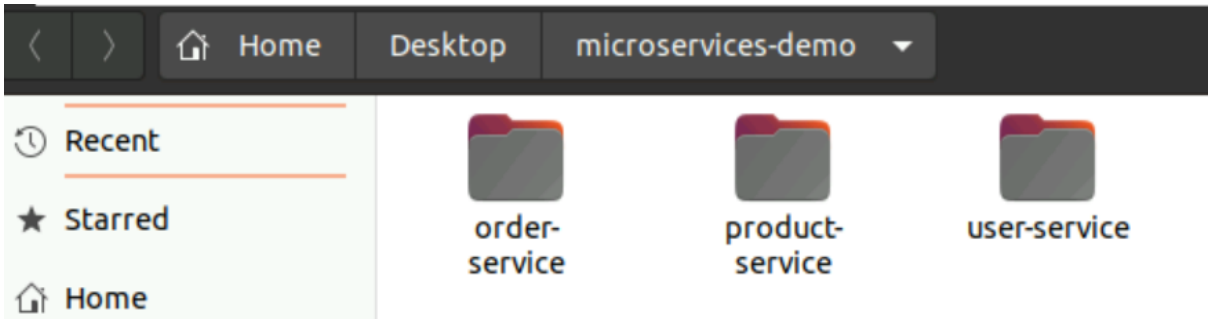
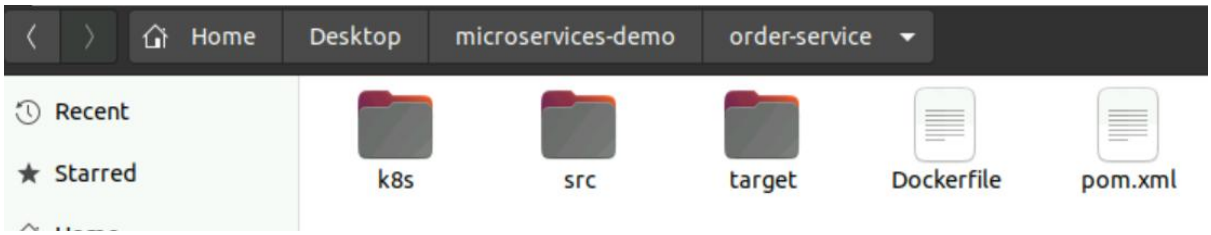
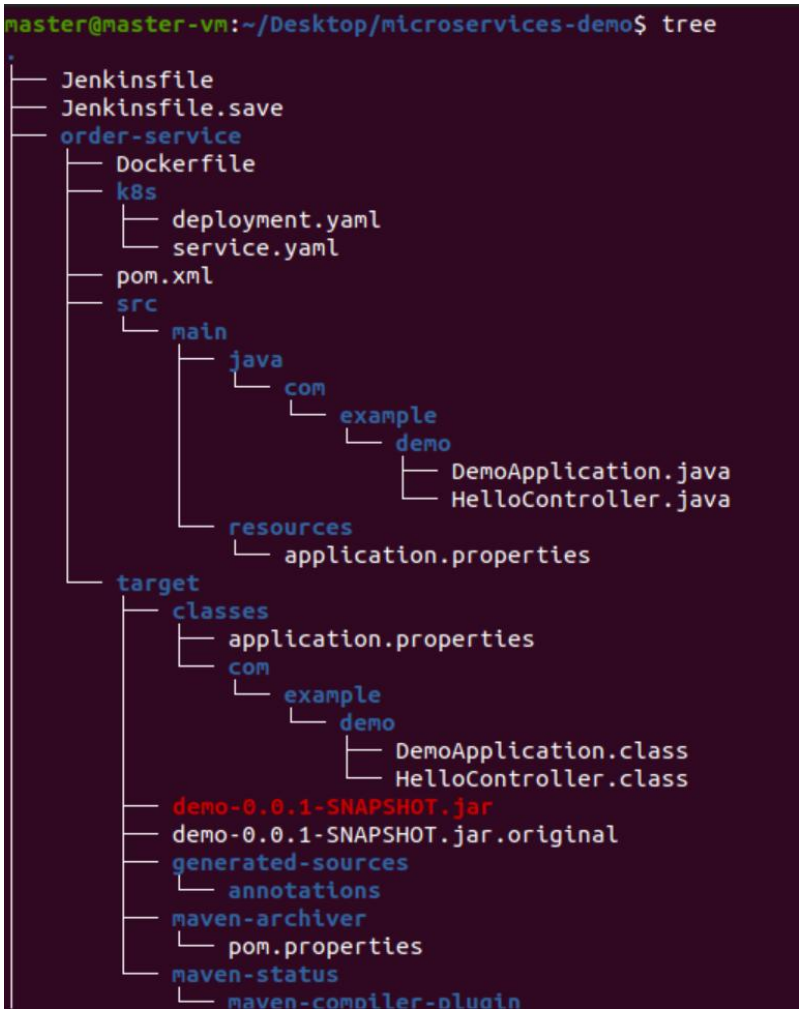
ABDUL SAMIM MONDAL Q1 SOLUTION

