

## #Prueba-Dummy

### ###Contar con las siguientes herramientas instaladas.

- Sonarqube
- Organización de azure DevOps.
- Docker.
- Azure Agent Pool SelfHosted
- Kubernetes
- Minikube / Hypervisor / Nube con conexión a Azure DevOps

Utiliza un repositorio del siguiente link del apartado de framework  
<https://docs.docker.com/samples/>

### ####Procedimiento

1. Descarga los archivos del repositorio elegido.
2. Instala el framework necesario en caso de no tenerlo.
3. Compila la aplicación luego de pasar el análisis de sonarqube.
  - Agregar dos escenarios 1 - análisis fallido | 2 - análisis exitoso
4. Genera una imagen de docker y sube la imagen a dockerhub.
5. Dentro del pipeline ejecute lo siguiente en bash o powershell. a. Imprime `Hola Mundo` 10 veces en pantalla con un job paralelo. b. Script que cree 10 archivos con la fecha y luego lo imprima en consola
6. Despliega la app a un clúster de kubernetes (minikube o EKS o AKS).
7. Crea un endpoint externo accesible (ingress) para la aplicación
8. Sube al repo en una carpeta `environment` todos los yaml de k8s.

### ####Que se espera del ejercicio

1. Configuración de la infraestructura desde cero.
2. Documentación para crear solución y demostración de la aplicación funcionando.
3. Coding Standards.
4. Enfoque hacia la meta.

### ####Bonus para tomar en consideración

1. Construye un clúster de kubernetes usando IaC (terraform o eksctl).
2. Usa un manejador de templates como Kustomize o Helm.
3. Despliega en nube publica (AWS o Azure).
4. Que sea accesible desde internet.
5. Uso de metodologías DevOps.

### ####Resultados que debes adjuntar

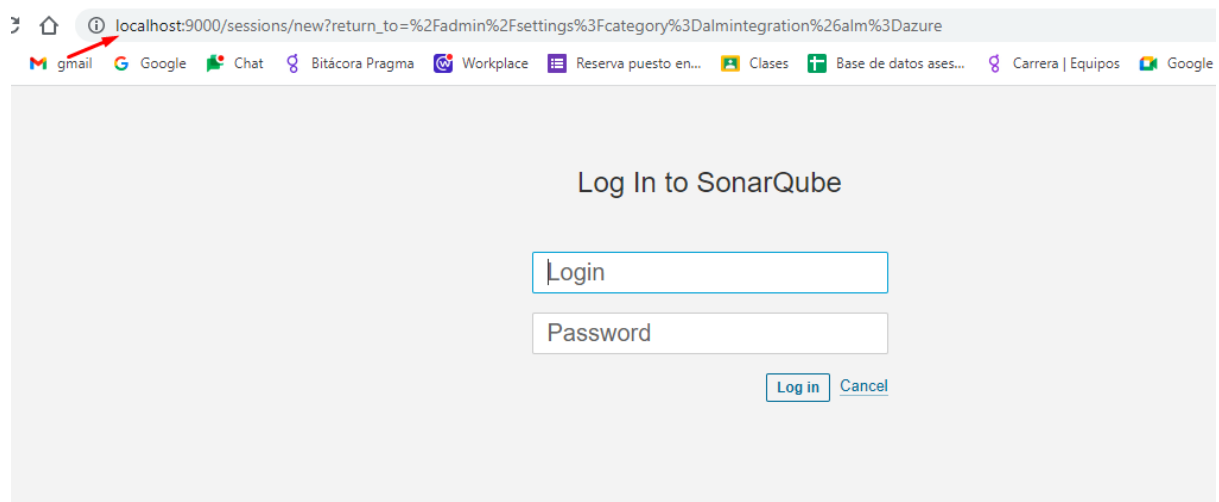
1. Código

2. yaml de k8s
3. Pipelines
4. Logs
5. Printscreen
6. Recording de pantalla (opcional)
7. Compartir repositorio de github publico para evaluación

