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Cloud Native Operations Final Test

LZU1431263



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Revision History

S.No	Date	Change Description	Document Version	Prepared By /Modified By
1	09-05-2024	Final draft	PA1	ehanmdr
2				
3				

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1 Final Test Instructions

Power-up your Nocentino lab, 4 nodes preferably.

Read the instructions carefully.

This is an open book test. You can work as a team if you prefer, but all tasks and output must come from your own lab. There is no single Team leader in this assessment test. You are all team leaders.

Make sure you do not have any leftover resources from previous exercises. You will immediately **lose** points if you have ANY leftovers from previous work/exercises/fun things you tried on your own. Your lab MUST BE a plain vanilla cluster like you created in the first week of your Nocentino training.

If you are working as a team, everyone MUST provide insights and validate others during the assessment test (we are One Ericsson, so we all fail if the wrong solution is provided to the customer and an outage occurs).

Hint: you have noticed during your group exercises that there are different ways to approach a symptom and different ways to solve the problem(s). This could be something to consider today during your assessment test: divide and conquer if too many issues are found and time is ticking, or if you need to test different solutions to a problem.

Each question may have sub questions. (#1 #2 #3) Ensure you read **each** request, and ensure you provide answers for each of them.

Hint2: Port forwarding will help you here, whether it is for HTTP/GUI access, or to sftp things to/from your lab. Ensure you remember how to set-up or verify if it is set-up correctly.

Action: After reading and understanding the above, #1 immediately send an email to your instructor stating you are starting your assessment test, #2 you understood all the above points, and #3 in that same email, describe what is the dessert / sweets you like the most, share a picture of it if you'd like.

When all the above is done and understood, #4 start your final assessment test below 😊

Example of a good answer:

Question: What ip address the pod busybox1 has ?

```
(Martin Chabot - emachab) ericsson@my-ubuntu-1:~$ 
(Martin Chabot - emachab) ericsson@my-ubuntu-1:~$ 
(Martin Chabot - emachab) ericsson@my-ubuntu-1:~$ kubectl get pod/busybox1 -o wide
NAME      READY   STATUS    RESTARTS   AGE     IP           NODE   NOMINATED NODE   READINESS GATES
busybox1  1/1     Running   0          38s    172.16.160.246  my-ubuntu-2  <none>        <none>
(Martin Chabot - emachab) ericsson@my-ubuntu-1:~$
```



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2 Test Questions

Estimated hours: 3.0

2.1 Question 1

An Ericsson customer provided you multiple files. This customer is going through Kubernetes training and unfortunately, too many people are touching the scripts and breaking them.

The customer reached to Ericsson asking help from your team with finding the issues in each of their scripts/task and they are asking you to find resolutions.

The customer has a lab that looks very similar to your Nocentino lab.

Apply file1.yaml in your Nocentino lab. Ensure all the resources deployed stay up and healthy. Provide the output of 'kubectl get all -A'

Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

#2: Solution for customer few steps given in below:

- Firstly I checked server side and client side validation for file1.yaml file.
- Both validation was okay.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file1.yaml --dry-run=client
deployment.apps/hello-world1 created (dry run)
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file1.yaml --dry-run=server
deployment.apps/hello-world1 created (server dry run)
```

- Then deployed the file1.yaml file. Deployment.apps/hello-world1 successfully created.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file1.yaml
deployment.apps/hello-world1 created
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAME          READY   STATUS    RESTARTS   AGE
NAMESPACE     NAME
```

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#3: All the resources deployed stay up and healthy we confirm from below screen short.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAMESPACE     NAME                                         READY   STATUS    RESTARTS   AGE
default       pod/hello-world1-789db8d56-5qk8g           1/1     Running   0          19s
default       pod/hello-world1-789db8d56-7r46g           1/1     Running   0          19s
default       pod/hello-world1-789db8d56-9q4dv           1/1     Running   0          19s
default       pod/hello-world1-789db8d56-kkf6x           1/1     Running   0          19s
default       pod/hello-world1-789db8d56-mq8zs           1/1     Running   0          19s
default       pod/hello-world1-789db8d56-rhdh9           1/1     Running   0          19s
kube-system   pod/calico-kube-controllers-57758d645c-f787j   1/1     Running   11 (65m ago) 26d
kube-system   pod/calico-node-4d9fl                      1/1     Running   8 (63m ago) 26d
kube-system   pod/calico-node-4s9pj                      1/1     Running   9 (62m ago) 26d
kube-system   pod/calico-node-knscf                      1/1     Running   11 (65m ago) 26d
kube-system   pod/calico-node-sklsr                      1/1     Running   8 (61m ago) 26d
kube-system   pod/coredns-76f75df574-sxk6w              1/1     Running   11 (65m ago) 26d
kube-system   pod/coredns-76f75df574-vsv9g              1/1     Running   11 (65m ago) 26d
kube-system   pod/etcfd-my-ubuntu-1                     1/1     Running   11 (65m ago) 26d
kube-system   pod/kube-apiserver-my-ubuntu-1            1/1     Running   11 (65m ago) 26d
kube-system   pod/kube-controller-manager-my-ubuntu-1   1/1     Running   17 (65m ago) 26d
kube-system   pod/kube-proxy-7trb7                      1/1     Running   8 (63m ago) 26d
kube-system   pod/kube-proxy-cjlg2                      1/1     Running   9 (62m ago) 26d
kube-system   pod/kube-proxy-gpwgl                      1/1     Running   11 (65m ago) 26d
kube-system   pod/kube-proxy-tfb9                      1/1     Running   8 (61m ago) 26d
kube-system   pod/kube-scheduler-my-ubuntu-1            1/1     Running   17 (65m ago) 26d
kube-system   pod/metrics-server-84989b68d9-w9cvb        1/1     Running   0          21h

NAMESPACE     NAME                           TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)          AGE
default       service/hello-world-pod      ClusterIP   10.106.255.91  <none>        80/TCP          17d
default       service/kubernetes         ClusterIP   10.96.0.1       <none>        443/TCP         26d
kube-system   service/kube-dns           ClusterIP   10.96.0.10      <none>        53/UDP,53/TCP,9153/TCP 26d
kube-system   service/metrics-server    ClusterIP   10.98.119.0     <none>        443/TCP         2d15h

NAMESPACE     NAME                           DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR          AGE
kube-system   daemonset.apps/calico-node  4         4         4       4          4           4           kubernetes.io/os=linux 26d
kube-system   daemonset.apps/kube-proxy   4         4         4       4          4           4           kubernetes.io/os=linux 26d

NAMESPACE     NAME                           READY   UP-TO-DATE   AVAILABLE   AGE
default       deployment.apps/hello-world1  6/6     6           6          20s
kube-system   deployment.apps/calico-kube-controllers 1/1     1           1          26d
kube-system   deployment.apps/coredns       2/2     2           2          26d
kube-system   deployment.apps/metrics-server 1/1     1           1          2d15h

NAMESPACE     NAME                           DESIRED   CURRENT   READY   AGE
default       replicaset.apps/hello-world1-789db8d56  6         6           6          20s
kube-system   replicaset.apps/calico-kube-controllers-57758d645c 1         1           1          26d
kube-system   replicaset.apps/coredns-76f75df574    2         2           2          26d
kube-system   replicaset.apps/metrics-server-84989b68d9 1         1           1          2d15h
ericsson@my-ubuntu-1:~/content/course/Final_test$
```



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2.2 Question 2

Remove all the resources created by file1.yaml from your lab and apply file2.yaml.

Here screen shoot: all resource removed from file1.yaml.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl delete deployments hello-world1
deployment.apps "hello-world1" deleted
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAMESPACE     NAME                               READY   STATUS    RESTARTS   AGE
kube-system   pod/calico-kube-controllers-57758d645c-f787j   1/1    Running  11 (72m ago)  26d
kube-system   pod/calico-node-4d9fl      1/1    Running  8 (70m ago)  26d
kube-system   pod/calico-node-4s9pj      1/1    Running  9 (69m ago)  26d
kube-system   pod/calico-node-knsfc      1/1    Running  11 (72m ago)  26d
kube-system   pod/calico-node-sklsr      1/1    Running  8 (67m ago)  26d
kube-system   pod/coredns-76f75df574-sxk6w   1/1    Running  11 (72m ago)  26d
kube-system   pod/coredns-76f75df574-vsv9g   1/1    Running  11 (72m ago)  26d
kube-system   pod/etcd-my-ubuntu-1        1/1    Running  11 (72m ago)  26d
kube-system   pod/kube-apiserver-my-ubuntu-1  1/1    Running  11 (72m ago)  26d
kube-system   pod/kube-controller-manager-my-ubuntu-1 1/1    Running  17 (72m ago)  26d
kube-system   pod/kube-proxy-7trb7      1/1    Running  8 (70m ago)  26d
kube-system   pod/kube-proxy-cjlg2      1/1    Running  9 (69m ago)  26d
kube-system   pod/kube-proxy-gpwgl     1/1    Running  11 (72m ago)  26d
kube-system   pod/kube-proxy-t7fb9      1/1    Running  8 (67m ago)  26d
kube-system   pod/kube-scheduler-my-ubuntu-1  1/1    Running  17 (72m ago)  26d
kube-system   pod/metrics-server-84989b68d9-w9cvb  1/1    Running  0          21h

NAMESPACE     NAME           TYPE        CLUSTER-IP   EXTERNAL-IP  PORT(S)          AGE
default       service/hello-world-pod  ClusterIP  10.106.255.91 <none>        80/TCP           17d
default       service/kubernetes   ClusterIP  10.96.0.1    <none>        443/TCP          26d
kube-system   service/kube-dns    ClusterIP  10.96.0.10   <none>        53/UDP,53/TCP,9153/TCP 26d
kube-system   service/metrics-server ClusterIP  10.98.119.0  <none>        443/TCP          2d15h

NAMESPACE     NAME           DESIRED   CURRENT   UP-TO-DATE   AVAILABLE   NODE SELECTOR          AGE
kube-system   daemonset.apps/calico-node  4         4         4           4           kubernetes.io/os=linux 26d
kube-system   daemonset.apps/kube-proxy   4         4         4           4           kubernetes.io/os=linux 26d

NAMESPACE     NAME           READY   UP-TO-DATE   AVAILABLE   AGE
kube-system   deployment.apps/calico-kube-controllers  1/1     1           1           26d
kube-system   deployment.apps/coredns      2/2     2           2           26d
kube-system   deployment.apps/metrics-server  1/1     1           1           2d15h

NAMESPACE     NAME           DESIRED   CURRENT   READY   AGE
kube-system   replicaset.apps/calico-kube-controllers-57758d645c  1       1       1       26d
kube-system   replicaset.apps/coredns-76f75df574                2       2       2       26d
kube-system   replicaset.apps/metrics-server-84989b68d9            1       1       1       2d15h
ericsson@my-ubuntu-1:~/content/course/Final_test$
```



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Explain #1 what are the issues you see,

- Step1: Server-side validation checked.
- Step2: Client-side validation checked.
- Step3. Deploy the file2.yaml