CREATE A JAVA MICROSERVICES



These files should be there inside each service





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Build the services

```
[INFO] ------------------------------------------------------------------------
master@master-vm:~/Desktop/microservices-demo/product-service$ cd ..
master@master-vm:~/Desktop/microservices-demo$ ls
order-service  product-service  user-service
master@master-vm:~/Desktop/microservices-demo$ cd order-service/
master@master-vm:~/Desktop/microservices-demo/order-service$ mvn clean package
[INFO] Scanning for projects...
[INFO]
[INFO] -------------------------< com.example:demo >-------------------------
[INFO] Building demo 0.0.1-SNAPSHOT
[INFO] --------------------------------[ jar ]---------------------------------
[INFO]
[INFO] --- maven-clean-plugin:3.2.0:clean (default-clean) @ demo ---
[INFO]
[INFO] --- maven-resources-plugin:3.2.0:resources (default-resources) @ demo ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] Using 'UTF-8' encoding to copy filtered properties files.
[INFO] Copying 1 resource
[INFO] Copying 0 resource
[INFO]
[INFO] --- maven-compiler-plugin:3.10.1:compile (default-compile) @ demo ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 2 source files to /home/master/Desktop/microservices-demo/order-service/target/classes
[INFO]
[INFO] --- maven-resources-plugin:3.2.0:testResources (default-testResources) @ demo ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] Using 'UTF-8' encoding to copy filtered properties files.
[INFO] skip non existing resourceDirectory /home/master/Desktop/microservices-demo/order-service/src/test/resources
[INFO]
[INFO] --- maven-compiler-plugin:3.10.1:testCompile (default-testCompile) @ demo ---
[INFO] No sources to compile
[INFO]
[INFO] --- maven-surefire-plugin:2.22.2:test (default-test) @ demo ---
[INFO] No tests to run.
[INFO]
[INFO] --- maven-jar-plugin:3.2.2:jar (default-jar) @ demo ---
```

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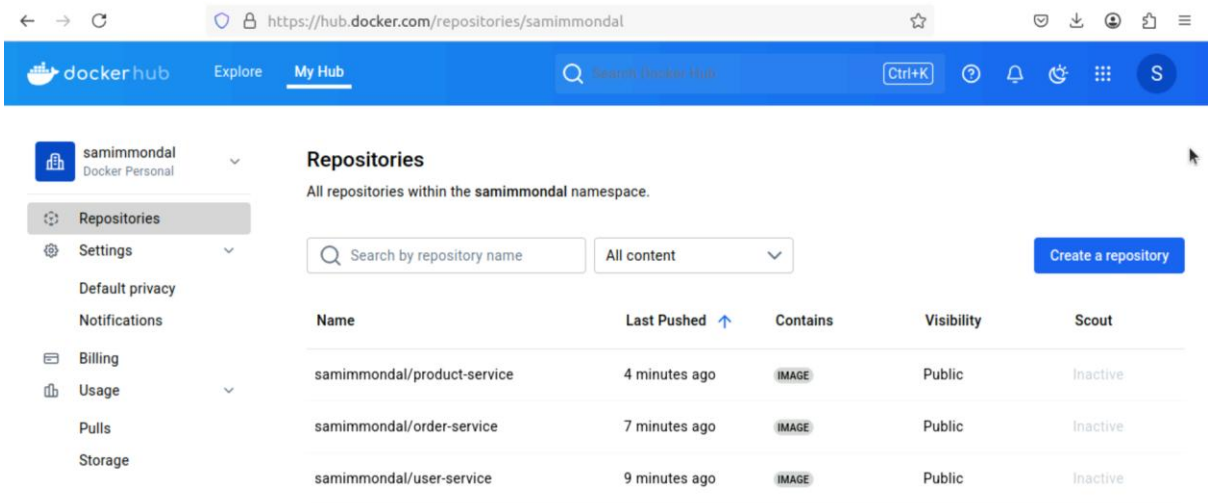
Build and push the images onto dockerhub

```
master@master-vm:~/Desktop/microservices-demo/order-service$ docker build -t samimmondal/order-service:1.0 .
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
            Install the buildx component to build images with BuildKit:
            https://docs.docker.com/go/buildx/

Sending build context to Docker daemon  17.72MB
Step 1/4 : FROM openjdk:11-jre-slim
 ---> 764a04af3eff
Step 2/4 : COPY target/demo-0.0.1-SNAPSHOT.jar /app.jar
 ---> b7c24a9e77af
Step 3/4 : EXPOSE 8080
 ---> Running in 2c3bc9c02b1f
 ---> Removed intermediate container 2c3bc9c02b1f
 ---> d3d01715ec95
Step 4/4 : ENTRYPOINT ["java", "-jar", "/app.jar"]
 ---> Running in d90224cacfa2
 ---> Removed intermediate container d90224cacfa2
 ---> 731da3dd7cf0
Successfully built 731da3dd7cf0
Successfully tagged samimmondal/order-service:1.0
master@master-vm:~/Desktop/microservices-demo/order-service$ docker push samimmondal/ordre-service:1.0
The push refers to repository [docker.io/samimmondal/ordre-service]
An image does not exist locally with the tag: samimmondal/ordre-service
master@master-vm:~/Desktop/microservices-demo/order-service$ docker push samimmondal/order-service:1.0
The push refers to repository [docker.io/samimmondal/order-service]
ae384afa8578: Pushing [========================>                          ]  9.241MB/17.69MB
d7802b8508af: Mounted from samimmondal/user-service
e3abdc2e9252: Mounted from samimmondal/user-service
fa8578: Pushed
eafe6e032dbd: Mounted from samimmondal/user-service
92a4e8a3140f: Mounted from samimmondal/user-service
1.0: digest: sha256:40ed0a364a99358ede319a25502b46024893b7a76b22979d8327137d3a7158c8 size: 1371
```

