

Homework 7 – Kubernetes Pods

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1. Creating a new folder and the files index.html and Dockerfile for the static content nginx image

```
C:\Users\blero\Not OneDrive\devOps>cd homework7  
C:\Users\blero\Not OneDrive\devOps\homework7>notepad index.html  
C:\Users\blero\Not OneDrive\devOps\homework7>notepad Dockerfile
```

Html content:

```
<!DOCTYPE html>  
<html>  
  <head>  
    <title>Welcome Rona</title>  
  </head>  
  <body>  
    <h1>Rona's first nginx container</h1>  
  </body>  
</html>
```

Dockerfile content :

```
File Edit View  
  
FROM nginx:alpine  
COPY index.html /usr/share/nginx/html/index.html
```

2. Building the image

```
C:\Users\blero\Not OneDrive\devOps\homework7>docker build -t rona03/nginx-static:v1 .  
[+] Building 4.5s (8/8) FINISHED docker:default  
=> [internal] load build definition from Dockerfile 0.0s  
=> [internal] load metadata for docker.io/library/nginx:alpine 0.0s  
=> [auth] library/nginx:pull token for registry-1.docker.io 0.0s  
=> [internal] load .dockerignore 0.1s  
=> [internal] transfer context: 2B 0.0s  
=> [internal] load build context 0.1s  
=> [internal] transfer context: 191B 0.0s  
=> [1/2] FROM docker.io/library/nginx:alpine@sha256:65645c7bb6a0661892a8b03b89d0743208a18dd2f3f17a54ef4b76fb8e2f 2.1s  
=>  resolve docker.io/library/nginx:alpine@sha256:65645c7bb6a0661892a8b03b89d0743208a18dd2f3f17a54ef4b76fb8e2f 0.1s  
=> sha256:d7e5070240863957eb0b5a4a5729963c3462666baa2947d00628cb5f2d5773 955B 0.5s  
=> sha256:65645c7bb6a0661892a8b03b89d0743208a18dd2f3f17a54ef4b76fb8e2f2a10 10.33kB 0.0s  
=> sha256:61ca4f733c802afdf9e05a32f0de0361b6d713bb53292dc15fb093229f648674 1.79MB 0.3s  
=> sha256:62223d644fa234c3a1cc785ee14242ec477364226fc1b11d2f669f96dc2ac8 2.50kB 0.0s  
=> sha256:6769dc3a703c719c1d2756dba13659be28ae16cf0da58dd5fd823d6b9a050ea 10.79kB 0.0s  
=> sha256:b464cfd2f2a6319875aeb27359ec549790ce14d214fc16ef915e4530e5ed235 629B 629B 0.3s  
=> extracting sha256:61ca4f733c802afdf9e05a32f0de0361b6d713bb53292dc15fb093229f648674 0.1s  
=> sha256:81bd8ed7ec6789b9cb7f1b47ee731c522f6dbaa3201ec73cd6bca1350f582948 402B 402B 0.5s  
=> sha256:197eb75867ef4fcecd0724f17b0972ab0d89436860a594a945f8eafff8155053 1.21kB 1.21kB 0.6s  
=> extracting sha256:b464cfd2f2a6319875aeb27359ec549790ce14d214fc16ef915e4530e5ed235 0.0s  
=> sha256:39c22dfdd6010082a4a646e7ca44e95aca9b3eaebc80f17f7cc2954004f2a7d 15.52kB 15.52kB 1.3s  
=> sha256:3a46464b756511a2e217f0508e11d1a572085d66ccf6d9a555a082ad9a3102 1.40kB 1.40kB 0.7s  
=> extracting sha256:81bd8ed7ec6789b0cb7f1b47ee731c522f6dbaa83201ec73cd6bca1350f582948 0.0s
```

4.Uploading to Dockerhub:

```
C:\Users\blero\Not OneDrive\devOps\homework7>docker login
Authenticating with existing credentials...
Login Succeeded

C:\Users\blero\Not OneDrive\devOps\homework7>docker push rona03/nginx-static:v1
The push refers to repository [docker.io/rona03/nginx-static]
49e6f0c43809: Pushed
0d853d50b128: Mounted from library/nginx
947e805a4ac7: Mounted from library/nginx
811a4dbbf4a5: Mounted from library/nginx
b8d7d1d22634: Mounted from library/nginx
e244aa659f61: Mounted from library/nginx
c56f134d3805: Mounted from library/nginx
d71eae0084c1: Mounted from library/nginx
08000c18d16d: Mounted from library/nginx
v1: digest: sha256:818e6d9d67a512ccf3576646865385a117863a797b67230d24168ff5e7416b24 size: 2196
```

Here is the repo in dockerhub:

The screenshot shows the Docker Hub interface. On the left, there's a sidebar with options like 'Repositories', 'Settings', 'Default privacy', 'Notifications', 'Billing', and 'Usage'. The main area is titled 'Repositories' and shows a single entry: 'rona03/nginx-static'. Below the entry, it says 'Last Pushed 1 minute ago', 'IMAGE', 'Public', and 'Inactive'. There's also a 'Create a repository' button at the top right.

5. Creating the pod yaml file through notepad:

notepad hw7Pod.yaml

content:

```
apiVersion: v1
kind: Pod
metadata:
  name: nginx-static
spec:
  containers:
    - name: nginx
      image: rona03/nginx-static:v1
      ports:
        - containerPort: 80
```

Pod manifest:

```
kubectl apply -f hw7Pod.yaml
```

```
C:\Users\blero\Not OneDrive\devOps\homework7>kubectl apply -f hw7Pod.yaml
pod/nginx-static created
```

6.Watching it deploy, it reached running state quite fast

```
C:\Users\blero\Not OneDrive\devOps\homework7>kubectl get pods -w
NAME        READY   STATUS    RESTARTS   AGE
nginx-static 1/1     Running   0          35s
```

Additionally I created a service so I can access from browser because I was interested in how it connects and works

I had to edit the yaml so I can add a label to it

Reapplied it

```
Directory of C:\Users\blero\Not OneDrive\devOps\homework7

10/05/2025  17:58      <DIR>          .
10/05/2025  17:36      <DIR>          ..
10/05/2025  17:40                  69 Dockerfile
10/05/2025  17:53                  171 hw7Pod.yaml
10/05/2025  17:59                  204 hw7Service.yaml
10/05/2025  17:39                  152 index.html
                4 File(s)           596 bytes
                2 Dir(s)  71,022,542,848 bytes free

C:\Users\blero\Not OneDrive\devOps\homework7>notepad hw7Pod.yaml

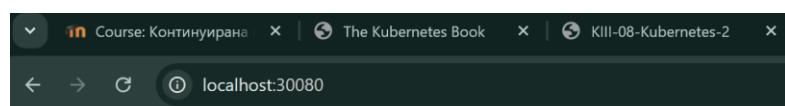
C:\Users\blero\Not OneDrive\devOps\homework7>kubectl apply -f hw7Pod.yaml
pod/nginx-static configured
```

Applied service too and checked it so I can see if its all good

```
C:\Users\blero\Not OneDrive\devOps\homework7>kubectl apply -f hw7Service.yaml
service/nginx-static-service created

C:\Users\blero\Not OneDrive\devOps\homework7>kubectl get svc
NAME            TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)      AGE
kubernetes      ClusterIP  10.96.0.1      <none>          443/TCP      52m
nginx-static-service  NodePort   10.110.68.118  <none>          80:30080/TCP  12s
```

On localhost:30080 I can see my content 😊



Rona's first nginx container