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file2.yaml --dry-run=client
deployment.apps/hello-world2 created (dry run)
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file2.yaml --dry-run=server
deployment.apps/hello-world2 created (server dry run)
ericsson@my-ubuntu-1:~/content/course/Final_test$ █
```

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file2.yaml
deployment.apps/hello-world2 created
```

- I found under default namespace pod are CrashloopBackoff.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAMESPACE     NAME                               READY   STATUS        RESTARTS   AGE
default       pod/hello-world2-65cd7875c-6z8sd   0/1    CrashLoopBackoff   5 (58s ago)   3m54s
kube-system   pod/calico-kube-controllers-57758d645c-f787j   1/1    Running      11 (97m ago)   27d
kube-system   pod/calico-node-4d9fl            1/1    Running      8 (95m ago)   26d
kube-system   pod/calico-node-4s9pj            1/1    Running      9 (94m ago)   26d
kube-system   pod/calico-node-knscf           1/1    Running      11 (97m ago)   27d
kube-system   pod/calico-node-sklsr           1/1    Running      8 (93m ago)   26d
kube-system   pod/coredns-76f75df574-sxk6w     1/1    Running      11 (97m ago)   27d
kube-system   pod/coredns-76f75df574-vsv9g     1/1    Running      11 (97m ago)   27d
kube-system   pod/etcfd-my-ubuntu-1          1/1    Running      11 (97m ago)   27d
kube-system   pod/kube-apiserver-my-ubuntu-1    1/1    Running      11 (97m ago)   27d
kube-system   pod/kube-controller-manager-my-ubuntu-1 1/1    Running      17 (97m ago)   27d
kube-system   pod/kube-proxy-7trb7            1/1    Running      8 (95m ago)   26d
kube-system   pod/kube-proxy-cjlg2            1/1    Running      9 (94m ago)   26d
kube-system   pod/kube-proxy-gpwl             1/1    Running      11 (97m ago)   27d
kube-system   pod/kube-proxy-t7fb9            1/1    Running      8 (93m ago)   26d
kube-system   pod/kube-scheduler-my-ubuntu-1    1/1    Running      17 (97m ago)   27d
kube-system   pod/metrics-server-84989b68d9-w9cvb 1/1    Running      0           22h

NAMESPACE     NAME              TYPE        CLUSTER-IP   EXTERNAL-IP  PORT(S)          AGE
default       service/hello-world-pod  ClusterIP  10.106.255.91 <none>        80/TCP          17d
default       service/kubernetes   ClusterIP  10.96.0.1     <none>        443/TCP         27d
kube-system   service/kube-dns    ClusterIP  10.96.0.10    <none>        53/UDP,53/TCP,9153/TCP 27d
kube-system   service/metrics-server ClusterIP  10.98.119.0   <none>        443/TCP         2d15h

NAMESPACE     NAME           DESIRED  CURRENT  READY   UP-TO-DATE  AVAILABLE  NODE SELECTOR          AGE
kube-system  daemonset.apps/calico-node  4        4        4        4           4           kubernetes.io/os=linux  27d
kube-system  daemonset.apps/kube-proxy   4        4        4        4           4           kubernetes.io/os=linux  27d

NAMESPACE     NAME           READY  UP-TO-DATE  AVAILABLE  AGE
default       deployment.apps/hello-world2  0/1    1           0           3m55s
kube-system   deployment.apps/calico-kube-controllers  1/1    1           1           27d
kube-system   deployment.apps/coredns      2/2    2           2           27d
kube-system   deployment.apps/metrics-server 1/1    1           1           2d15h

NAMESPACE     NAME           DESIRED  CURRENT  READY   AGE
default       replicaset.apps/hello-world2-65cd7875c  1        1        0       3m55s
kube-system   replicaset.apps/calico-kube-controllers-57758d645c  1        1        1       27d
kube-system   replicaset.apps/coredns-76f75df574  2        2        2       27d
kube-system   replicaset.apps/metrics-server-84989b68d9  1        1        1       2d15h

ericsson@my-ubuntu-1:~/content/course/Final_test$ █
```

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- In the livenessProbe, you're using port: 8008, while in the readinessProbe, you're using port: 8008. It seems like there's a typo, and both should probably be port: 8080, matching the container port where the application is listening.
 - In the livenessProbe, you're using tcpSocket protocol, which checks whether the specified port on the container is accepting TCP connections. However, in the readinessProbe, you're using httpGet protocol, which performs an HTTP GET request to the specified path and port. These probes should ideally use the same protocol for consistency.

The screenshot shows a terminal window with the following deployment configuration:

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: hello-world2
spec:
  replicas: 1
  selector:
    matchLabels:
      app: hello-world2
  template:
    metadata:
      labels:
        app: hello-world2
        class: 2023-batch1
    spec:
      containers:
        - name: hello-world
          image: gcr.io/google-samples/hello-app:1.0
          ports:
            - containerPort: 8080
          livenessProbe:
            tcpSocket:
              port: 8080
            initialDelaySeconds: 5
            periodSeconds: 5
          readinessProbe:
            httpGet:
              path: /
              port: 8080
            initialDelaySeconds: 5
            periodSeconds: 5
```

Annotations are present in the code, specifically around the probe sections. The first two annotations highlight the `tcpSocket` section of the `livenessProbe`. The third annotation highlights the `initialDelaySeconds: 5` field under `livenessProbe`. The fourth annotation highlights the `port: 8080` field under `readinessProbe`. The fifth annotation highlights the `initialDelaySeconds: 5` field under `readinessProbe`.



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#2 what solutions you would propose to the customer and

- Solution is propose need to update the port 8008 to 8080 for livenessProbe and readinessProbe in file2.yaml.
- Re-deploy the file2.yaml again.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file2.yaml
deployment.apps/hello-world2 configured
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAMESPACE     NAME                                         READY   STATUS    RESTARTS   AGE
default        pod/hello-world2-65cd7875c-6z8sd          0/1    CrashLoopBackOff  9 (53s ago)  14m
default        pod/hello-world2-7759968cfc-dgv25         0/1    Running   0          9s
kube-system   pod/calico-kube-controllers-57758d645c-f787j  1/1    Running   11 (108m ago) 27d
kube-system   pod/calico-node-4d9fl                      1/1    Running   8 (106m ago) 26d
kube-system   pod/calico-node-4s9pj                      1/1    Running   9 (104m ago) 26d
kube-system   pod/calico-node-knscf                     1/1    Running   11 (108m ago) 27d
kube-system   pod/calico-node-sklsr                     1/1    Running   8 (103m ago) 26d
kube-system   pod/coredns-76f75df574-sxk6w              1/1    Running   11 (108m ago) 27d
kube-system   pod/coredns-76f75df574-vs9v9g            1/1    Running   11 (108m ago) 27d
kube-system   pod/etcd-my-ubuntu-1                       1/1    Running   11 (108m ago) 27d
kube-system   pod/kube-apiserver-my-ubuntu-1             1/1    Running   11 (108m ago) 27d
kube-system   pod/kube-controller-manager-my-ubuntu-1    1/1    Running   17 (108m ago) 27d
kube-system   pod/kube-proxy-7trb7                      1/1    Running   8 (106m ago) 26d
kube-system   pod/kube-proxy-cjlg2                      1/1    Running   9 (104m ago) 26d
kube-system   pod/kube-proxy-gpwl                      1/1    Running   11 (108m ago) 27d
kube-system   pod/kube-proxy-t7fb9                      1/1    Running   8 (103m ago) 26d
kube-system   pod/kube-scheduler-my-ubuntu-1             1/1    Running   17 (108m ago) 27d
kube-system   pod/metrics-server-84989b68d9-w9cvb       1/1    Running   0          22h

NAMESPACE     NAME                                         TYPE        CLUSTER-IP      EXTERNAL-IP    PORT(S)           AGE
default        service/hello-world-pod                ClusterIP   10.106.255.91  <none>          80/TCP           17d
default        service/kubernetes                  ClusterIP   10.96.0.1       <none>          443/TCP          27d
kube-system   service/kube-dns                    ClusterIP   10.96.0.10      <none>          53/UDP,53/TCP,9153/TCP 27d
kube-system   service/metrics-server              ClusterIP   10.98.119.0     <none>          443/TCP          2d15h

NAMESPACE     NAME                                         DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR   AGE
kube-system   daemonset.apps/calico-node            4         4         4         4         4           kubernetes.io/os=linux 27d
kube-system   daemonset.apps/kube-proxy              4         4         4         4         4           kubernetes.io/os=linux 27d

NAMESPACE     NAME                                         READY   UP-TO-DATE   AVAILABLE   AGE
default        deployment.apps/hello-world2          0/1    1           0           14m
kube-system   deployment.apps/calico-kube-controllers 1/1    1           1           27d
kube-system   deployment.apps/coredns                2/2    2           2           27d
kube-system   deployment.apps/metrics-server         1/1    1           1           2d15h

NAMESPACE     NAME                                         DESIRED   CURRENT   READY   AGE
default        replicaset.apps/hello-world2-65cd7875c  1         1         0         14m
default        replicaset.apps/hello-world2-7759968cfc  1         1         0         9s
kube-system   replicaset.apps/calico-kube-controllers-57758d645c  1         1         1         27d
kube-system   replicaset.apps/coredns-76f75df574      2         2         2         27d
kube-system   replicaset.apps/metrics-server-84989b68d9  1         1         1         2d15h
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAMESPACE     NAME                                         READY   STATUS    RESTARTS   AGE
default        pod/hello-world2-7759968cfc-dgv25         1/1    Running   0          22s
kube-system   pod/calico-kube-controllers-57758d645c-f787j  1/1    Running   11 (108m ago) 27d
kube-system   pod/calico-node-4d9fl                      1/1    Running   8 (106m ago) 26d
kube-system   pod/calico-node-4s9pj                      1/1    Running   9 (105m ago) 26d
kube-system   pod/calico-node-knscf                     1/1    Running   11 (108m ago) 27d
kube-system   pod/calico-node-sklsr                     1/1    Running   8 (103m ago) 26d
kube-system   pod/coredns-76f75df574-sxk6w              1/1    Running   11 (108m ago) 27d
kube-system   pod/coredns-76f75df574-vs9v9g            1/1    Running   11 (108m ago) 27d
kube-system   pod/etcd-my-ubuntu-1                       1/1    Running   11 (108m ago) 27d
kube-system   pod/kube-apiserver-my-ubuntu-1             1/1    Running   11 (108m ago) 27d
kube-system   pod/kube-controller-manager-my-ubuntu-1    1/1    Running   17 (108m ago) 27d
kube-system   pod/kube-proxy-7trb7                      1/1    Running   8 (106m ago) 26d
kube-system   pod/kube-proxy-cjlg2                      1/1    Running   9 (105m ago) 26d
kube-system   pod/kube-proxy-gpwl                      1/1    Running   11 (108m ago) 27d
kube-system   pod/kube-proxy-t7fb9                      1/1    Running   8 (103m ago) 26d
kube-system   pod/kube-scheduler-my-ubuntu-1             1/1    Running   17 (108m ago) 27d
kube-system   pod/metrics-server-84989b68d9-w9cvb       1/1    Running   0          22h

