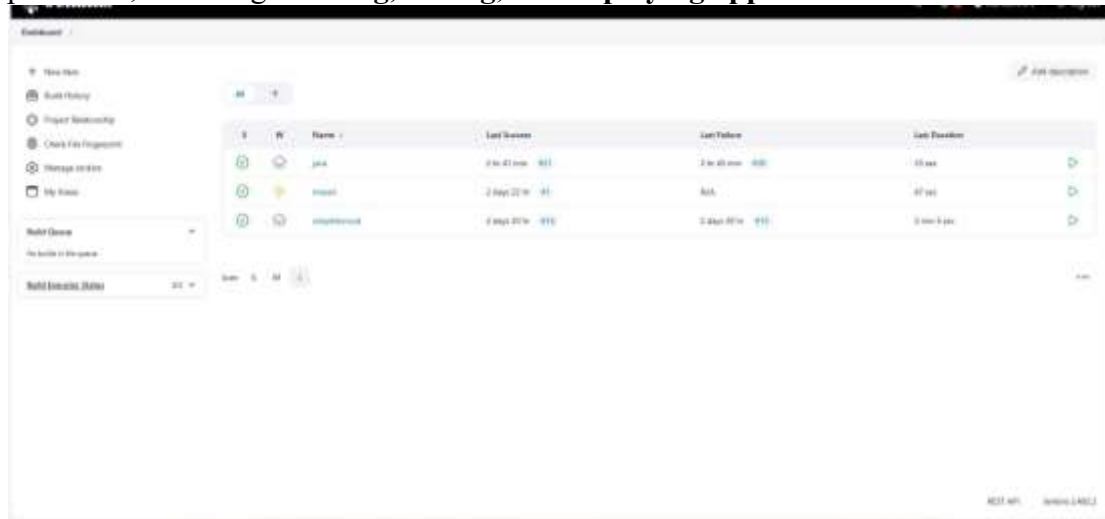


DAY 6:

JENKINS:

Jenkins is an open-source automation server used for **Continuous Integration (CI) and Continuous Deployment (CD)**. It helps automate software development processes, including **building, testing, and deploying applications**.



JENKINS PIPELINE:

A **Jenkins Pipeline** is a set of automated steps that define how software is built, tested, and deployed. It is written as code in a **Jenkinsfile** and helps implement **Continuous Integration (CI) and Continuous Deployment (CD)**.



KUBERNETES DEPLOYMENT:

apiVersion: apps/v1
kind: Deployment
metadata: name: my-
deploy labels:

```

    apptype: web-backend # Ensure this matches Service selector
spec: replicas: 4 selector: matchLabels: apptype: web-backend #
  Ensure this matches Service selector strategy: type:
  RollingUpdate
template:
  metadata:
    labels:
      apptype: web-backend # Ensure this matches Service selector
  spec:
    containers:
      - name: my-app
        image: ashilin20/app:latest
        ports:
          - containerPort: 5050
---
apiVersion: v1
kind: Service
metadata: name:
my-service labels:
  apptype: web-backend # Make labels consistent
spec: type:
  NodePort
  ports:
    - targetPort: 8080 port: 5050 nodePort: 30001

```

PIPELINE SCRIPT:

```

pipeline {
  agent any

  stages {
    stage('SCM') {
      steps {
        git branch: 'main', url: 'https://github.com/ashilinbs/DevOps.git'
      }
    }

    stage('Build') {
      steps {
        sh "mvn clean"
        sh "mvn install"
      }
    }

    stage('Build Docker Image') {
      steps {

```

```

    script {
        sh 'docker build -t ashilin20/app .'
    }
}

stage('Push to Docker Hub') {
    steps {
        script {
            withDockerRegistry(credentialsId: 'cur', url:
'https://index.docker.io/v1/') {
                sh 'docker push ashilin20/app'
            }
        }
    }
}
}
```

[illegible]