Dockerhub



Deploy each service to Kubernetes

```
master@master-vm:~/Desktop/microservices-demo$ cd user-service/k8s
master@master-vm:~/Desktop/microservices-demo/user-service/k8s$ sed -i 's|IMAGE_TAG|1.0|g' deployment.yaml
master@master-vm:~/Desktop/microservices-demo/user-service/k8s$ kubectl apply -f deployment.yaml
deployment.apps/user-service created
master@master-vm:~/Desktop/microservices-demo/user-service/k8s$ kubectl apply -f service.yaml
service/user-service created
master@master-vm:~/Desktop/microservices-demo/user-service/k8s$ cd ../..
```

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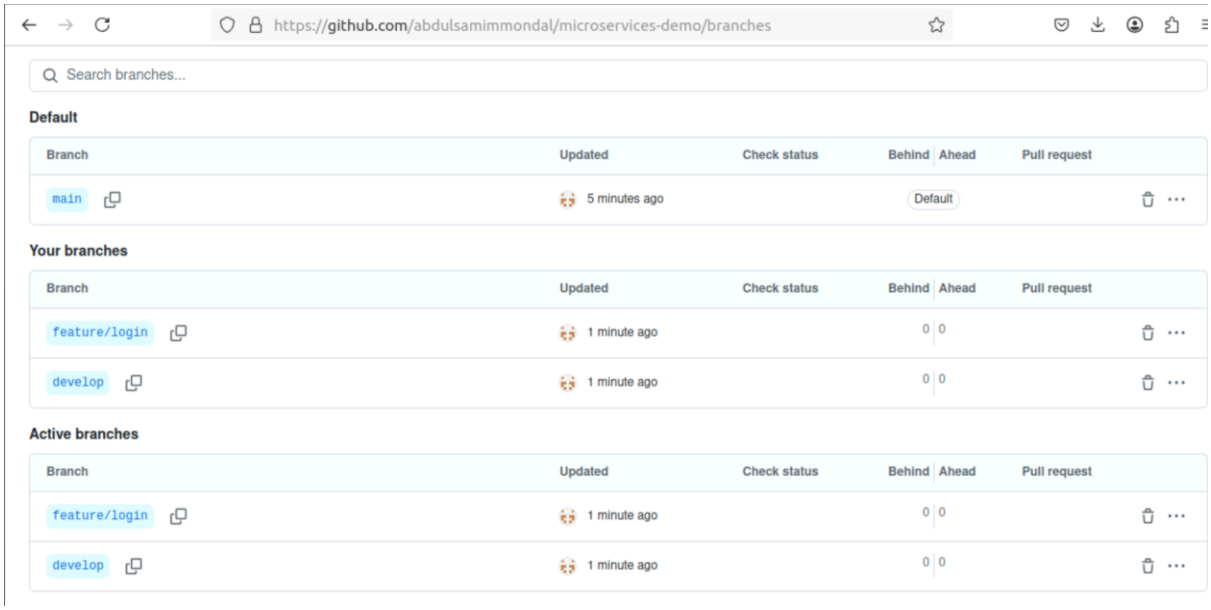
Check if pods are running

```
master@master-vm:~/Desktop/microservices-demo$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
order-service-cfbf54ccb-rxg7k       1/1     Running   0          70s
product-service-c96b5f5c7-lz6lk     1/1     Running   0          70s
user-service-6b6d7f6567-4v2v8       1/1     Running   0          69s
```