NAMESPACE     NAME                                         TYPE        CLUSTER-IP      EXTERNAL-IP    PORT(S)           AGE
default        service/hello-world-pod                ClusterIP   10.106.255.91  <none>          80/TCP           17d
default        service/kubernetes                  ClusterIP   10.96.0.1       <none>          443/TCP          27d
kube-system   service/kube-dns                    ClusterIP   10.96.0.10      <none>          53/UDP,53/TCP,9153/TCP 27d
kube-system   service/metrics-server              ClusterIP   10.98.119.0     <none>          443/TCP          2d15h

NAMESPACE     NAME                                         DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR   AGE
kube-system   daemonset.apps/calico-node            4         4         4         4         4           kubernetes.io/os=linux 27d
kube-system   daemonset.apps/kube-proxy              4         4         4         4         4           kubernetes.io/os=linux 27d

NAMESPACE     NAME                                         READY   UP-TO-DATE   AVAILABLE   AGE
default        deployment.apps/hello-world2          1/1    1           1           14m
kube-system   deployment.apps/calico-kube-controllers 1/1    1           1           27d
kube-system   deployment.apps/coredns                2/2    2           2           27d
kube-system   deployment.apps/metrics-server         1/1    1           1           2d15h
```

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#3 implement it in your lab to ensure the pods and containers stay up and healthy.

Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

- Here we can see pods and containers stay up and healthy.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAMESPACE     NAME                               READY   STATUS    RESTARTS   AGE
default       pod/hello-world2-7759968cf-cdgv25   1/1    Running   0          11m
kube-system   pod/calico-kube-controllers-57758d645c-f787j   1/1    Running   11 (119m ago)   27d
kube-system   pod/calico-node-4df1   1/1    Running   8 (117m ago)   26d
kube-system   pod/calico-node-4s9pj   1/1    Running   9 (116m ago)   26d
kube-system   pod/calico-node-knskf   1/1    Running   11 (119m ago)   27d
kube-system   pod/calico-node-sklsr   1/1    Running   8 (114m ago)   26d
kube-system   pod/coredns-76f75df574-sxk6w   1/1    Running   11 (119m ago)   27d
kube-system   pod/coredns-76f75df574-vs-v9g   1/1    Running   11 (119m ago)   27d
kube-system   pod/etcd-my-ubuntu-1   1/1    Running   11 (119m ago)   27d
kube-system   pod/kube-apiserver-my-ubuntu-1   1/1    Running   11 (119m ago)   27d
kube-system   pod/kube-controller-manager-my-ubuntu-1   1/1    Running   17 (119m ago)   27d
kube-system   pod/kube-proxy-7trb7   1/1    Running   8 (117m ago)   26d
kube-system   pod/kube-proxy-cjlg2   1/1    Running   9 (116m ago)   26d
kube-system   pod/kube-proxy-gpwl   1/1    Running   11 (119m ago)   27d
kube-system   pod/kube-proxy-t7fb9   1/1    Running   8 (114m ago)   26d
kube-system   pod/kube-scheduler-my-ubuntu-1   1/1    Running   17 (119m ago)   27d
kube-system   pod/metrics-server-84989b68d9-w9cvb   1/1    Running   0          22h

NAMESPACE     NAME           TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)          AGE
default       service/hello-world-pod   ClusterIP   10.106.255.91 <none>        80/TCP          17d
default       service/kubernetes   ClusterIP   10.96.0.1     <none>        443/TCP         27d
kube-system   service/kube-dns   ClusterIP   10.96.0.10    <none>        53/UDP,53/TCP,9153/TCP   27d
kube-system   service/metrics-server   ClusterIP   10.98.119.0   <none>        443/TCP         2d16h

NAMESPACE     NAME           DESIRED   CURRENT   READY     UP-TO-DATE   AVAILABLE   NODE SELECTOR          AGE
kube-system   daemonset.apps/calico-node   4         4         4         4           4           kubernetes.io/os=linux   27d
kube-system   daemonset.apps/kube-proxy   4         4         4         4           4           kubernetes.io/os=linux   27d

NAMESPACE     NAME           READY   UP-TO-DATE   AVAILABLE   AGE
default       deployment.apps/hello-world2   1/1     1           1           25m
kube-system   deployment.apps/calico-kube-controllers   1/1     1           1           27d
kube-system   deployment.apps/coredns   2/2     2           2           27d
kube-system   deployment.apps/metrics-server   1/1     1           1           2d16h

NAMESPACE     NAME           DESIRED   CURRENT   READY   AGE
default       replicaset.apps/hello-world2-65cd7875c   0         0         0         25m
default       replicaset.apps/hello-world2-7759968cf   1         1         1         11m
kube-system   replicaset.apps/calico-kube-controllers-57758d645c   1         1         1         27d
kube-system   replicaset.apps/coredns-76f75df574   2         2         2         27d
kube-system   replicaset.apps/metrics-server-84989b68d9   1         1         1         2d16h

ericsson@my-ubuntu-1:~/content/course/Final_test$
```



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2.3 Question 3

Apply file3.yaml in your Nocentino lab. The end goal of this file is to utilize the version 2.0 of the Hello-World image from Google. Explain #1 what are the issues you see, and #2 what solutions you would propose to the customer and #3 implement it in your lab to ensure the resources come up and stay healthy.

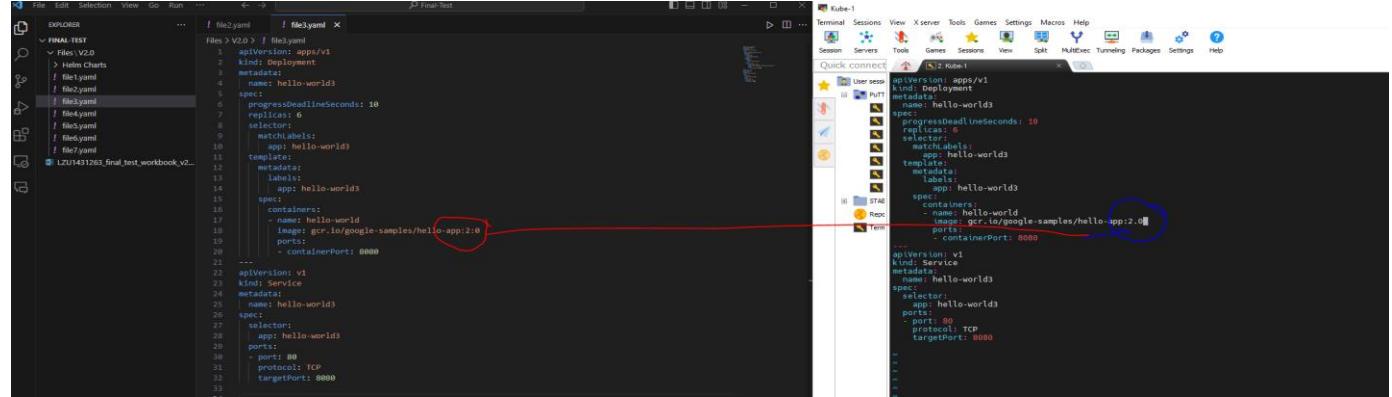
Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

#1 what are the issues you see

- After deploying the file3.yaml file I found InvalidImageName.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file3.yaml
deployment.apps/hello-world3 created
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAMESPACE     NAME                                         READY   STATUS    RESTARTS   AGE
default       pod/hello-world2-7759968cf-cdgv25           1/1    Running   0          14m
default       pod/hello-world3-845f4bc4fd-7t7cz            0/1    InvalidImageName 0          8s
default       pod/hello-world3-845f4bc4fd-7z9bd            0/1    InvalidImageName 0          8s
default       pod/hello-world3-845f4bc4fd-9txml           0/1    InvalidImageName 0          8s
default       pod/hello-world3-845f4bc4fd-f6llp            0/1    InvalidImageName 0          8s
default       pod/hello-world3-845f4bc4fd-szd9j            0/1    InvalidImageName 0          8s
default       pod/hello-world3-845f4bc4fd-wc925            0/1    InvalidImageName 0          8s
kube-system   pod/calico-kube-controllers-57758d645c-f787j  1/1    Running   11 (122m ago) 27d
kube-system   pod/calico-node-4dg9fl                      1/1    Running   8 (120m ago) 26d
kube-system   pod/calico-node-4s9pj                         1/1    Running   9 (119m ago) 26d
kube-system   pod/calico-node-knscf                        1/1    Running   11 (122m ago) 27d
kube-system   pod/calico-node-sklsr                        1/1    Running   8 (118m ago) 26d
kube-system   pod/coredns-76f75df574-sxk6w                1/1    Running   11 (122m ago) 27d
kube-system   pod/coredns-76f75df574-vs-v9g               1/1    Running   11 (122m ago) 27d
kube-system   pod/csi-my-ubuntu-1                          1/1    Running   11 (122m ago) 27d
kube-system   pod/kube-apiserver-my-ubuntu-1              1/1    Running   17 (122m ago) 27d
kube-system   pod/kube-controller-manager-my-ubuntu-1      1/1    Running   17 (122m ago) 27d
kube-system   pod/kube-proxy-7trb7                          1/1    Running   8 (120m ago) 26d
kube-system   pod/kube-proxy-cjlg2                         1/1    Running   9 (119m ago) 26d
kube-system   pod/kube-proxy-gpwgl                        1/1    Running   11 (122m ago) 27d
kube-system   pod/kube-proxy-t7fb9                         1/1    Running   8 (118m ago) 26d
kube-system   pod/kube-scheduler-my-ubuntu-1              1/1    Running   17 (122m ago) 27d
kube-system   pod/metrics-server-84989b68d9-w9cvb         1/1    Running   0          22h
NAME          NAME          TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)   AGE
default       service/hello-world-pod          ClusterIP   10.106.255.91 <none>        80/TCP    17d
default       service/hello-world3            ClusterIP   10.100.16.229 <none>        80/TCP    8s
default       service/kubernetes          ClusterIP   10.96.0.1     <none>        443/TCP   27d
kube-system   service/kube-dns             ClusterIP   10.96.0.10   <none>        53/UDP,53/TCP,9153/TCP 27d
kube-system   service/metrics-server        ClusterIP   10.98.119.0  <none>        443/TCP   2d16h
NAME          NAME          DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR   AGE
kube-system   daemonset.apps/calico-node  4         4         4         4         4          kubernetes.io/os=linux 27d
kube-system   daemonset.apps/kube-proxy   4         4         4         4         4          kubernetes.io/os=linux 27d
NAME          NAME          READY   UP-TO-DATE   AVAILABLE   AGE
default       deployment.apps/hello-world2  1/1    1          1          28m
default       deployment.apps/hello-world3  0/6    6          0          8s
kube-system   deployment.apps/calico-kube-controllers 1/1    1          1          27d
kube-system   deployment.apps/coredns       2/2    2          2          27d
kube-system   deployment.apps/metrics-server 1/1    1          1          2d16h
NAME          NAME          DESIRED   CURRENT   READY   AGE
default       replicaset.apps/hello-world2-65cd7875c  0         0         0         28m
default       replicaset.apps/hello-world2-7759968cf  1         1         1         14m
default       replicaset.apps/hello-world3-845f4bc4fd  6         6         0          8s
kube-system   replicaset.apps/calico-kube-controllers-57758d645c 1         1         1         27d
kube-system   replicaset.apps/coredns-76f75df574    2         2         2         27d
kube-system   replicaset.apps/metrics-server-84989b68d9 1         1         1         2d16h
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

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#2 what solutions you would propose to the customer:

- Solution is need to modify the file3.yaml with formatted (with dot) image (hello-app:2.0)
 - Re-deploy the file again.

```
ericsson@my-ubuntu-11:/content/course/Final_test$ kubectl apply -f file3.yaml
deployment.apps/hello-world3 unchanged
service/hello-world3 unchanged
```

#3 implement it in your lab to ensure the resources come up and stay healthy.