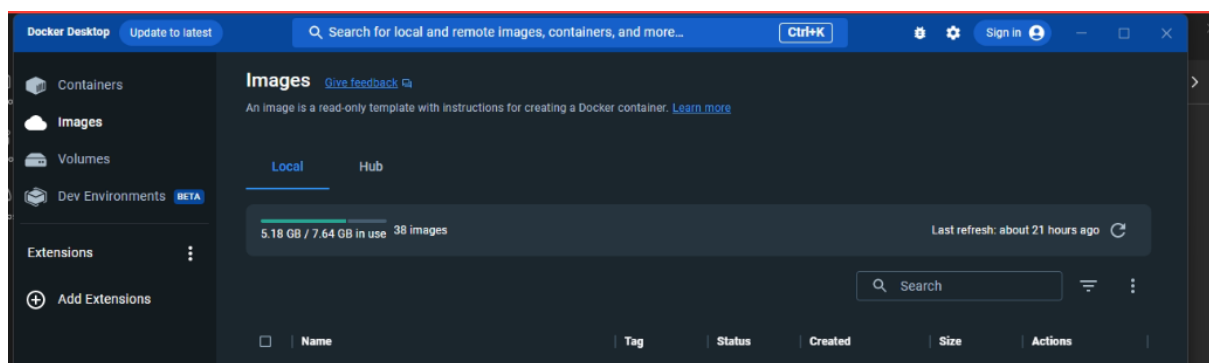
## solution

###Contar con las siguientes herramientas instaladas.

- Sonarqube



- Docker.



- Azure Agent Pool SelfHosted

Project Settings  
samtel

General

- Overview
- Teams
- Permissions
- Notifications
- Service hooks
- Dashboards

Boards

- Project configuration
- Team configuration
- GitHub connections

Pipelines

Agent pools

Default

Jobs Agents Details Security Analytics

Name	Last run	Current status	Agent version
agentpool01 Offline		Idle	3.218.0
CustomAngerwin2 Online	7h ago	Idle	3.218.0

Update all agents

Project Settings  
samtel

General

- Overview
- Teams
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- Dashboards

Boards

- Project configuration

Parallel jobs

Private projects

Microsoft-hosted ①

Free tier  
1 parallel job up to 1800 mins/mo

View in-progress jobs

Currently 0/1800 minutes are consumed

Purchase parallel jobs

Self-hosted ①

View in-progress jobs

1 Parallel jobs

Free parallel jobs 1

Visual Studio Enterprise subscribers ① 0

Monthly purchases 0 Change

Public projects

C:\Windows\system32\cmd.exe

Examinando las capacidades de la herramienta.  
Conectando al servidor. https://dev.azure.com/UserMsComunidad7039/samtel/\_settings/buildqueue?\_a=concurrentJobs

2023-04-15 19:42:11Z: Escuchando trabajos

Este equipo > Disco local (C:) > agent

Nombre	Fecha de modificación	Tipo	Tamaño
_diag	15/04/2023 7:30	Carpeta de archivos	
_work	13/04/2023 23:29	Carpeta de archivos	
bin	08/04/2023 15:16	Carpeta de archivos	
externals	08/04/2023 15:16	Carpeta de archivos	
.agent	08/04/2023 15:22	Archivo AGENT	1 KB
.credentials	08/04/2023 15:22	Archivo CREDENTI...	1 KB
.credentials_rsaparams	08/04/2023 15:21	Archivo CREDENTI...	2 KB
config.cmd	16/03/2023 12:22	Script de comand...	3 KB
run.cmd	16/03/2023 12:22	Script de comand...	4 KB

