90days of DevOps challenge

This is a #90daysDevOps challenge taken by me under the guidance of [Subham Londhe](https://www.linkedin.com/in/ACoAABhZ4kMBt55axHJpEnVRp0UOUl-_JwwmPwk) sir and [Bhupinder Rajput](https://www.linkedin.com/in/bhupinder-rajput?miniProfileUrn=urn%3Ali%3Afs_miniProfile%3AACoAAA5UmscBtxIvo2Uq0leRawd70T2LqCBdtKk&lipi=urn%3Ali%3Apage%3Ad_flagship3_search_srp_all%3Bc0oxNPmpS3aDW8tPLthlZg%3D%3Dsir)

In this challenge I will be completing Day-wise tasks given by [Subham Londhe](https://www.linkedin.com/in/ACoAABhZ4kMBt55axHJpEnVRp0UOUl-_JwwmPwk) sir for 90 days.

**Day1 Task:**

 Fork this Repo.

- Start with a DevOps Roadmap[https://youtu.be/iOE9NTAG35g]

- Write a LinkedIn post or a small article about your understanding of DevOps

 - What is DevOps

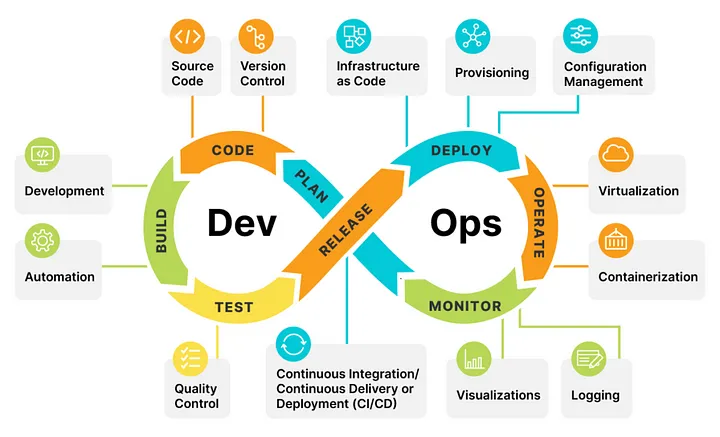
 - What is Automation, Scaling, Infrastructure

 - Why DevOps is Important, etc

**What is DevOps?**

The word consists of 2 terms ‘Development’ & ‘Operation’

DevOps is a methodology that allows a single team to manage the entire application development lifecycle i.e development,testing,deployment and operations. Its an Software development approach through which superior quality software can be developed quickly and with more reliability.



**Benefits of using DevOps?**

* Continuous delivery of software as it offers a significantly lower faliure rate of new releases
* It makes use of version control tool to keep track of earlier versions and the changes made by each developer
* Better collaboration of Development Team with Operations Team
* Better efficiency and scalability as helps team to improve development quality by removing the infrastructure issues and reduces the time to market up to 50 percent through its smooth integration of all software lifecycle components.
* It is the cost efficient method of software development which is always an aspiration of the IT management
* Everything is automated through tools .So, less manual intervention

**Stages OF DevOps**

**CONTINUOUS INTEGRATION**

Compile,Validate,Code Review,Unit Testing,Integration Testing

**CONTINUOUS DELIVERY**

Deploying the build app to test servers

**VERSION CONTROL**

Maintains different versions of code

**CONTINUOUS DEPLOYMENT**

Deploying the test app on production server for release

**VVD**

1. 2. 3. 4.

**What is Automation?**

Automation is the process by which a task is made to be done on its own at a particular event/time.There are several tools in DevOps which support automation and help reducing downtime and ensuring availability and scalability and reliability when required.For ex- when the traffic increases or a critical condition for a running pod in kubernetes occurs it can automatically upscale it to manage the upcoming traffic or load without affecting the availability and downscale accordingly to reduce the resources been used and hence ensuring cost efficiency.

**What is Scaling?**

Scaling refers to the ability to increase decrease the capacity of an application to handle load/demand.

There are 2 types of Scaling:-

1. Vertical scaling - In this we are increasing/decreasing the capacity of the resource already handling the application.
2. Horizontal scaling- In this we are increasing or decreasing the replicas of the resources running the application.

## **What is Infrastructure?**

Infrasturcture refers to physical or virtual resources which includes software,hardware,network resources etc in IT environment. In cloud computing Iaas (Infrastructure as a service )provides services and infrastructure of IT such as strorage,servers,networking resources and virtual machines to the organization who has subscribed for it.These virtual infrastructure and its services can be availed with help of internet from any part of world providing the potential for IT organizations to scale up their business in a more faster,convenient ,reliable and cost efficient manner.

**DevOps Tools**

* Git- Distributed version control tool
* Docker- Open source virtualization/containerization platform
* Kubernetes- Container Orchaestration tool
* Maven- automation building tool
* Selenium- automation testing tool
* Jenkins - continuous integration tool
* Nagios- continuous monitoring tool
* Ansible/terraform/chef- configuration management tool