- Below screen short shown resources come up and stay healthy.

```

ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file3.yaml
deployment.apps/hello-world3 unchanged
service/hello-world3 unchanged
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAMESPACE          NAME                                         READY   STATUS    RESTARTS   AGE
default           pod/hello-world2-7759968fc-dgv2s   1/1     Running   0          21m
default           pod/hello-world3-5d745cccsd-cj7xf   1/1     Running   0          22s
default           pod/hello-world3-5d745cccsd-gc7qh   1/1     Running   0          12s
default           pod/hello-world3-5d745cccsd-gcpxq   1/1     Running   0          14s
default           pod/hello-world3-5d745cccsd-hg7qk   1/1     Running   0          20s
default           pod/hello-world3-5d745cccsd-v822j   1/1     Running   0          10s
default           pod/hello-world3-5d745cccsd-wdx4p   1/1     Running   0          22s
default           pod/hello-world3-845f4bc4fd-7z9bd   0/1    Terminating   0          7m27s
default           pod/hello-world3-845f4bc4fd-9txml   0/1    Terminating   0          7m27s
kube-system       pod/calico-kube-controllers-57758d645c-f787j   1/1     Running   11 (129m ago) 27d
kube-system       pod/calico-node-40df1   1/1     Running   8 (127m ago) 26d
kube-system       pod/calico-node-4s9ppj   1/1     Running   9 (126m ago) 26d
kube-system       pod/calico-node-knscf   1/1     Running   11 (129m ago) 27d
kube-system       pod/calico-node-skx6w   1/1     Running   8 (125m ago) 26d
kube-system       pod/coredns-76f75df574-csx6w   1/1     Running   11 (129m ago) 27d
kube-system       pod/coredns-76f75df574-vsv9g   1/1     Running   11 (129m ago) 27d
kube-system       pod/etcfd-my-ubuntu-1   1/1     Running   11 (129m ago) 27d
kube-system       pod/kube-apiserver-my-ubuntu-1   1/1     Running   11 (129m ago) 27d
kube-system       pod/kube-controller-manager-my-ubuntu-1   1/1     Running   17 (129m ago) 27d
kube-system       pod/kube-proxy-7trb7   1/1     Running   8 (127m ago) 26d
kube-system       pod/kube-proxy-cilq2   1/1     Running   9 (126m ago) 26d
kube-system       pod/kube-proxy-gpwgl   1/1     Running   11 (129m ago) 27d
kube-system       pod/kube-proxy-t7fb9   1/1     Running   8 (125m ago) 26d
kube-system       pod/metrics-server-my-ubuntu-1   1/1     Running   17 (129m ago) 27d
kube-system       pod/metrics-server-84989b68d9-w9cvb   1/1     Running   0          22h

NAMESPACE          NAME                                         TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)          AGE
default           service/hello-world-pod   ClusterIP   10.96.0.255.91 <none>        80/TCP          17d
default           service/hello-world3   ClusterIP   10.96.0.10.229 <none>        80/TCP          7m27s
kubernetes        service/kubernetes   ClusterIP   10.96.0.1       <none>        443/TCP         27d
kube-system       service/kube-dns   ClusterIP   10.96.0.10       <none>        53/UDP,53/TCP,9153/TCP 27d
kube-system       service/metrics-server   ClusterIP   10.96.119.0      <none>        443/TCP         2d16h

NAMESPACE          NAME                                         DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR          AGE
kube-system       daemonset.apps/calico-node   4         4         4         4         4           kubernetes.io/os=linux 27d
kube-system       daemonset.apps/kube-proxy   4         4         4         4         4           kubernetes.io/os=linux 27d

NAMESPACE          NAME                                         READY   UP-TO-DATE   AVAILABLE   AGE
default           deployment.apps/hello-world2   1/1     1           1           36m
default           deployment.apps/hello-world3   6/6     6           6           7m28s
kube-system       deployment.apps/calico-kube-controllers   1/1     1           1           27d
kube-system       deployment.apps/coredns   2/2     2           2           27d
kube-system       deployment.apps/metrics-server   1/1     1           1           2d16h

NAMESPACE          NAME                                         DESIRED   CURRENT   READY   AGE
default           replicaset.apps/hello-world2-65cd7875c   0         0         0         36m
default           replicaset.apps/hello-world3-5d745cccsd   1         1         1         21m
default           replicaset.apps/hello-world3-5d745cccsd-6   6         6         6         23s
default           replicaset.apps/hello-world3-845f4bc4fd   0         0         0         7m28s
kube-system       replicaset.apps/calico-kube-controllers-57758d645c   1         1         1         27d
kube-system       replicaset.apps/calico-node-76f75df574   2         2         2         27d
kube-system       replicaset.apps/metrics-server-84989b68d9   1         1         1         2d16h

ericsson@my-ubuntu-1:~/content/course/Final_test$ █

```

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2.4 Question 4

Using kubectl commands only (imperatively), downgrade the deployment used in previous question to the version 1.0 from the same Google repository. Provide the command used and a text output or screen capture showing the successful downgrade of the image.

Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

- Here is the current version.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl describe pod hello-world3 | grep -e image
Normal Pulling 1m kubelet      Pulling image "gcr.io/google-samples/hello-app:2.0"
Normal Pulled 1m kubelet      Successfully pulled image "gcr.io/google-samples/hello-app:2.0" in 3.235s (3.235s including waiting)
Normal Pulled 1m kubelet      Container image "gcr.io/google-samples/hello-app:2.0" already present on machine
Normal Pulled 1m kubelet      Container image "gcr.io/google-samples/hello-app:2.0" already present on machine
Normal Pulling 1m kubelet      Pulling image "gcr.io/google-samples/hello-app:2.0"
Normal Pulled 1m kubelet      Successfully pulled image "gcr.io/google-samples/hello-app:2.0" in 5.117s (5.117s including waiting)
Normal Pulled 1m kubelet      Container image "gcr.io/google-samples/hello-app:2.0" already present on machine
Normal Pulling 1m kubelet      Pulling image "gcr.io/google-samples/hello-app:2.0"
Normal Pulled 1m kubelet      Successfully pulled image "gcr.io/google-samples/hello-app:2.0" in 2.947s (2.948s including waiting)
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

- In this screen capture including commands, imperatively successfully downgrade of the image.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl set image deployments/hello-world3 hello-world=gcr.io/google-samples/hello-app:1.0
deployment.apps/hello-world3 image updated
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl describe pod hello-world3 | grep -e image
Normal Pulling 13m kubelet      Pulling image "gcr.io/google-samples/hello-app:2.0"
Normal Pulled 13m kubelet      Successfully pulled image "gcr.io/google-samples/hello-app:2.0" in 3.235s (3.235s including waiting)
Normal Pulled 12m kubelet      Container image "gcr.io/google-samples/hello-app:2.0" already present on machine
Normal Pulling 13m kubelet      Pulling image "gcr.io/google-samples/hello-app:2.0"
Normal Pulled 13m kubelet      Successfully pulled image "gcr.io/google-samples/hello-app:2.0" in 5.117s (5.117s including waiting)
Normal Pulled 12m kubelet      Container image "gcr.io/google-samples/hello-app:2.0" already present on machine
Normal Pulling 13m kubelet      Pulling image "gcr.io/google-samples/hello-app:2.0"
Normal Pulled 13m kubelet      Successfully pulled image "gcr.io/google-samples/hello-app:2.0" in 2.947s (2.948s including waiting)
Normal Pulled 7s kubelet       Container image "gcr.io/google-samples/hello-app:1.0" already present on machine
Normal Pulled 8s kubelet       Container image "gcr.io/google-samples/hello-app:1.0" already present on machine
Normal Pulled 7s kubelet       Container image "gcr.io/google-samples/hello-app:1.0" already present on machine
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl describe pod hello-world3 | grep -e image
Normal Pulled 10s kubelet      Container image "gcr.io/google-samples/hello-app:1.0" already present on machine
Normal Pulled 21s kubelet      Container image "gcr.io/google-samples/hello-app:1.0" already present on machine
Normal Pulled 10s kubelet      Container image "gcr.io/google-samples/hello-app:1.0" already present on machine
Normal Pulled 22s kubelet      Container image "gcr.io/google-samples/hello-app:1.0" already present on machine
Normal Pulled 11s kubelet      Container image "gcr.io/google-samples/hello-app:1.0" already present on machine
Normal Pulled 21s kubelet      Container image "gcr.io/google-samples/hello-app:1.0" already present on machine
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

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2.5 Question 5

Apply file4.yaml in your Nocentino lab. The end goal of this file is to deploy the Hello-World image in the specified namespace found in the yaml file. Explain #1 what are the issues that you see, and #2 what solution you would propose to the customer and #3 implement it in your lab to ensure the resources come up and stay healthy in the correct namespace. #4 Ensure you show all the namespaces in your answers and provide the output of 'kubectl get all -A'

Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

#1 what are the issues that you see

- Here file4.yaml is deployed.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file4.yaml
namespace/batch1 created
deployment.apps/hello-world4 created
```

- Here no resources finding under the batch1 namespace.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -n batch1
No resources found in batch1 namespace.
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get namespaces
NAME      STATUS   AGE
batch1    Active   8m42s
default   Active   27d
kube-node-lease  Active   27d
kube-public  Active   27d
kube-system  Active   27d
ericsson@my-ubuntu-1:~/content/course/Final_test$
```



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```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all
NAME                                         READY   STATUS    RESTARTS   AGE
pod/hello-world2-7759968cf-dgv25          1/1    Running   0          48m
pod/hello-world3-7d79c8647c-cpmssn        1/1    Running   0          13m
pod/hello-world3-7d79c8647c-d7qsj         1/1    Running   0          13m
pod/hello-world3-7d79c8647c-fjfmx         1/1    Running   0          13m
pod/hello-world3-7d79c8647c-lqkw2         1/1    Running   0          13m
pod/hello-world3-7d79c8647c-wztl9g        1/1    Running   0          13m
pod/hello-world3-7d79c8647c-zlnt2         1/1    Running   0          13m
pod/hello-world4-6b8888db78-hxg5l         1/1    Running   0          5m1s
pod/hello-world4-6b8888db78-qvv2m         1/1    Running   0          5m1s
pod/hello-world4-6b8888db78-s9lm6         1/1    Running   0          5m1s
pod/hello-world4-6b8888db78-td76q         1/1    Running   0          5m1s

NAME           TYPE        CLUSTER-IP      EXTERNAL-IP    PORT(S)    AGE
service/hello-world-pod  ClusterIP   10.106.255.91  <none>       80/TCP     17d
service/hello-world3   ClusterIP   10.100.16.229   <none>       80/TCP     33m
service/kubernetes    ClusterIP   10.96.0.1      <none>       443/TCP    27d

