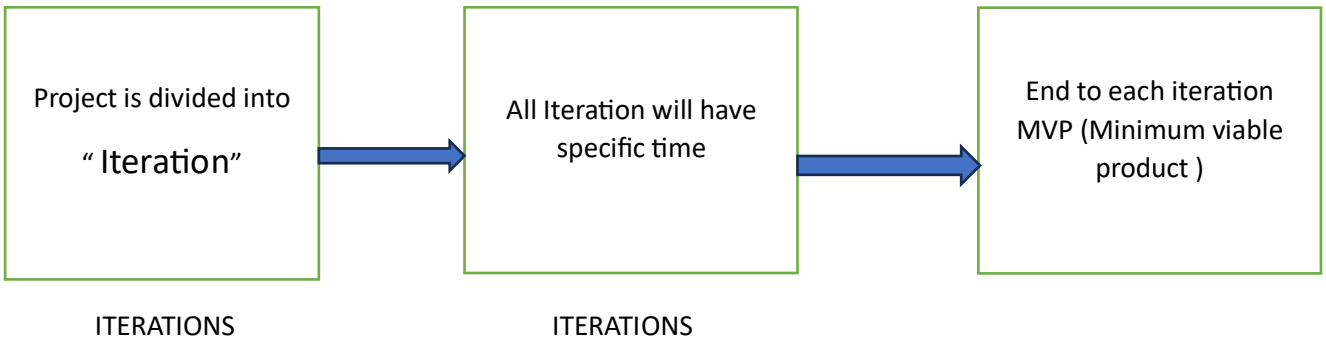
• It is not suitable for complex project where changes are in high frequency

• Time Consuming

• until and unless the stage is not complete we can shift to another stage at at the same time we can't go back

• In order to address this issue in model we have next model is Agile Methodology

2. Agile Methodology



Limitation of agile methodology

Dev team	Ops team
Wants changes	Wants stability

Example file 1.0 version

Configuration

Java 1.8 2 version

Tomcat -9

Maven -21

File-2.0 version

1 because of platform dependency we are using DevOps

DevOps without development culture

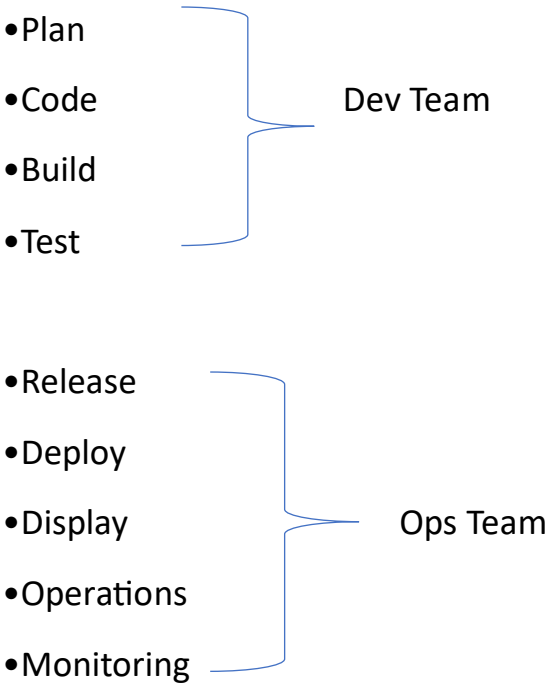
- release and deploy
- Mismatch
- unpredictable issue

• blame games

Development with DevOps culture

• streamlined delivery
• team work in collaboration
• continuous monitoring, and feedback

Life cycle of DevOps



What DevOps is not

• DevOps is not a role, person or organization
• DevOps is not a product and tool
• DevOps is not just about writing a script on implementing the tool

1 What is DevOps ?

• DevOps is a practice that allows a single team to manage the entire development life cycle ie development testing, deployment and monitoring form code to production

2 What does DevOps do ?

• Integrates develop and operation team

2] Improves collaboration and productivity

- Automating the infrastructure
- Automating the workflow
- continuously measuring application performance

Skills of a DevOps Engineer

I. Tools

- Version Control System (Git)
- Continuous Integration (Jenkins)
- Containerization/Virtualization (Docker)
- Configuration Management (Ansible)
- Monitoring (Prometheus, Grafana)

II. Networking Skills

- General Networking Skills, Establishing connection between the containers (container orchestration)

III. Other Skills

- People Skills, Process Skills, Customer Skills, and Empathy

- Cloud

DevOps Life Cycle

I. Plan

First stage of DevOps cycle where you can plan, track, visualize, and summarize your project before working and starting.

Example: Jira, Trello

II. Code

Second stage of DevOps cycle where the developers write their code.

Example: Git, GitHub, BitBucket, GitLab, AWS Code Commit, Azure Repository

III. Build

Build is a pre-release version and is defined by build automation, other than by release number.

Example: Apache Maven, Jenkins, Gradle

IV. Test

Process of executing automated tests as a part of the software delivery pipeline in order to obtain feedback on the business risk associated with software release as rapidly as possible.

Example: JMeter, Selenium, Junit

V. Release

This phase helps to integrate code into a shared repository using which you can detect and locate errors quickly and easily.

Example: Bamboo, GitLab, Travis CI

VI. Deploy

Manage and maintain deployment and redeployment of software systems and servers in any computational environment.

Example: AWS, Azure, Ansible, Chef

VII. Operations

This phase is to keep the system upgraded with the latest updates.

Example: Ansible, Chef, Azure, AWS

VIII. Monitoring

It ensures that the application is performing as desired and the environment is stable. Then it quickly determines when a service is unavailable and understands the underlying causes for any issues.

Example: Splunk, Prometheus, Grafana, Nagios, Sensu