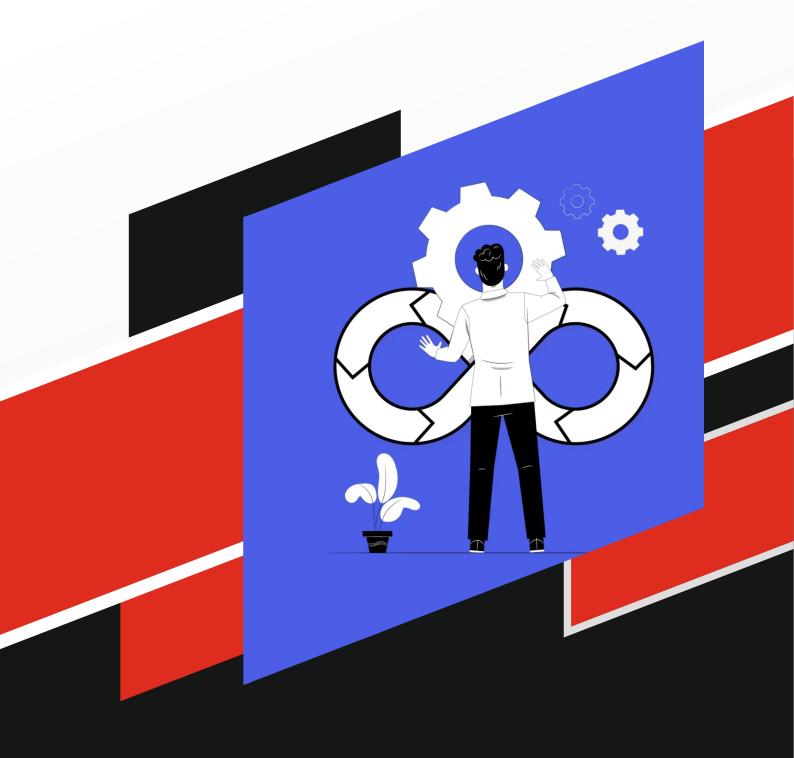# Devops

# Syllabus of Devops

## DevOps Introduction:
- Why DevOps and roles and responsibilities
- How DevOps and Cloud exists in today's world
- What is Continuous Integration and Delivery how it's related to DevOps

## Linux:
- Linux Introduction, Principles and Linux Distro
- Command line utilities and basic commands
- Linux File system introduction
- Text Editors
- Filters and Redirections
- Users & Groups and Permissions
- Sudo
- Software Distribution / Installation / Management: Redhat & Ubuntu

## Tools:
- telnet, scp, ssh, rsync, disk utils

## Networking Fundamentals:
- Computer networks basics like LAN, WAN, P2P etc
- Switches, Routers
- Network Protocols
- Sockets and Ports
- IP address/ DNS/ DHCP

## Learning Application Technologies and Architectures:
- Database
- Java language Fundamentals like compiler, JVM and packaging
- Basic concepts of Web Application development in Java
- Application Servers and Deployments

## Git:
- What is version control system?
- Compare Git with others and why is it called Distributed Version
- Control System?
- Git Architecture.
- Create an Local Git Repository
- Operations like commit, pull, push, clone, merge, cherry pick and rebase
- Git Branches and how t use
- GitHub a remote repository
- Setting up GitHub account and publishing our code and managing
- Integration with Eclipse IDE

## Maven:
- What are build tools?
- Compare Ant and Maven
- GAV Coordinates in Maven
- Build a Java Application using Maven
- Dependency Management
- Plugins as a building block in maven build
- Building and deploying java web application using maven

## Jenkins:
- Introduction to Continuous Integration.
- Build & Release and relation with DevOps
- Why continuous integration
- Jenkins introduction and setup
- Jenkins projects/jobs
- Jenkins plugins

## Jenkins administration:
- Users
- Nodes/Salves
- Managing plugins
- Managing Software Versions

## Virtualization:
- Introduction and Purpose of Virtualization technology
- What is Hypervisor software?
- Virtual box/Vagrant

## Vagrant:
- What is Vagrant, why is it used for?
- Install Vagrant and Virtual Box
- Run Your first box
- Box Status
- Connect t a box
- Halting and destroying box
- Vagrant Cloud
- Look at Vagrantfiles
- Vagrant Sync Folders
- Vagrant Networking
- Vagrant Providers
- Vagrant Provisioners
- Develop and deploy an application on Vagrantbox
- Vagrant multi-machine Vagrantfile
- Create a base box
- Upload a box to Vagrant Cloud

## JFrog Repository:
- Introduction and Setup
- Configuring Remote / Virtual Repositories in JFrog
- Building Maven Applications using JFrog Repository

## Docker:
- Introduction to Docker
- Virtualization and Containerization differences
- Docker Installation
- Docker CLI
- Run your first Docker Container
- Copy Files in the Docker Image
- Docker, Maven and Jenkins
- Tag and share docker images
- Database Installation with Docker Image
- Learning DockerFile
- Creating our own Docker Image
- Docker Networking

## Kubernetes:
- Kubernetes intro and Architecture
- Kubernetes Setup
- Running Docker containers on Kubernetes
- Kubectl
- What is Pod, Service, Controller and Deployment in Kubernetes

## Chef:
- Introduction to Chef and compare with Ansibile & Puppet
- Understanding Chef concepts
- Writing Chef Recipes and Creating Cookbooks
- Chef Server
- Knife
- Roles
- Setting up your own Chef Server
- Databags

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