CopyEdit

minikube config set memory 4096 # Set memory to 4GB minikube
config set cpus 2

OUTPUT:

```
Handling connection for 9000
Handling connection for 9000
[1] Stopped minikube service my-service 9000:8080
ashlin@ASHLIN:~$ kubectl get pod
NAME          READY   STATUS    RESTARTS   AGE
my-deploy-7689d9fdd-5fqr7  1/1     Running   0           7m45s
my-deploy-7689d9fdd-5fqr8  1/1     Running   0           7m45s
my-deploy-7689d9fdd-5fqr9  1/1     Running   0           7m45s
my-deploy-7689d9fdd-5fqr0  1/1     Running   0           7m45s
my-deploy-7689d9fdd-5fqr1  1/1     Running   0           7m45s
ashlin@ASHLIN:~$ kubectl exec -it my-deploy-7689d9fdd-5fqr7 -- /bin/bash/
OCI runtime exec failed: exec failed: unable to start container process: exec: "/bin/bash/": stat bin/bash/: no such file or directory: unknown
command terminated with exit code 126
ashlin@ASHLIN:~$ kubectl exec -it my-deploy-7689d9fdd-5fqr7 -- /bin/bash
root@my-deploy-7689d9fdd-5fqr7:/usr/local/tomcat# ls
bin      conf      filtered-KEYS  LICENSE  native-jni-lib  README.md  RUNNING.txt  upstream-KEYS  webapps  dist
BUILDING.txt  CONTRIBUTING.md  lib      NOTICE  RELEASE-MOTES  webapps
root@my-deploy-7689d9fdd-5fqr7:/usr/local/tomcat# ls
bin      conf      filtered-KEYS  LICENSE  native-jni-lib  README.md  RUNNING.txt  upstream-KEYS  webapps  dist
BUILDING.txt  CONTRIBUTING.md  lib      NOTICE  RELEASE-MOTES  webapps
root@my-deploy-7689d9fdd-5fqr7:/usr/local/tomcat/webapps# ls
seven-web-app  seven-web-app.war
root@my-deploy-7689d9fdd-5fqr7:/usr/local/tomcat/webapps# exit
exit
ashlin@ASHLIN:~$ kubectl port-forward svc/my-service 9000:8080
Unable to listen on port 9000: Listeners failed to create with the following errors: [unable to create listener: Error listen tcp4 127.0.0.1:9000: bind: address already in use unable to create listener: Error listen tcp6 [::]:9000: bind: address already in use]
error: unable to listen on any of the requested ports: [9000 8080]
ashlin@ASHLIN:~$ kubectl port-forward svc/my-service 9000:8080
Unable to listen on port 9000: Listeners failed to create with the following errors: [unable to create listener: Error listen tcp4 127.0.0.1:9000: bind: address already in use unable to create listener: Error listen tcp6 [::]:9000: bind: address already in use]
error: unable to listen on any of the requested ports: [9000 8080]
ashlin@ASHLIN:~$ kubectl port-forward svc/my-service 9000:8080
Forwarding from 127.0.0.1:9000 -> 8080
Forwarding from [::]:9000 -> 8080
Handling connection for 9000
Handling connection for 9000
Handling connection for 9000
Error from server (NotFound): error when replacing "deploy.yml": deployments.apps "my-deploy" not found
ashlin@ASHLIN:~$ kubectl get pod
No resources found in default namespace.
ashlin@ASHLIN:~$ kubectl run my-pod -- image=ashlin20/app -- port=80
error: required flag(s) "image" not set
ashlin@ASHLIN:~$ kubectl run my-pod -- image=ashlin20/app -- port=80
error: required flag(s) "image" not set
ashlin@ASHLIN:~$ kubectl run my-pod --image=ashlin20/app --port=80
pod/my-pod created
ashlin@ASHLIN:~$ kubectl get pod
NAME          READY   STATUS    RESTARTS   AGE
my-pod        1/1     Running   0           12s
ashlin@ASHLIN:~$ kubectl apply -f deploy.yml
deployment.apps/my-deploy created