Check services are exposing ports correctly

```
master@master-vm:~/Desktop/microservices-demo$ kubectl get svc
NAME              TYPE        CLUSTER-IP       EXTERNAL-IP   PORT(S)        AGE
kubernetes        ClusterIP   10.96.0.1        <none>        443/TCP        47h
nginx-service     NodePort    10.105.157.108   <none>        80:32105/TCP   39h
order-service     ClusterIP   10.107.11.171    <none>        80/TCP         16m
product-service   ClusterIP   10.98.191.7      <none>        80/TCP         17m
user-service      ClusterIP   10.111.231.205   <none>        80/TCP         19m
```

Github repo



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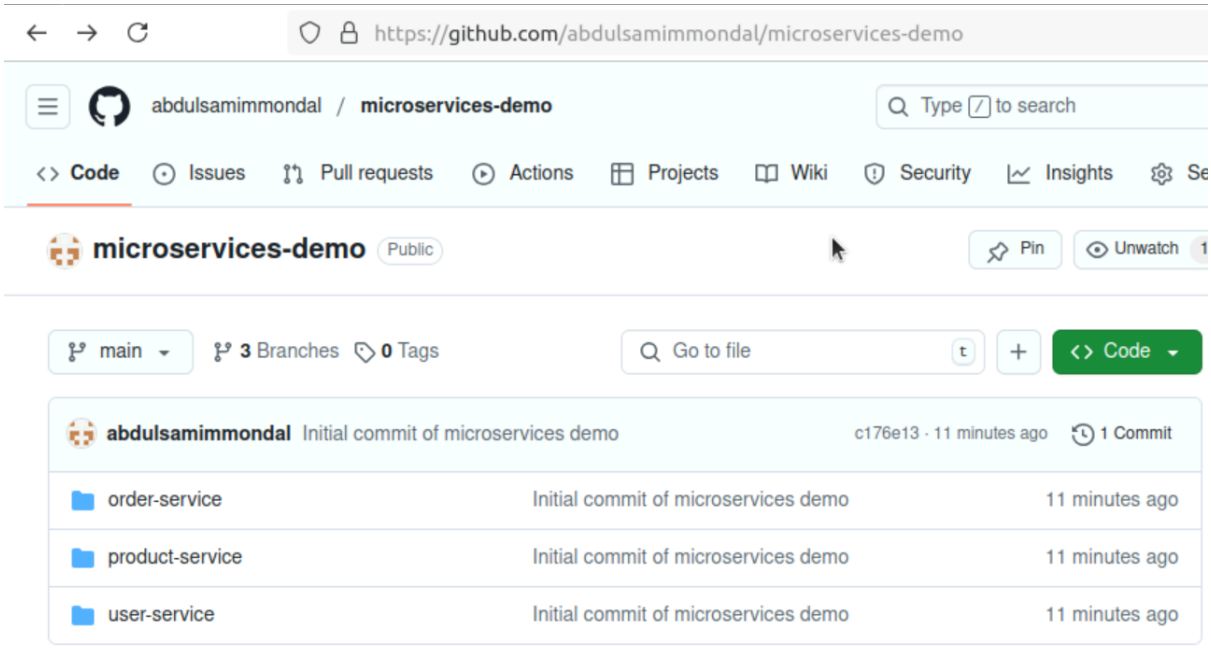
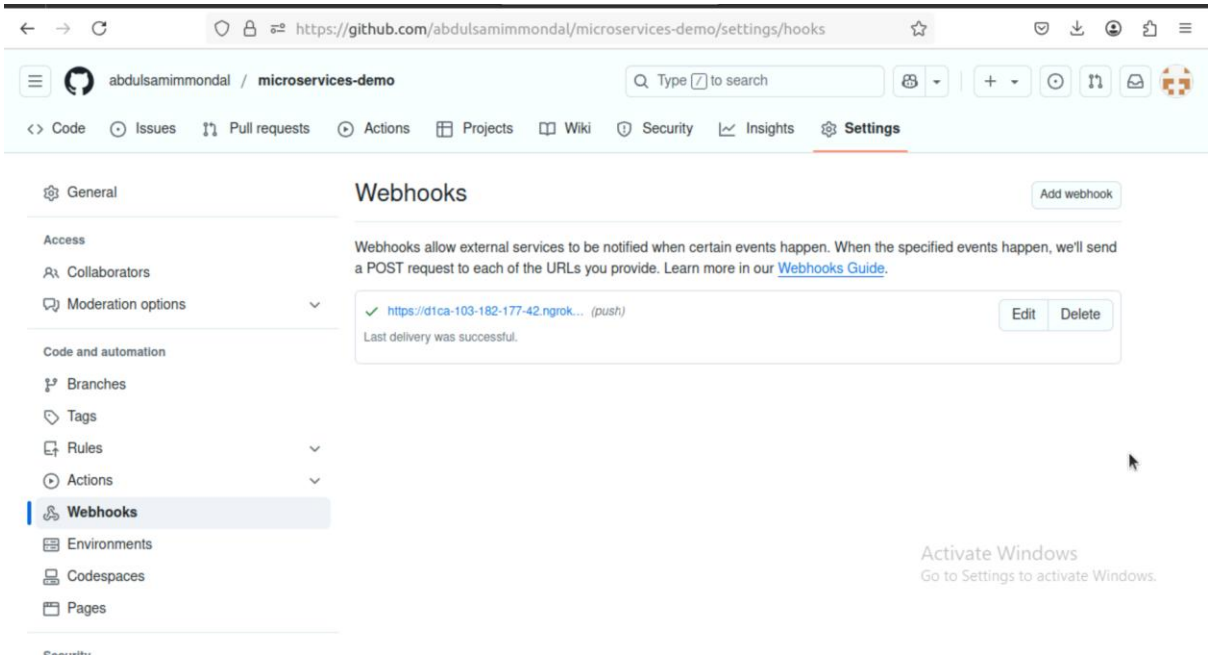