- Kubernetes
- Minikube / Hypervisor / Nube con conexión a Azure DevOps

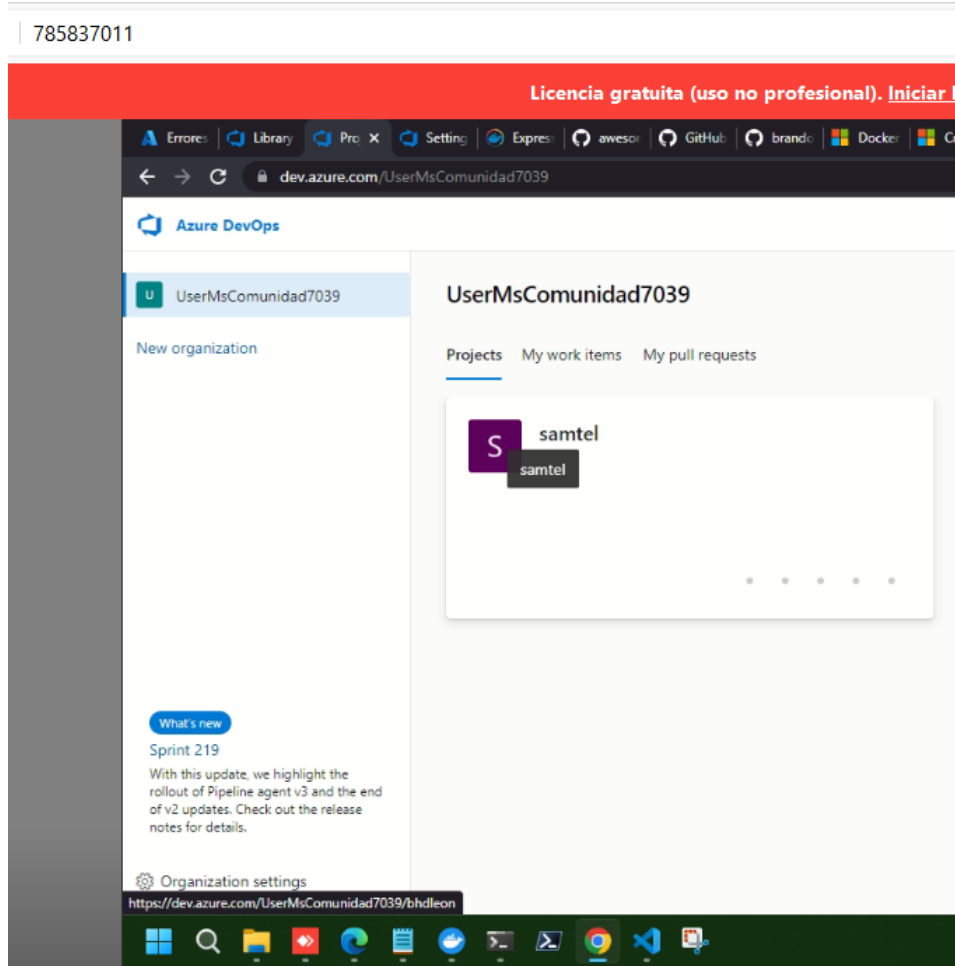
minikube status

```
PS C:\repos\samples-dockerhub-1\environment-aks> minikube status
minikube
type: Control Plane
host: Running
kubelet: Running
apiserver: Running
kubeconfig: Configured
```

- Organización de azure DevOps.

Organización de azure DevOps. (cuenta educativa)

[Summary - Overview \(azure.com\)](https://dev.azure.com/UserMsComunidad7039)



Utiliza un repositorio del siguiente link del apartado de framework  
<https://docs.docker.com/samples/>

<https://github.com/docker/awesome-compose/tree/master/react-express-mongodb>


https://github.com/docker/awesome-compose/tree/master/react-express-mongodb

README.md

Running containers must show containers running and the port mapping as below:

	CONTAINER ID	IMAGE	CMD	CREATED	STATUS	PORTS
\$ docker ps	65e68d8d5b6e	react-express-mongodb_server	"docker-entrypoint.s..."	23 minutes ago	Up 23 minutes	0.0.0.0:1
	ff5658541d04	react-express-mongodb_frontend	"docker-entrypoint.s..."	23 minutes ago	Up 23 minutes	0.0.0.0:1
	af321f86490	mongo:4.2.0	"docker-entrypoint.s..."	23 minutes ago	Up 23 minutes	0.0.0.0:1

After the application starts, navigate to <http://localhost:3000> in your web browser.



Stop and remove the containers

```
$ docker compose down
Stopping server ... done
Stopping frontend ... done
Stopping mongo ... done
Removing server ... done
Removing frontend ... done
Removing mongo ... done
```

https://github.com/docker/awesome-compose/tree/master/react-express-mongodb

docker / awesome-compose (Public)

master awesome-compose / react-express-mongodb /

StefanScherer react-express-mongodb: remove container\_name to allow multiple apps L... ✓ 6f1a3a2 on Dec 6, 2022 History

File	Commit	Time
docker	react-express-mongodb: remove container_name to allow multiple apps L...	4 months ago
backend	add configuration to use react-express-mongo sample with Docker Dev E...	9 months ago
frontend	add configuration to use react-express-mongo sample with Docker Dev E...	9 months ago
.gitignore	Fix security issues (#244)	last year
README.md	Add "Open in Docker Dev Environments" links (#280)	8 months ago
compose.yaml	react-express-mongodb: remove container_name to allow multiple apps L...	4 months ago
output.png	Sample React-Express-MongoDB (#58)	3 years ago

README.md

### Compose sample application

#### Use with Docker Development Environments

You can open this sample in the Dev Environments feature of Docker Desktop version 4.12 or later.