Warning: resource service/my-service is missing the kubectl.kubernetes.io/latest-applied-configuration annotation which is required by kubectl apply. kubectl apply should only be used on resources created declaratively by either kubectl create --save-config or kubectl apply. The missing annotation will be patched automatically.
service/my-service configured
ashlin@ASHLIN:~$ minikube service my-service
minikube service my-service
+ Starting tunnel for service my-service.
+ http://127.0.0.1:33081
+ Opening service default/my-service in default browser...
+ http://127.0.0.1:33081
+ Because you are using a Docker driver on linux, the terminal needs to be open to run it.
[1] Stopped minikube service my-service
ashlin@ASHLIN:~$ kubectl port-forward svc/my-service 9000:8080
Forwarding from 127.0.0.1:9000 -> 8080
Forwarding from [::]:9000 -> 8080
```

```
localhost:1027 (chrome-remote-dev-ops)
Hello World!

Handling connection for 9080
*2
[2]+  Stopped                  kubectl port-forward svc/my-service 9080:9080
ashili@AS50113:~$ kubectl get pod
NAME                                STATUS    RESTARTS   AGE
my-deploy-76895d9fdd-5fqr7          1/1      Running    0           7m15s
my-deploy-76895d9fdd-bxtw4          1/1      Running    0           7m15s
my-deploy-76895d9fdd-pcjqh          1/1      Running    0           7m15s
my-deploy-76895d9fdd-r962n          1/1      Running    0           7m15s
my-pod                               1/1      Running    0           3m48s
ashili@AS50113:~$ kubectl exec -it my-deploy-76895d9fdd-5fqr7 -- bin/bash/
OCI runtime exec failed: exec failed: unable to start container process: exec: "bin/bash/": stat bin/bash/: no such file or directory: unknown
command terminated with exit code 128
ashili@AS50113:~$ kubectl exec -it my-deploy-76895d9fdd-5fqr7 -- /bin/bash
root@my-deploy-76895d9fdd-5fqr7:/usr/local/tomcat# ls
bin                                filtered-HEYS  LICENSE  native-jni-lib  README.ad  RUNNING.txt  upstream-HEYS  webapps.dist
BUILDING.txt  CONTRIBUTING.ad  lib      NOTICE        RELEASE-NOTES  RUNNING.txt  upstream-HEYS  webapps
root@my-deploy-76895d9fdd-5fqr7:/usr/local/tomcat# ls
bin                                filtered-HEYS  LICENSE  native-jni-lib  README.ad  RUNNING.txt  upstream-HEYS  webapps.dist
BUILDING.txt  CONTRIBUTING.ad  lib      NOTICE        RELEASE-NOTES  RUNNING.txt  upstream-HEYS  webapps
root@my-deploy-76895d9fdd-5fqr7:/usr/local/tomcat# cd webapps
root@my-deploy-76895d9fdd-5fqr7:/usr/local/tomcat/webapps# ls
examples-1.0.0  server-web-1.0.0.war
root@my-deploy-76895d9fdd-5fqr7:/usr/local/tomcat/webapps# exit
exit
ashili@AS50113:~$ kubectl port-forward svc/my-service 9080:9080
Unable to listen on port 9080: Listeners failed to create with the following errors: [unable to create listener: Error listen tcp4 127.0.0.1:9080: bind: add
ress already in use unable to create listener: Error listen tcp6 ::1:9080: bind: address already in use]
error: unable to listen on any of the requested ports: [[9080 9080]]
ashili@AS50113:~$ kubectl port-forward svc/my-service 9080:9080
Unable to listen on port 9080: Listeners failed to create with the following errors: [unable to create listener: Error listen tcp4 127.0.0.1:9080: bind: add
ress already in use unable to create listener: Error listen tcp6 ::1:9080: bind: address already in use]
```