NAME           READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/hello-world2  1/1     1           1          62m
deployment.apps/hello-world3  6/6     6           6          33m
deployment.apps/hello-world4  4/4     4           4          5m1s

NAME           DESIRED  CURRENT   READY   AGE
replicaset.apps/hello-world2-65cd7875c  0        0        0      62m
replicaset.apps/hello-world2-7759968cf  1        1        1      48m
replicaset.apps/hello-world3-5d745ccc5d  0        0        0      26m
replicaset.apps/hello-world3-7d79c8647c  6        6        6      13m
replicaset.apps/hello-world3-845f4bc4fd  0        0        0      33m
replicaset.apps/hello-world4-6b8888db78  4        4        4      5m1s
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

#2 what solution you would propose to the customer

- It was only created under default namespace.
- Here need apply the file4.yaml file "-n batch" the resource will move to the batch1 namespace.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file4.yaml -n batch1
namespace/batch1 unchanged
```

#3 implement it in your lab to ensure the resources come up and stay healthy in the correct namespace.

- Resources come up and stay healthy in the correct namespace.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -n batch1
NAME                                         READY   STATUS    RESTARTS   AGE
pod/hello-world4-6b8888db78-45hzl          1/1    Running   0          3m53s
pod/hello-world4-6b8888db78-dhgrj          1/1    Running   0          3m53s
pod/hello-world4-6b8888db78-dtn46          1/1    Running   0          3m53s
pod/hello-world4-6b8888db78-zlsvt          1/1    Running   0          3m53s

NAME           READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/hello-world4  4/4     4           4          3m53s

NAME           DESIRED  CURRENT   READY   AGE
replicaset.apps/hello-world4-6b8888db78  4        4        4      3m53s
ericsson@my-ubuntu-1:~/content/course/Final_test$
```



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#4 Ensure you show all the namespaces in your answers and provide the output of 'kubectl get all -A'

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAMESPACE     NAME                                         READY   STATUS    RESTARTS   AGE
batch1        pod/hello-world4-6b8888db78-4hzl           1/1     Running   0          6m18s
batch1        pod/hello-world4-6b8888db78-dhgrj          1/1     Running   0          6m18s
batch1        pod/hello-world4-6b8888db78-dtn46          1/1     Running   0          6m18s
batch1        pod/hello-world4-6b8888db78-zlsvt          1/1     Running   0          6m18s
default       pod/hello-world2-7759968cfc-dgv25         1/1     Running   0          60m
default       pod/hello-world3-7d79c8647c-cpmns          1/1     Running   0          25m
default       pod/hello-world3-7d79c8647c-d7qsj          1/1     Running   0          25m
default       pod/hello-world3-7d79c8647c-fjfmx          1/1     Running   0          25m
default       pod/hello-world3-7d79c8647c-lqkw2          1/1     Running   0          25m
default       pod/hello-world3-7d79c8647c-wzl5g          1/1     Running   0          25m
default       pod/hello-world3-7d79c8647c-zlnt2          1/1     Running   0          25m
default       pod/hello-world4-6b8888db78-hxg5l          1/1     Running   0          16m
default       pod/hello-world4-6b8888db78-qvw2m          1/1     Running   0          16m
default       pod/hello-world4-6b8888db78-s9lm6          1/1     Running   0          16m
default       pod/hello-world4-6b8888db78-td76q          1/1     Running   0          16m
kube-system   pod/calico-kube-controllers-57758d645c-f787j 1/1     Running   11 (168m ago) 27d
kube-system   pod/calico-node-4d9fl                      1/1     Running   8 (166m ago)  27d
kube-system   pod/calico-node-4s9pj                      1/1     Running   9 (164m ago)  27d
kube-system   pod/calico-node-knscf                     1/1     Running   11 (168m ago) 27d
kube-system   pod/calico-node-sklsr                     1/1     Running   8 (163m ago)  27d
kube-system   pod/coredns-76f75df574-sxk6w            1/1     Running   11 (168m ago) 27d
kube-system   pod/coredns-76f75df574-vsv9g            1/1     Running   11 (168m ago) 27d
kube-system   pod/etcd-my-ubuntu-1                      1/1     Running   11 (168m ago) 27d
kube-system   pod/kube-apiserver-my-ubuntu-1          1/1     Running   11 (168m ago) 27d
kube-system   pod/kube-controller-manager-my-ubuntu-1  1/1     Running   17 (168m ago) 27d
kube-system   pod/kube-proxy-7trb7                      1/1     Running   8 (166m ago)  27d
kube-system   pod/kube-proxy-cjlg2                      1/1     Running   9 (164m ago)  27d
kube-system   pod/kube-proxy-gpwl                      1/1     Running   11 (168m ago) 27d
kube-system   pod/kube-proxy-t7fb9                      1/1     Running   8 (163m ago)  27d
kube-system   pod/kube-scheduler-my-ubuntu-1          1/1     Running   17 (168m ago) 27d
kube-system   pod/metrics-server-84989b68d9-w9cvb      1/1     Running   0          23h
NAME          SERVICE/NAME          TYPE     CLUSTER-IP   EXTERNAL-IP  PORT(S)          AGE
default       service/hello-world-pod  ClusterIP  10.106.255.91 <none>        80/TCP           17d
default       service/hello-world3   ClusterIP  10.100.16.229  <none>        80/TCP           45m
default       service/kubernetes   ClusterIP  10.96.0.1     <none>        443/TCP          27d
kube-system   service/kube-dns    ClusterIP  10.96.0.10   <none>        53/UDP,53/TCP,9153/TCP 27d
kube-system   service/metrics-server ClusterIP  10.98.119.0  <none>        443/TCP          2d16h
NAME          POD/NAME          DESIRED  CURRENT  READY   UP-TO-DATE  AVAILABLE  NODE SELECTOR          AGE
kube-system  daemonset.apps/calico-node  4        4        4        4          4          kubernetes.io/os=linux 27d
kube-system  daemonset.apps/kube-proxy   4        4        4        4          4          kubernetes.io/os=linux 27d
NAME          DEPLOYMENT/NAME          READY  UP-TO-DATE  AVAILABLE  AGE
batch1        deployment.apps/hello-world4  4/4    4          4          6m19s
default       deployment.apps/hello-world2  1/1    1          1          74m
default       deployment.apps/hello-world3  6/6    6          6          45m
default       deployment.apps/hello-world4  4/4    4          4          16m
kube-system   deployment.apps/calico-kube-controllers 1/1    1          1          27d
kube-system   deployment.apps/coredns    2/2    2          2          27d
kube-system   deployment.apps/metrics-server 1/1    1          1          2d16h
NAME          DEPLOYMENT/NAME          DESIRED  CURRENT  READY   AGE
batch1        replicaset.apps/hello-world4-6b8888db78  4        4        4          6m19s
default       replicaset.apps/hello-world2-65cd7875c  0        0        0          74m
default       replicaset.apps/hello-world2-7759968cfc  1        1        1          60m
default       replicaset.apps/hello-world3-5d745ccc5d  0        0        0          38m
default       replicaset.apps/hello-world3-7d79c8647c  6        6        6          25m
default       replicaset.apps/hello-world3-845f4bc4fd  0        0        0          45m
default       replicaset.apps/hello-world4-6b8888db78  4        4        4          16m
kube-system   replicaset.apps/calico-kube-controllers-57758d645c 1        1        1          27d
kube-system   replicaset.apps/coredns-76f75df574  2        2        2          27d
kube-system   replicaset.apps/metrics-server-84989b68d9  1        1        1          2d16h
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

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2.6 Question 6

Apply file5.yaml in your Nocentino lab. The end goal of this file is to deploy the Hello-World image on one specific node. Explain #1 what are the issues you see, and #2 what solution you would propose to the customer and #3 implement it in your lab to ensure the resources come up on one node in your lab. NOTE: if you find a solution that allows you to decide which node you will deploy the file, ensure that not everyone in your team will chose the same node. That will require collaboration and coordination.

Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

#1: what are the issues you see

- Here I observed pod is under pending state!

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file5.yaml
deployment.apps/hello-world5 created
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get pods -o wide
NAME          READY   STATUS    RESTARTS   AGE     IP           NODE      NOMINATED NODE   READINESS   GA
TES
hello-world2-7759968cf-cdg25  1/1    Running   0          3h3m   192.168.247.159  my-ubuntu-4  <none>        <none>
hello-world3-7d79c8647c-cpm5n  1/1    Running   0          148m   192.168.160.196  my-ubuntu-2  <none>        <none>
hello-world3-7d79c8647c-d7qsj  1/1    Running   0          148m   192.168.150.28   my-ubuntu-3  <none>        <none>
hello-world3-7d79c8647c-fjfmx  1/1    Running   0          148m   192.168.247.164  my-ubuntu-4  <none>        <none>
hello-world3-7d79c8647c-lqkw2  1/1    Running   0          148m   192.168.160.214  my-ubuntu-2  <none>        <none>
hello-world3-7d79c8647c-wzl5g  1/1    Running   0          148m   192.168.150.30   my-ubuntu-3  <none>        <none>
hello-world3-7d79c8647c-zlnt2  1/1    Running   0          148m   192.168.247.165  my-ubuntu-4  <none>        <none>
hello-world4-6b8888db78-hxg5l  1/1    Running   0          140m   192.168.247.163  my-ubuntu-4  <none>        <none>
hello-world4-6b8888db78-qwv2m  1/1    Running   0          140m   192.168.160.204  my-ubuntu-2  <none>        <none>
hello-world4-6b8888db78-s9lm6  1/1    Running   0          140m   192.168.150.32   my-ubuntu-3  <none>        <none>
hello-world4-6b8888db78-td76q  1/1    Running   0          140m   192.168.150.31   my-ubuntu-3  <none>        <none>
hello-world5-76ffdc979-t5gg6  0/1    Pending   0          13s    <none>       <none>      <none>        <none>
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get pods -o wide
NAME          READY   STATUS    RESTARTS   AGE     IP           NODE      NOMINATED NODE   READINESS   GA
TES
hello-world2-7759968cf-cdg25  1/1    Running   0          3h3m   192.168.247.159  my-ubuntu-4  <none>        <none>
hello-world3-7d79c8647c-cpm5n  1/1    Running   0          149m   192.168.160.196  my-ubuntu-2  <none>        <none>
hello-world3-7d79c8647c-d7qsj  1/1    Running   0          149m   192.168.150.28   my-ubuntu-3  <none>        <none>
hello-world3-7d79c8647c-fjfmx  1/1    Running   0          149m   192.168.247.164  my-ubuntu-4  <none>        <none>
hello-world3-7d79c8647c-lqkw2  1/1    Running   0          149m   192.168.160.214  my-ubuntu-2  <none>        <none>
hello-world3-7d79c8647c-wzl5g  1/1    Running   0          149m   192.168.150.30   my-ubuntu-3  <none>        <none>
hello-world3-7d79c8647c-zlnt2  1/1    Running   0          149m   192.168.247.165  my-ubuntu-4  <none>        <none>
hello-world4-6b8888db78-hxg5l  1/1    Running   0          140m   192.168.247.163  my-ubuntu-4  <none>        <none>
hello-world4-6b8888db78-qwv2m  1/1    Running   0          140m   192.168.160.204  my-ubuntu-2  <none>        <none>
hello-world4-6b8888db78-s9lm6  1/1    Running   0          140m   192.168.150.32   my-ubuntu-3  <none>        <none>
hello-world4-6b8888db78-td76q  1/1    Running   0          140m   192.168.150.31   my-ubuntu-3  <none>        <none>
hello-world5-76ffdc979-t5gg6  0/1    Pending   0          48s    <none>       <none>      <none>        <none>
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

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#2 what solution you would propose to the customer.