[Open in Docker Dev Environments](#)

#### React application with a NodeJS backend and a MongoDB database

Project structure:

```
├── backend
│   ├── Dockerfile
│   └── ...
├── compose.yaml
├── frontend
│   ├── ...
│   ├── Dockerfile
│   └── README.md
```

compose.yaml

```
services:
  frontend:
    build:
      context: frontend
    ...
  ports:
```

## 1 Descarga los archivos del repositorio elegido.

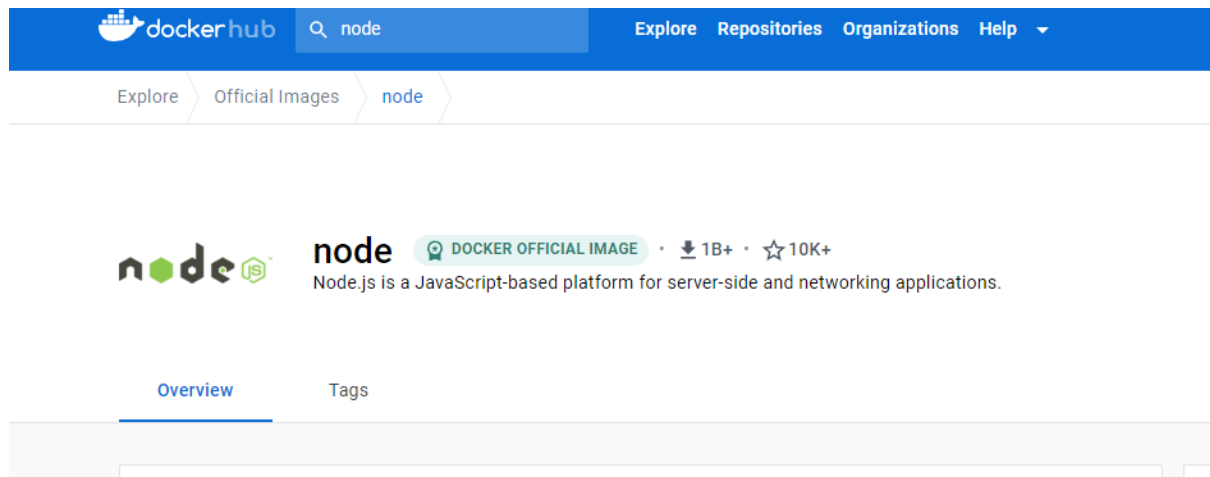
The screenshot shows the GitHub repository page for 'awesome-compose/react-express-mongodb'. The repository is public and has a 'master' branch. The commit history shows a recent commit by 'StefanScherer' titled 'react-express-mongodb: remove container\_name to allow multiple apps'. The commit message is 'react-express-mongodb: remove container\_name to allow multiple apps'. The commit is dated 'on Dec 8, 2022' and has a green checkmark indicating it is merged. The commit history table lists the following files and their commit messages:

File	Commit Message	Time
..	react-express-mongodb: remove container_name to allow multiple apps	4 months ago
backend	add configuration to use react-express-mongo sample with Docker Dev E...	9 months ago
frontend	add configuration to use react-express-mongo sample with Docker Dev E...	9 months ago
.gitignore	Fix security issues (#244)	last year
README.md	Add "Open in Docker Dev Environments" links (#280)	8 months ago
compose.yaml	react-express-mongodb: remove container_name to allow multiple apps	4 months ago
output.png	Sample React-Express-MongoDB (#59)	3 years ago

Below the commit history, there is a section for the 'README.md' file, which contains the text 'Compose sample application'.