Webhook is up and running successfully



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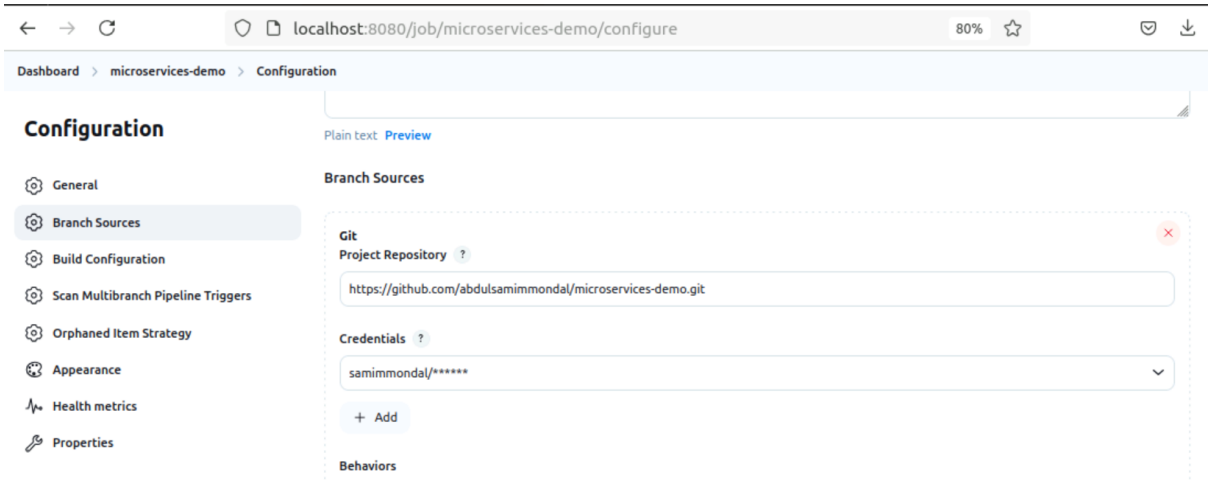
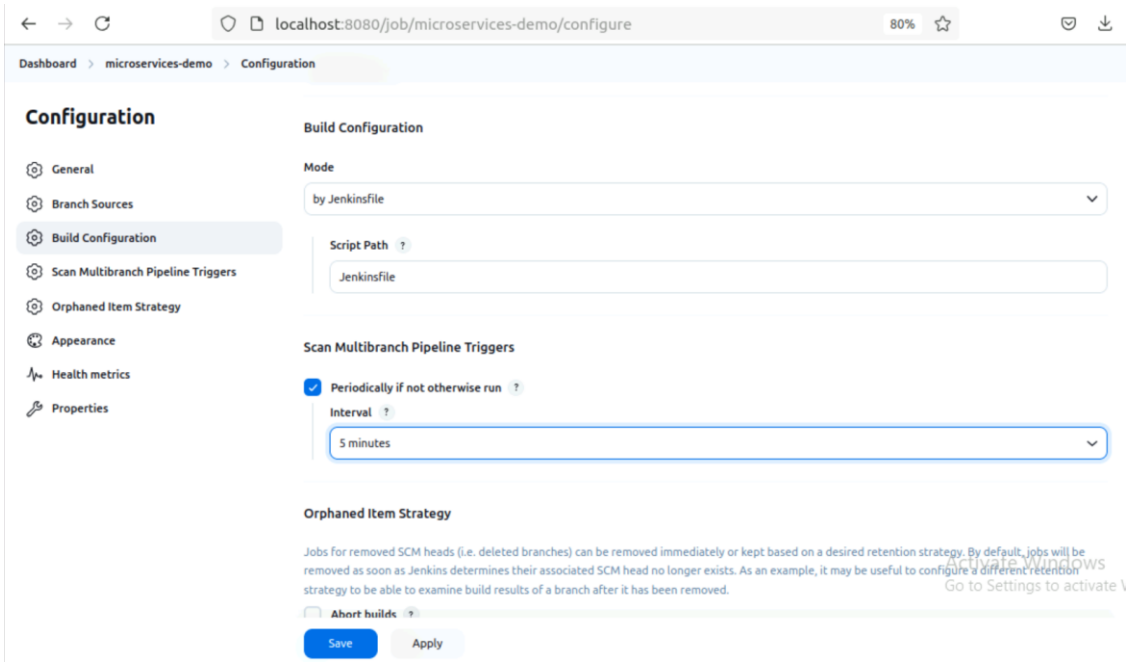
Using ngrok so github can reach local Jenkins

```
ngrok

❤️ ngrok? We're hiring https://ngrok.com/careers

Session Status                online
Account                       ABDUL SAMIM MONDAL (Plan: Free)
Version                       3.22.0
Region                        India (in)
Latency                       96ms
Web Interface                 http://127.0.0.1:4040
Forwarding                    https://d1ca-103-182-177-42.ngrok-free.app -> http://localhost:8080

Connections                   ttl     opn     rt1     rt5     p50     p90
                              1       0       0.00    0.00    31.27   31.27

HTTP Requests
-------------

15:41:54.614 IST POST /github-webhook/         200 OK
```