- Here the solution is proposed to the customer need label with class into the one node.
- Please check below screen short with command.
- I chose node 2 in my case it's name is my-ubuntu-2.

```

file2.yaml file3.yaml file1.yaml file4.yaml file5.yaml
File V2.0.1 File5.yaml
1 apiVersion: apps/v1
2 kind: Deployment
3 metadata:
4   name: hello-worlds
5 spec:
6   selector:
7     matchLabels:
8       app: hello-world-app
9   template:
10    metadata:
11      labels:
12        app: hello-world-app
13   spec:
14     nodeSelector:
15       class: 2023-batch1
16     containers:
17       - name: hello-world
18         image: gcr.io/google-samples/hello-app:1.0
19

```

Terminal Session View Xserver Tools Games Settings Macros Help

Session Servers Tools Sessions View Split MultiExec Tunneling Padanges Settings Help

ericsson@my-ubuntu-1:~/content/course/Final_test\$ kubectl label node my-ubuntu-2 class=2023-batch1

ericsson@my-ubuntu-1:~/content/course/Final_test\$ kubectl get nodes --show-labels | grep class

my-ubuntu-2 Ready <none> 27d v1.29.3 beta.kubernetes.io/arch=amd64,beta.kubernetes.io/hostname=my-ubuntu-2,kubernetes.io/os=linux,class=2023-batch1,kubernetes.io/arch=amd64,kubernetes.io/hostname=my-ubuntu-2,kubernetes.io/os=linux

ericsson@my-ubuntu-1:~/content/course/Final_test\$

#3 implement it in your lab to ensure the resources come up on one node in your lab

- Here we can see on my-ubuntu-2 the resource is come up.

```

ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get pods -o wide
NAME READY STATUS RESTARTS AGE IP NODE NOMINATED NODE READINESS G
ATES
hello-world2-7759968cf-cdgv25 1/1 Running 0 3h19m 192.168.247.159 my-ubuntu-4 <none> <none>
hello-world3-7d79c8647c-cpmn 1/1 Running 0 164m 192.168.160.196 my-ubuntu-2 <none> <none>
hello-world3-7d79c8647c-d7qsj 1/1 Running 0 164m 192.168.150.28 my-ubuntu-3 <none> <none>
hello-world3-7d79c8647c-fifmx 1/1 Running 0 164m 192.168.247.164 my-ubuntu-4 <none> <none>
hello-world3-7d79c8647c-lqkw2 1/1 Running 0 164m 192.168.160.214 my-ubuntu-2 <none> <none>
hello-world3-7d79c8647c-wzl5g 1/1 Running 0 164m 192.168.150.30 my-ubuntu-3 <none> <none>
hello-world3-7d79c8647c-zlnt2 1/1 Running 0 164m 192.168.247.165 my-ubuntu-4 <none> <none>
hello-world4-6b8888db78-hxg5l 1/1 Running 0 156m 192.168.247.163 my-ubuntu-4 <none> <none>
hello-world4-6b8888db78-qwv2m 1/1 Running 0 156m 192.168.160.204 my-ubuntu-2 <none> <none>
hello-world4-6b8888db78-s9lm6 1/1 Running 0 156m 192.168.150.32 my-ubuntu-3 <none> <none>
hello-world4-6b8888db78-td76q 1/1 Running 0 156m 192.168.150.31 my-ubuntu-3 <none> <none>
hello-world5-76ffddcbc79-t5gg6 1/1 Running 0 16m 192.168.160.201 my-ubuntu-2 <none> <none>
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

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2.7 Question 7

Apply file6.yaml in your Nocentino lab. Explain #1 what are the issues you see, and #2 what solution you would propose to the customer and #3 implement it in your lab to ensure the resources come up and healthy in your lab.

Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

#1 what are the issues you see

- After applied the file showing the error.
 - Server-side and client-side validation also showing error.

The screenshot shows a terminal window with the following command and error output:

```
ericson@my-ubuntu-1:~/content/course/final_test$ kubectl apply -f file6.yaml
```

Output:

```
error: error parsing file6.yaml: error converting YAML to JSON: yaml: line 2: mapping values are not allowed in this context
error: error parsing file6.yaml: error converting YAML to JSON: yaml: line 2: mapping values are not allowed in this context
error: error parsing file6.yaml: error converting YAML to JSON: yaml: line 2: mapping values are not allowed in this context
error: error parsing file6.yaml: error converting YAML to JSON: yaml: line 2: mapping values are not allowed in this context
ericson@my-ubuntu-1:~/content/course/final_test$
```

#2 what solution you would propose to the customer

- In file6.yaml, Line 1 & 2 and line 6 & 7 should be parallel.

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: hello-world6
spec:
  replicas: 3
  selector:
    matchLabels:
      app: hello-world6
  template:
    metadata:
      labels:
        app: hello-world6
    spec:
      containers:
        - name: hello-world
          image: gcr.io/google-samples/hello-app:2.0
          ports:
            - containerPort: 8080
```



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#3 implement it in your lab to ensure the resources come up and healthy in your lab.

- Now Server-side and client-side validation looks okay.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file6.yaml --dry-run=client
deployment.apps/hello-world6 created (dry run)
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file6.yaml --dry-run=server
deployment.apps/hello-world6 created (server dry run)
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

- The resources come up and healthy check below screen short.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file6.yaml
deployment.apps/hello-world6 created
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all
NAME                           READY   STATUS    RESTARTS   AGE
pod/hello-world2-7759968cf-cdg25  1/1     Running   0          3h33m
pod/hello-world3-7d79c8647c-cpm5n  1/1     Running   0          178m
pod/hello-world3-7d79c8647c-d7qsj  1/1     Running   0          179m
pod/hello-world3-7d79c8647c-fjfmx  1/1     Running   0          178m
pod/hello-world3-7d79c8647c-lqkw2  1/1     Running   0          179m
pod/hello-world3-7d79c8647c-wzl5g  1/1     Running   0          179m
pod/hello-world3-7d79c8647c-zlnt2  1/1     Running   0          179m
pod/hello-world4-6b8888db78-hxg5l  1/1     Running   0          170m
pod/hello-world4-6b8888db78-qvw2m  1/1     Running   0          170m
pod/hello-world4-6b8888db78-s9lm6  1/1     Running   0          170m
pod/hello-world4-6b8888db78-td76q  1/1     Running   0          170m
pod/hello-world5-76fdccbc79-t5gg6  1/1     Running   0          30m
pod/hello-world6-649c4f785f-5cvv7  1/1     Running   0          53s
pod/hello-world6-649c4f785f-c5l9n  1/1     Running   0          53s
pod/hello-world6-649c4f785f-rnrt9  1/1     Running   0          53s

NAME                  TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)    AGE
service/hello-world-pod  ClusterIP  10.106.255.91  <none>       80/TCP     17d
service/hello-world3    ClusterIP  10.100.16.229   <none>       80/TCP     3h19m
service/kubernetes     ClusterIP  10.96.0.1       <none>       443/TCP    27d

NAME                           READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/hello-world2  1/1     1           1           3h47m
deployment.apps/hello-world3  6/6     6           6           3h19m
deployment.apps/hello-world4  4/4     4           4           170m
deployment.apps/hello-world5  1/1     1           1           30m
deployment.apps/hello-world6  3/3     3           3           53s

NAME                DESIRED   CURRENT   READY   AGE
replicaset.apps/hello-world2-65cd7875c  0         0         0       3h48m
replicaset.apps/hello-world2-7759968cf-c  1         1         1       3h33m
replicaset.apps/hello-world3-5d745ccc5d  0         0         0       3h12m
replicaset.apps/hello-world3-7d79c8647c  6         6         6       179m
replicaset.apps/hello-world3-845f4bc4fd  0         0         0       3h19m
replicaset.apps/hello-world4-6b8888db78  4         4         4       170m
replicaset.apps/hello-world5-76fdccbc79  1         1         1       30m
replicaset.apps/hello-world6-649c4f785f  3         3         3       54s
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

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2.8 Question 8

Apply file7.yaml in your Nocentino lab. The end goal of this file is to deploy the Hello-World pod with its associated service and allow you to curl it to receive a response. Explain #1 what are the issues you see when you curl the service ip, and #2 what solution you would propose to the customer and #3 implement it in your lab to ensure the resources come up healthy and you can successfully curl the application.

Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

- Applied file7.yaml

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file7.yaml
deployment.apps/hello-world-pod-file7 created
service/hello-world-service-file7 created
ericsson@my-ubuntu-1:~/content/course/Final_test$ █
```

#1 what are the issues you see when you curl the service IP.

- Connection refused when I did curl command with IP.
- Because under the selector section app = hello-world in file7.yaml and labels is app=hello-world7.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file7.yaml
deployment.apps/hello-world-pod-file7 created
service/hello-world-service-file7 created
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get svc
NAME           TYPE      CLUSTER-IP   EXTERNAL-IP   PORT(S)    AGE
hello-world-pod   ClusterIP  10.106.255.91  <none>        80/TCP     17d
hello-world-service-file7  ClusterIP  10.102.135.213  <none>        80/TCP     9m26s
hello-world3       ClusterIP  10.100.16.229  <none>        80/TCP     3h30m
kubernetes        ClusterIP  10.96.0.1    <none>        443/TCP    27d
ericsson@my-ubuntu-1:~/content/course/Final_test$ curl 10.102.135.213
curl: (7) Failed to connect to 10.102.135.213 port 80: Connection refused
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get pods
NAME                           READY   STATUS    RESTARTS   AGE
hello-world-pod-file7-5579b48854-6g427  1/1     Running   0          10m
hello-world-pod-file7-5579b48854-zplz  1/1     Running   0          10m
hello-world-pod-file7-5579b48854-9k9f5  1/1     Running   0          10m
hello-world-pod-file7-5579b48854-b4qcp  1/1     Running   0          10m
hello-world-pod-file7-5579b48854-qzsp  1/1     Running   0          10m
hello-world-pod-file7-5579b48854-18cb2  1/1     Running   0          10m
hello-world-pod-file7-5579b48854-m7rsk  1/1     Running   0          10m
hello-world-pod-file7-5579b48854-p2mmx  1/1     Running   0          10m
hello-world-pod-file7-5579b48854-p4r6m  1/1     Running   0          10m
hello-world-pod-file7-5579b48854-rdhm6  1/1     Running   0          10m
hello-world2-7759968fc-dgv25  1/1     Running   0          3h46m
hello-world3-7d79c8647c-cpmson  1/1     Running   0          3h11m
hello-world3-7d79c8647c-d7gsj  1/1     Running   0          3h11m
hello-world3-7d79c8647c-fifmx  1/1     Running   0          3h11m
hello-world3-7d79c8647c-lgkw2  1/1     Running   0          3h11m
hello-world3-7d79c8647c-wz15g  1/1     Running   0          3h11m
hello-world3-7d79c8647c-zlnt2  1/1     Running   0          3h11m
hello-world4-6b8888db78-hxg5l  1/1     Running   0          3h3m
hello-world4-6b8888db78-qvw2m  1/1     Running   0          3h3m
hello-world4-6b8888db78-s9lm6  1/1     Running   0          3h3m
hello-world4-6b8888db78-td76q  1/1     Running   0          3h3m
hello-world5-76fdccbc79-t5gg6  1/1     Running   0          43m
hello-world6-649c4f785f-5cvv7  1/1     Running   0          13m
hello-world6-649c4f785f-c5l9n  1/1     Running   0          13m
hello-world6-649c4f785f-rnr9  1/1     Running   0          13m
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl describe pod hello-world-pod-file7-5579b48854-6g427 | grep app
Labels:           app=hello-world7
Image:          gcr.io/google-samples/hello-app:2.0
Image ID:        gcr.io/google-samples/hello-app@sha256:7104356ed4e3476a96a23b96f8d7c04dfa7a1881aa97d66a76217f6bc8a370d0
Normal Pulled  11m kubelet Container image "gcr.io/google-samples/hello-app:2.0" already present on machine
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl describe svc hello-world-pod-file7 | grep app
Error from server (NotFound): services "hello-world-pod-file7" not found
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl describe svc hello-world-service-file7 | grep app
Selector:        app=hello-world
```



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#2 what solution you would propose to the customer.

