DEVOPS TUTORIAL

Course Content:

Introduction to DevOps:

* Why DevOps
* What is DevOps
* What is SDLC
* DevOps Stakeholders
* DevOps Goals
* DevOps Tools

Introduction to Cloud:

* Introduction to cloud computing
* Different vendors of Cloud computing (Amazon, Microsoft, GCP.)
* Importance of cloud computing
* Advantages and disadvantages of cloud computing
* Private Cloud/ Public Cloud/ Community Cloud
* Cloud Services

\* Software as a service (SaaS)

\* Platform as a Service (PaaS)

\* Infrastructure as a Service (IaaS)

\* Functions as a service (FAAS)

Introduction to AWS:

* AWS Console && Account Creation
* EC2(Elastic compute cloud)
* VPC (Virtual Private Cloud)
* IAM (Identity and Access Management)

Linux Basics:

* Unix and Linux difference
* Linux File system structure
* Basic Linux/Unix commands
* Changing file permissions and ownership
* Start and stop services
* Find and kill the process with id and name
* Package installation

DevOps Tools:

GIT: Version Control

* Introduction
* What is Git
* About Version Control System and Types
* Difference between CVCS and DVCS
* A short history of GIT
* GIT Basics
* GIT Command Line
* Installing Git
* Installing on Linux & setup
* Git Essentials
* Creating repository
* Cloning, check-in and committing or Fetch pull and remote
* Creating the Branches, switching the branches, merging the branches.

Docker:

* Introduction
* What is a Docker
* Use case of Docker
* Platforms for Docker
* Dockers vs. Virtualization
* Docker Architecture
* Understanding the Docker components
* Installing Docker on Linux
* Docker commands
* Docker Hub
* Downloading Docker images
* Uploading the images in Docker Registry
* Understanding the containers
* Running commands in container
* Running multiple containers.
* Creating a custom image.
* Running a container from the custom image
* Publishing the custom image
* Docker Networking
* Accessing containers
* Exposing container ports
* Docker Compose
* Installing the Docker compose
* Docker Swarm

Kubernetes (K8):

* Introduction K8
* K8 Architecture
* Installation && Configuration
* Defining PODS
* Minikube, Kubectl
* Clusters
* K8s Volumes
* K8s Name spaces
* K8s Networks
* K8s Components
* K8s Probes
* Config maps
* Ingress Controller
* Deployment
* Service
* PORT Forwarding

Ansible:

* Introduction to Ansible
* Installation, Configuration management & Orchestration
* What is Playbooks
* Continuous Deployment using Ansible
* Playbooks Deep-dive
* Ansible Tower && Galaxy
* Roles

Jenkins:

* Introduction
* Why Jenkins
* What is Jenkins
* Advantages & Disadvantages of Jenkins
* Installation & Configuration of Jenkins
* Maven Installation
* Installing Jenkins Plugins
* Exploring Jenkins Dashboard
* User Creation
* Securing & Authorization of Jenkins

Introduction of CI/CD

* What is continuous Integration & continuous Deployment
* Configuring CI/CD Pipeline
* Creating free style Jobs
* Running & Trouble shooting Jobs
* Adding & updating Jenkins Plugins
* Disabling and Enabling Jenkins Jobs

Build Deployments:

* Building Deployments
* Trouble shooting

Jenkins practice

Terraform:

* Introduction
* Getting started with Terraform & Installation
* Terraform modules
* Setting up AWS with Terraform
* Terraform Integration with other DevOps tools
* Trouble Shooting