Jenkins pipeline configuration



In case webhooks does not work choose this option-



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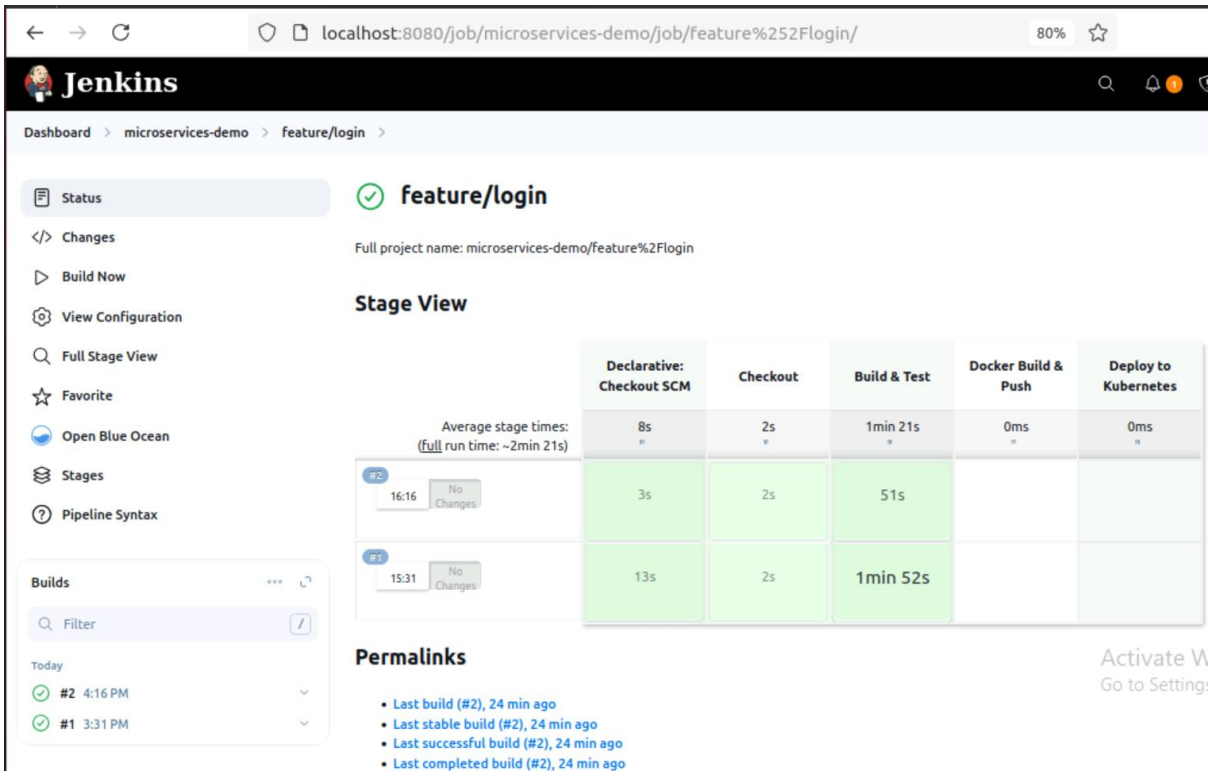
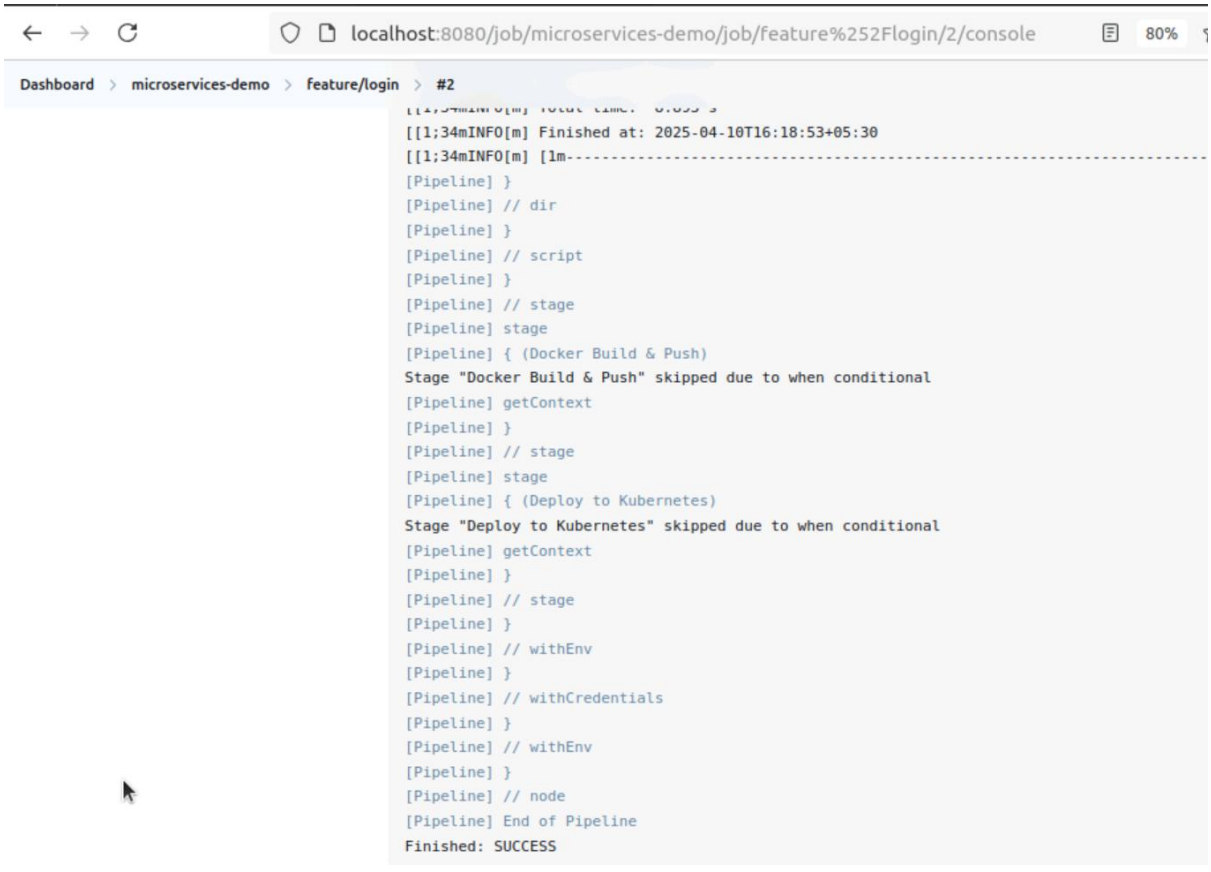
Jenkins output