- Under the selector section `app: hello-world` in file7.yaml need to update with `app: hello-world7`.
- Then applied the file again.

```
file2.yaml file3.yaml file4.yaml file5.yaml file7.yaml
1 apiVersion: apps/v1
2 kind: Deployment
3 metadata:
4   name: hello-world-pod-file7
5 spec:
6   progressDeadlineSeconds: 10
7   replicas: 10
8   selector:
9     matchLabels:
10    app: hello-world7
11   template:
12     metadata:
13       labels:
14         app: hello-world7
15     spec:
16       containers:
17         - name: hello-world
18           image: gcr.io/google-samples/hello-app:2.0
19         ports:
20           - containerPort: 8080
21 ...
22 apiVersion: v1
23 kind: Service
24 metadata:
25   name: hello-world-service-file7
26 spec:
27   selector:
28     app: hello-world
29   ports:
30     port: 80
31     protocol: TCP
32     targetPort: 8080
33
34
```

Terminal Session View X server Tools Games Settings Macros Help

Quick connect... `file7.yaml`

Session Servers Tools Games Sessions View Split MultiExec Tunneling Packages Settings Help

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: hello-world-pod-file7
spec:
  progressDeadlineSeconds: 10
  replicas: 10
  selector:
    matchLabels:
      app: hello-world7
  template:
    metadata:
      labels:
        app: hello-world7
    spec:
      containers:
        - name: hello-world
          image: gcr.io/google-samples/hello-app:2.0
          ports:
            - containerPort: 8080
...
apiVersion: v1
kind: Service
metadata:
  name: hello-world-service-file7
spec:
  selector:
    app: hello-world7
  ports:
    - port: 80
      protocol: TCP
      targetPort: 8080
```

#3 implement it in your lab to ensure the resources come up healthy and you can successfully curl the application.

- After the update curl with ip is worked.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ vi file7.yaml
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file7.yaml
deployment.apps/hello-world-pod-file7 unchanged
service/hello-world-service-file7 configured
ericsson@my-ubuntu-1:~/content/course/Final_test$ curl 10.102.135.213
Hello, world!
Version: 2.0.0
Hostname: hello-world-pod-file7-5579b48854-p4r6m
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

Example of a successful curl response:

```
curl 10.105.217.86
Hello, world!
Version: 2.0.0
```



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Hostname: hello-world7-9f95dbbdf-8w8qb



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2.9 Question 9

Install Helm 3 on your Nocentino lab from the Script section of the official HELM documentation (<https://helm.sh/docs/intro/install/>).

Show all the commands you used and include which version you successfully installed.

Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

Example (your version could be different) : helm version

```
version.BuildInfo{Version:"v3.8.2", GitCommit:"50f003e5ee8704ec937a756c646870227d7c8b58",  
GitTreeState:"clean", GoVersion:"go1.16.8"}
```

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ curl -fsSL -o get_helm.sh https://raw.githubusercontent.com/helm/helm/main/scripts/get-helm-3  
ericsson@my-ubuntu-1:~/content/course/Final_test$ chmod 700 get_helm.sh  
ericsson@my-ubuntu-1:~/content/course/Final_test$ ./get_helm.sh  
Downloading https://get.helm.sh/helm-v3.14.4-linux-amd64.tar.gz  
Verifying checksum... Done.  
Preparing to install helm into /usr/local/bin  
helm installed into /usr/local/bin/helm
```

```
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~$ helm version  
version.BuildInfo{Version:"v3.14.4", GitCommit:"81c902a123462fd4052bc5e9aa9c513c4c8fc142", GitTreeState:"clean", GoVersion:"go1.21.9"}  
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~$
```

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2.10 Question 10

The customer provided you a HELM Chart that will deploy an HTTP version of Hello-World.

#1 Review all the value files in the Chart package to understand what variables already exists for you to reuse.

- I reviewed value.yaml (only one is there)
 - We can see the below screen short has all the variables list that we can reuse in the deployment.

```
! file2.yaml ! file3.yaml ! file1.yaml ! file6.yaml ! values.yaml X
files > V2.0 > Helm Charts > hello-kubernetes > ! values.yaml
  1 # Provide a custom message to the Hello World web application
  2 message: "I think I have survived the Cloud Native Operation workshop Rabiul"
  3
  4 # Remember to set service.type=ClusterIP if you are using an ingress
  5 ingress:
  6   configured: false
  7   rewritePath: true
  8   pathPrefix: ""
  9
 10 service:
 11   type: LoadBalancer
 12   port: 80
 13
 14 deployment:
 15   replicaCount: 2
 16   container:
 17     image:
 18       repository: "paulbouwer/hello-kubernetes"
 19       tag: "" # uses chart appVersion if not provided
 20       pullPolicy: IfNotPresent
 21     port: 8080
 22
 23 # Currently only linux images on amd64 architecture are supported - support for arm64 and windows/amd64 coming ...
 24 nodeSelector:
 25   kubernetes.io/os: linux
 26   kubernetes.io/arch: amd64
 27
 28 resources: {}
 29
 30 tolerations: []
 31
 32 affinity: {}
```

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#2 Using the HELM charts, deploy the application with the message "I think I have survived the Cloud Native Operation workshop (Your first name or signum)" configured via one of the value files. Take a screen capture showing the output, including the url bar at the top and output of the command you used to deploy it.

- I have updated the message.
- Install the with my name please check below screen short.

```

4. Kube-1
# Provide a custom message to the Hello World web application
message: "I think I have survived the Cloud Native Operation workshop Rabiul"

# Remember to set service.type=ClusterIP if you are using an ingress
ingress:
  configured: false
  rewritePath: true
    
```

```

(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ helm install rabiul hello-kubernetes
NAME: rabiul
LAST DEPLOYED: Wed May  8 15:45:19 2024
NAMESPACE: default
STATUS: deployed
REVISION: 1
TEST SUITE: None
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ 
  
```

```

4. Kube-1
helm list
NAME          NAMESPACE   REVISION  UPDATED             STATUS      CHART           APP VERSION
rabiul        default     1          2024-05-08 15:45:19  deployed   hello-kubernetes-1.0.0  1.10
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ kubectl get all
NAME                                         READY   STATUS    RESTARTS   AGE
pod/hello-kubernetes-rabiul-c8dfdc8f-5er55   1/1    Running   0          2m54s
pod/hello-world-pod-file7-5579b48854-6g427   1/1    Running   0          2m52s
pod/hello-world-pod-file7-5579b48854-7zplz   1/1    Running   0          62m
pod/hello-world-pod-file7-5579b48854-9f045   1/1    Running   0          62m
pod/hello-world-pod-file7-5579b48854-a4cp   1/1    Running   0          62m
pod/hello-world-pod-file7-5579b48854-gzpp   1/1    Running   0          62m
pod/hello-world-pod-file7-5579b48854-l8cb2  1/1    Running   0          62m
pod/hello-world-pod-file7-5579b48854-m7rsb  1/1    Running   0          62m
pod/hello-world-pod-file7-5579b48854-q4xwq  1/1    Running   0          62m
pod/hello-world-pod-file7-5579b48854-p4r6m  1/1    Running   0          62m
pod/hello-world-pod-file7-5579b48854-rdhm6  1/1    Running   0          62m
pod/hello-world2-7759968fc-dgv25            1/1    Running   0          4h37m
pod/hello-world2-7d79c8647c-cpmssn           1/1    Running   0          4h3m
pod/hello-world2-7d79c8647c-ctjvq            1/1    Running   0          4h3m
pod/hello-world3-7d79c8647c-fifmx            1/1    Running   0          4h3m
pod/hello-world3-7d79c8647c-lqkw2            1/1    Running   0          4h3m
pod/hello-world3-7d79c8647c-wzlsq            1/1    Running   0          4h3m
pod/hello-world4-6b8888db78-4t5q            1/1    Running   0          6m
pod/hello-world4-6b8888db78-hxg51            1/1    Running   0          3h54m
pod/hello-world4-6b8888db78-qwv2m            1/1    Running   0          3h54m
pod/hello-world4-6b8888db78-s9lme            1/1    Running   0          3h54m
pod/hello-world4-6b8888db78-td7eq            1/1    Running   0          3h54m
pod/hello-world5-649c4f785f-t5sq              1/1    Running   0          65m
pod/hello-world6-649c4f785f-vvv7              1/1    Running   0          65m
pod/hello-world6-649c4f785f-c5ln9            1/1    Running   0          65m
pod/hello-world6-649c4f785f-rnrt9            1/1    Running   0          65m
  
```

```

NAME          TYPE        CLUSTER-IP   EXTERNAL-IP  PORT(S)          AGE
service/hello-kubernetes-rabiul  LoadBalancer  10.109.89.189 <pending>   80:31503/TCP  2m52s
service/hello-world-pod  ClusterIP  10.106.255.91  <none>        80/TCP          17d
service/hello-world-service-file7  ClusterIP  10.102.135.213 <none>        80/TCP          62m
service/hello-worlds   ClusterIP  10.100.16.229 <none>        80/TCP          4h23m
service/kubernetes   ClusterIP  10.96.0.1    <none>        443/TCP         27d
  
```

```

NAME          READY  UP-TO-DATE  AVAILABLE  AGE
deployment.apps/hello-kubernetes-rabiul  2/2    2          2          2m52s
deployment.apps/hello-world-pod-file7   1/1    1          1          4h52m
deployment.apps/hello-world2            1/1    1          1          4h52m
deployment.apps/hello-world3            6/6    6          6          4h23m
deployment.apps/hello-world4            4/4    4          4          3h54m
deployment.apps/hello-world5            1/1    1          1          94m
deployment.apps/hello-world6            3/3    3          3          65m
  
