**Kubernetes Activities**

**Day 1. 26-04-2023**

1. **Write a Pod Spec for Spring Pet Clinic and nopCommerce Applications**
2. **Execute the kubectl commands: kubectl get pods and describe pods**

**Day 2. 27-04-2023**

1. **Explain Kubernetes architecture**
2. **Setup k8s on single node using minikube and kind**
3. **Run the Spring Pet Clinic by manifest**

**Day 3. 28-04-2023**

1. **K8s Cluster Installation**
   1. **Kubeadm**
   2. **Minikube**
   3. **Kind**
2. **Writing the Manifest Files for Spring Pet Clinic and nopCommerce App**
3. **Writing the Manifest Files for Game of Life App**
4. **Create Jobs & CronJobs**
5. **Create the ReplicaSet and Replication controller**
6. **Writing the LABELS and Selecting the LABELS using selector concept**

**Day 4. 04-05-2023**

1. **Theory concepts of k8s**
   1. **Pods / Containers**
   2. **Jobs / CronJobs**
   3. **ReplicaSets**
   4. **Deployment**
   5. **Service / Headless Service**
   6. **Volumes / Persistent Volumes / Persistent Volume Claims**
   7. **Stateful Sets**
   8. **Namespaces and**
   9. **Other till upto classroom concepts covered so far**

**Day 5. 05-05-2023**

1. **Create a mysql pod with stateful set with 1 replica**
2. **Create a nopCommerce deployment with 1 replica**
3. **Create a Headless service to interact nopCommerce with mysql**
4. **Create a Load balancer to expose nop to external**

**Day 6. 09-05-2023**

1. **Create a Kubernetes cluster using kubeadm**
2. **Deploy any application using kubectl**
3. **Backup Kubernetes I.e., backup etcd**
4. **List out all the pod’s running in kube system namespace**
5. **Write down all the steps required to make Kubernetes highly available**
6. **Do a rolling update and roll back**
7. **Ensure usage of secret in MySQL and configmaps**
8. **Create a nop commerce deployment with MySQL statefulset and nop deployment**

**Day 7. 10-05-2023**

1. **Node selector task by**
   1. **Node selector**
   2. **Affinity**
   3. **Taints and Tolerances**
2. **K8s cluster Upgrade from 1.25 to 1.27**

**Day 8. 16-05-2023**

1. **Installing EKS and Aks**
2. **installations using helm chart**
   1. **mysql**
   2. **postgres**
   3. **mongodb**
   4. **redis cache**
3. **write kustomize file by creating files for 3 environments**
   1. **dev**
   2. **qa**
   3. **test**