Kubernetes has been an awesome production grade container orchestration engine since long.

**Prerequisite :**

* Good understanding of linux
* Basic Understanding of networking & DNS , DHCP
* Knowledge of Git
* Python programming is must

Day 1:

**Container Technology Overview**

* Container technology overview
* Role of containers in micro services
* Need of container orchestration
* Introduction to Kubernetes

**Managing public and private registry**

* PUblic registry with Dockerhub
* Deploying custom private registry
* Using azure container registry

**Kubernetes:**

* . Introduction to Kubernetes:
* Evolution of Kubernetes
* What is Kubernetes
* Kubernetes Use Cases
* Diﬀerences between Kubernetes and Docker Swarm
* . Kubernetes Architecture:
* Understand Kubernetes Architecture
* Introduction to Kubernetes Master
* Components of Kubernetes Master
* Introduction to Node Components
* . Introduction to Kubernetes client options
* Client options like kubectl , webUI , API & SDK
* Understanding auth with kube -apiserver from Kubectl and webUI
* Introduction to Pods • Pods Lifecycle
* Working with Pods to manage multiple containers

**Day 2 :**

* Setting python SDK for k8s interaction
* SDk walk through
* Connecting from Python SDK
* Using some sample image of ML code to deploy as POD
* Deploying Pods via Replication Controllers using SDK
* Services, Labels and Replica Sets:
* Overview of Services
* Labels and Selectors
* Creating different kind of service with SDK

**Day 3:**

* Understanding Namespaces
* Kubernetes JOb management
* Deploy TFJob using SDK
* Deploy Pytorch using SDK
* Deploy KATIB jobs using SDK
* ConfigMap and secret concepts and demos

**Day 4:**

* HA in k8s cluster
* HPA for python and react based application
* Ingress controllers
* ISTio Understanding and implementations

**Day 5 :**

* SDK with ISTIO and Ingress
* Introduction to ODIC
* Introduction to DEx
* Setting up DEx
* DEX with GIthub
* Kubeconfig file with DEX
* Deploy application with DEX auth services