```

```

NAME          DESIRED  CURRENT  READY  AGE
replicaset.apps/hello-kubernetes-rabiul-c8dfdc8f  2        2        2        2m52s
replicaset.apps/hello-world-pod-file7-5579b48854  10      10      10      62m
replicaset.apps/hello-world2-65cd7875c            0       0       0       4h52m
replicaset.apps/hello-world2-7759968fc            1       1       1       4h37m
replicaset.apps/hello-world3-5d745cc5d            0       0       0       4h16m
replicaset.apps/hello-world3-845f4bc4fd            0       0       0       4h23m
replicaset.apps/hello-world4-6b8888db78            4       4       4       3h54m
replicaset.apps/hello-world5-76fdcbc79            1       1       1       94m
replicaset.apps/hello-world6-649c4f785f            3       3       3       65m
  
```

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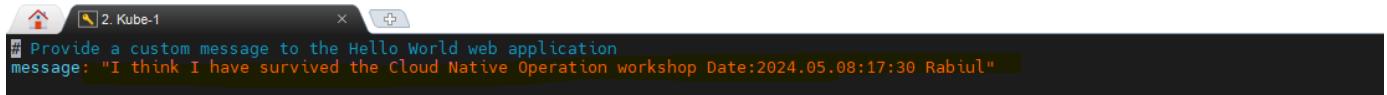
- Here is the curl command.

```
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ curl 10.109.89.189
<!DOCTYPE html>
<html>
<head>
  <title>Hello Kubernetes!</title>
  <link rel="stylesheet" type="text/css" href="/css/main.css">
  <link rel="stylesheet" href="https://fonts.googleapis.com/css?family=Ubuntu:300" >
</head>
<body>

  <div class="main">
    
    <div class="content">
      <div id="message">
        I think I have survived the Cloud Native Operation workshop Rabiul
      </div>
      <div id="info">
        <table>
          <tr>
            <th>namespace:</th>
            <td>default</td>
          </tr>
          <tr>
            <th>pod:</th>
            <td>hello-kubernetes-rabiul-c8d6fdc8f-q5q8w</td>
          </tr>
          <tr>
            <th>node:</th>
            <td>my-ubuntu-4 (Linux 4.15.0-202-generic)</td>
          </tr>
        </table>
      </div>
      <div id="footer">
        paulbouwer/hello-kubernetes:1.10 (linux/amd64)
      </div>
    </div>
  </div>
</body>
</html>(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ █
```

#3 Using HELM charts and command line variables, deploy the application again with a different message "I definitely survived the Cloud Native Operation workshop [today's date] (Your first name or signum)". This new message should be configured via the helm command line and if you have done it correctly, should override the message in the charts.

- Here is the different message.





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- Deploy with different name.

```
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ helm install ehanmdr hello-kubernetes
NAME: ehanmdr
LAST DEPLOYED: Wed May  8 15:54:23 2024
NAMESPACE: default
STATUS: deployed
REVISION: 1
TEST SUITE: None
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ █
```

- After upgrade we can see revision 2.

```
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ helm upgrade ehanmdr hello-kubernetes -f hello-kubernetes/values.yaml
Release "ehanmdr" has been upgraded. Happy Helming!
NAME: ehanmdr
LAST DEPLOYED: Wed May  8 16:00:13 2024
NAMESPACE: default
STATUS: deployed
REVISION: 2
TEST SUITE: None
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ █
```

- Verifying second message

```
</html>(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ kubectl get svc
NAME          TYPE      CLUSTER-IP    EXTERNAL-IP   PORT(S)        AGE
hello-kubernetes-ehanmdr  LoadBalancer  10.103.58.99  <pending>     80:30106/TCP  7m21s
hello-kubernetes-rabiul  LoadBalancer  10.109.89.189  <pending>     80:31503/TCP  16m
hello-world-pod         ClusterIP   10.106.255.91  <none>       80/TCP        17d
hello-world-service-file7  ClusterIP   10.102.135.213  <none>       80/TCP        75m
hello-worldd3           ClusterIP   10.100.16.229  <none>       80/TCP        4h37m
kubernetes              ClusterIP   10.96.0.1      <none>       443/TCP      27d
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ curl 10.103.58.99
<!DOCTYPE html>
<html>
<head>
  <title>Hello Kubernetes!</title>
  <link rel="stylesheet" type="text/css" href="/css/main.css">
  <link rel="stylesheet" href="https://fonts.googleapis.com/css?family=Ubuntu:300" >
</head>
<body>

  <div class="main">
    
    <div class="content">
      <div id="message">
        I think I have survived the Cloud Native Operation workshop Date:2024.05.08:17:30 Rabiul
      </div>
      <div id="info">
        <table>
          <tr>
            <th>namespace:</th>
            <td>default</td>
          </tr>
          <tr>
            <th>pod:</th>
            <td>hello-kubernetes-ehanmdr-78489c5ff9-5zzbf</td>
          </tr>
          <tr>
            <th>node:</th>
            <td>my-ubuntu-2 (Linux 4.15.0-202-generic)</td>
          </tr>
        </table>
      </div>
      <div id="footer">
        paulbouwer/hello-kubernetes:1.10 (linux/amd64)
      </div>
    </div>
  </div>
</body>
</html>(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ █
```

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Ericsson Internal	Commercial in Confidence	Training Material	29 (30)
Prepared By (Subject Responsible)		Approved By (Document Responsible)	Checked
EMACHAB Martin Chabot		Sampurna Chakraborty	
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Uen	PA1	2023-04-14	



Take a screen capture showing the output, including the url bar at the top, AND the command you used to deploy it a second time.

NOTE: you can upgrade the first deployment, or deploy a new one with a different name, it's up to you to decide which one you prefer. Both are acceptable.

#4 Attach your screen captures below of your two Helm web application deployments.

Show your work / commands / screen captures used to perform these tasks, including the prompts of your personalized lab.

- Here is the one Helm web application deployment.
- First one I have deleted without understanding (**self-confession**)
- If you really need it, then I can do one more deployment which will be the revision 3. (**Reach me**)
- But you can verify from previous screen short I have truly deployed two Helm web application. (**Thanks**)

```
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ helm list
NAME    NAMESPACE   REVISI0N   UPDATED          STATUS      CHART
ehanmdr default     2        2024-05-08 16:00:13.388329728 +0000 UTC deployed  hello-kubernetes-1.0.0  1.10
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$
```

```
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ kubectl get all
NAME                           READY   STATUS    RESTARTS   AGE
pod/hello-kubernetes-ehanmdr-78489c5ff9-szbf   1/1    Running   0          15m
pod/hello-kubernetes-ehanmdr-78489c5ff9-qwspg  1/1    Running   0          15m
pod/hello-world-pod-file7-5579b48854-6g42t   1/1    Running   0          83m
pod/hello-world-pod-file7-5579b48854-7zplz   1/1    Running   0          83m
pod/hello-world-pod-file7-5579b48854-9k9fs   1/1    Running   0          83m
pod/hello-world-pod-file7-5579b48854-b4qcp   1/1    Running   0          83m
pod/hello-world-pod-file7-5579b48854-gzssp   1/1    Running   0          83m
pod/hello-world-pod-file7-5579b48854-18cb2   1/1    Running   0          83m
pod/hello-world-pod-file7-5579b48854-m7rsk   1/1    Running   0          83m
pod/hello-world-pod-file7-5579b48854-p2mmx   1/1    Running   0          83m
pod/hello-world-pod-file7-5579b48854-p4r6m   1/1    Running   0          83m
pod/hello-world-pod-file7-5579b48854-rdhm6   1/1    Running   0          83m
pod/hello-world2-d7759968cf-cdg25            1/1    Running   0          4h59m
pod/hello-world3-d7d79c8647c-cpmson           1/1    Running   0          4h25m
pod/hello-world3-d7d79c8647c-d7qsj            1/1    Running   0          4h25m
pod/hello-world3-d7d79c8647c-fifmx            1/1    Running   0          4h25m
pod/hello-world3-d7d79c8647c-lqkw2            1/1    Running   0          4h25m
pod/hello-world3-d7d79c8647c-wzl5g            1/1    Running   0          4h25m
pod/hello-world3-d7d79c8647c-zlnt2            1/1    Running   0          4h25m
pod/hello-world4-6b8888db78-hxg5l            1/1    Running   0          4h16m
pod/hello-world4-6b8888db78-qvw2m            1/1    Running   0          4h16m
pod/hello-world4-6b8888db78-sqlm6            1/1    Running   0          4h16m
pod/hello-world4-6b8888db78-td76q            1/1    Running   0          4h16m
pod/hello-world5-76fddcbc79-ts9gg             1/1    Running   0          116m
pod/hello-world6-649c4f785f-5cvv7            1/1    Running   0          87m
pod/hello-world6-649c4f785f-cs19n            1/1    Running   0          87m
pod/hello-world6-649c4f785f-rnrt9            1/1    Running   0          87m

NAME              TYPE        CLUSTER-IP      EXTERNAL-IP      PORT(S)      AGE
service/hello-kubernetes-ehanmdr   LoadBalancer   10.103.58.99   <pending>      80:30106/TCP   15m
service/hello-world-pod             ClusterIP     10.106.255.91   <none>       80/TCP       17d
service/hello-world-service-file7 ClusterIP     10.102.135.213  <none>       80/TCP       83m
service/hello-world3                ClusterIP     10.100.16.229   <none>       80/TCP       4h45m
service/kubernetes                 ClusterIP     10.96.0.1        <none>       443/TCP      27d

NAME              READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/hello-kubernetes-ehanmdr  2/2     2           2           15m
deployment.apps/hello-world-pod-file7     1/1     10          10          83m
deployment.apps/hello-world2              1/1     1           1           5h14m
deployment.apps/hello-world3              6/6     6           6           4h45m
deployment.apps/hello-world4              4/4     4           4           4h16m
deployment.apps/hello-world5              1/1     1           1           116m
deployment.apps/hello-world6              3/3     3           3           87m

NAME              DESIRED  CURRENT   READY   AGE
replicaset.apps/hello-kubernetes-ehanmdr-78489c5ff9  2        2         2         15m
replicaset.apps/hello-world-pod-file7-5579b48854      10      10        10        83m
replicaset.apps/hello-world2-65cd7875c                0       0         0         5h14m
replicaset.apps/hello-world2-7759968cf                1       1         1         4h59m
replicaset.apps/hello-world3-5d745ccc5d               0       0         0         4h38m
replicaset.apps/hello-world3-d7d79c8647c              6       6         6         4h25m
replicaset.apps/hello-world3-845f4bc4fd               0       0         0         4h45m
replicaset.apps/hello-world4-6b8888db78              4       4         4         4h16m
replicaset.apps/hello-world5-76fddcbc79              1       1         1         116m
replicaset.apps/hello-world6-649c4f785f              3       3         3         87m
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$
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Wrap up

Send your final test to your instructors by email with a meaningful title.

If this document is too big, feel free to zip everything in one file.

We hope you enjoyed this accelerated program and that you learned useful skills that will help you in your current and future endeavors.