Feature branch





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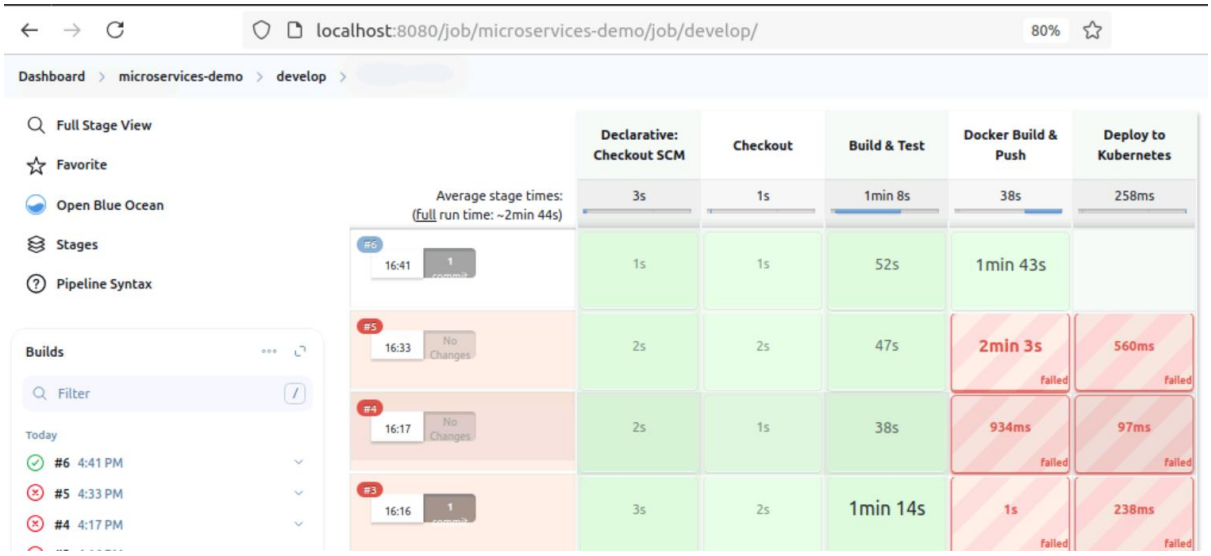
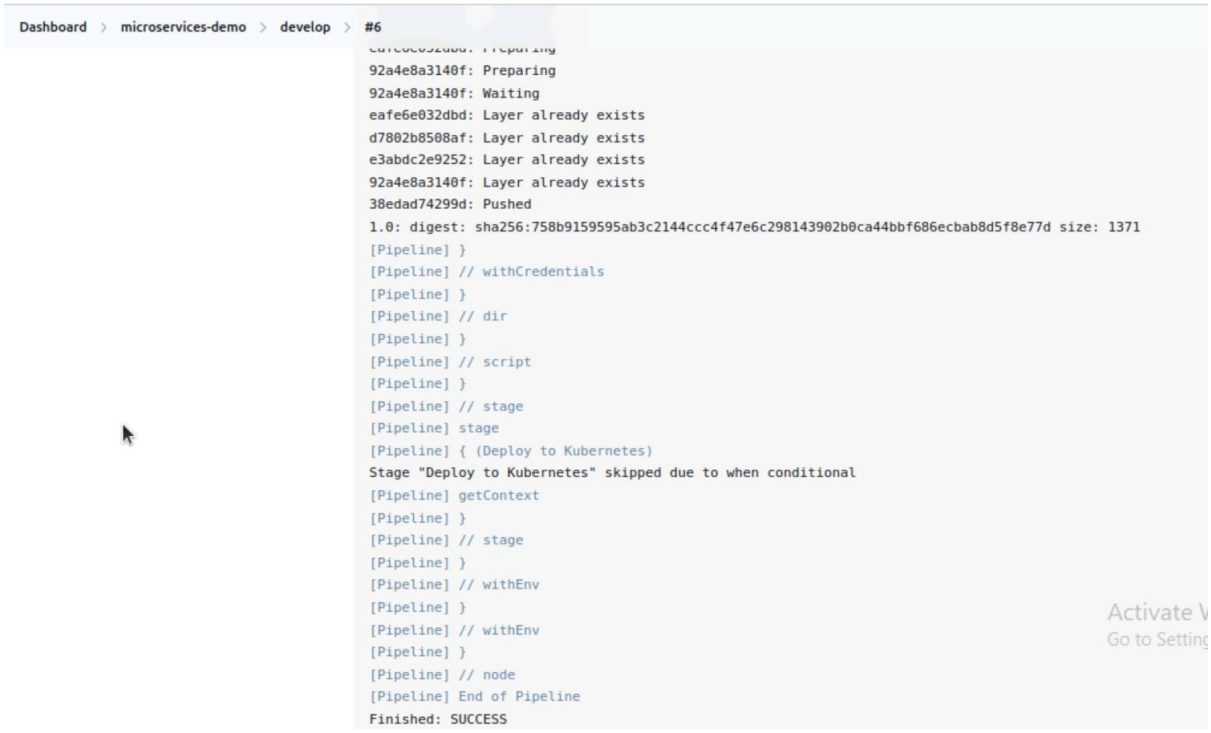
Develop branch





AS SOON AS COMMITS ARE MADE THE BUILD IN JENKINS STARTS AUTOMATICALLY!

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Main branch