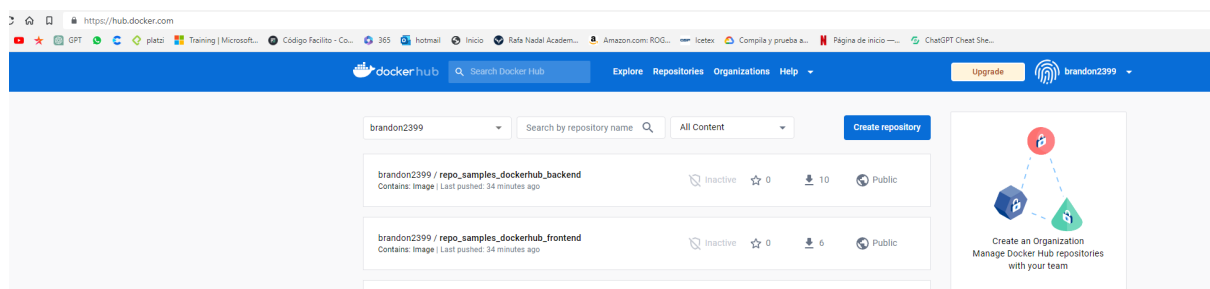
## 2 Instala el framework necesario en caso de no tenerlo.

The screenshot shows the Docker Hub page for the 'mongo' image. The page has a blue header with the Docker Hub logo and a search bar. Below the header, there are navigation links for 'Explore', 'Official Images', and 'mongo'. The 'mongo' image is highlighted, showing its icon (a green circle with a white building icon) and the text 'mongo'. Below the image name, it says 'DOCKER OFFICIAL IMAGE' with a green checkmark, and '1B+' downloads and '9.6K' stars. The description reads 'MongoDB document databases provide high availability and easy scalability.' Below the description, there are two tabs: 'Overview' (which is selected) and 'Tags'.

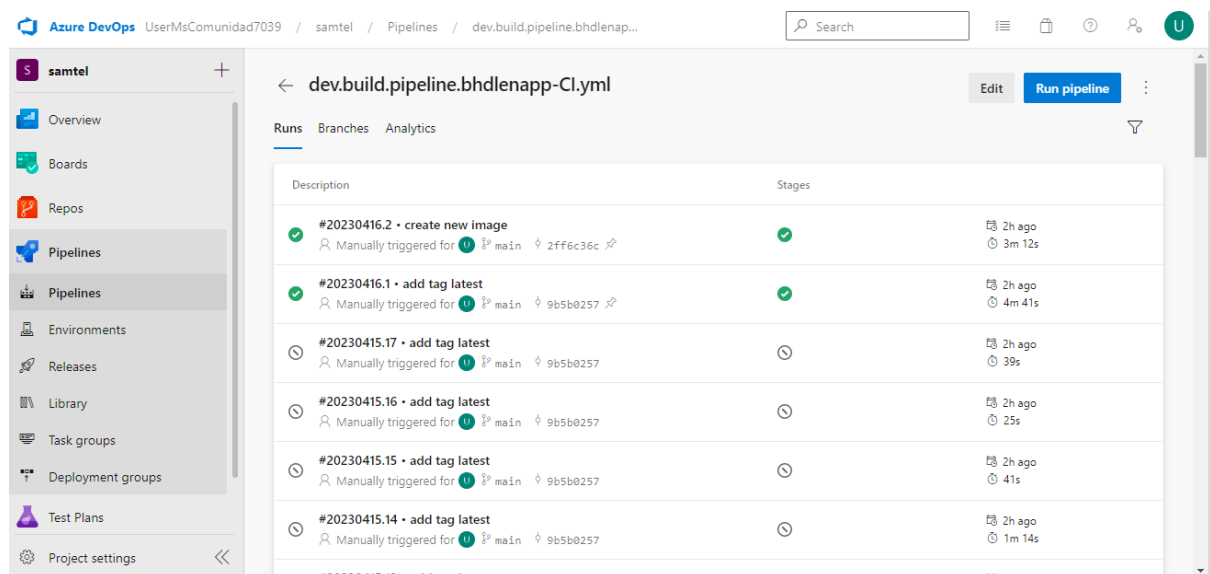


3 Compila la aplicación luego de pasar el analisis de sonarqube.

4 Genera una imagen de docker y sube la imagen a dockerhub.



pipeline



Azure DevOps UserMsComunidad7039 / samtel / Pipelines

dev.build.pipeline.bhdlenapp-CI.yml CI Disabled

main samples-dockerhub / Samtel/ADO/Pipelines/ci.yml

```
83 .....username: '$(myDockerHubUsername)'
84 .....password: '$(myDockerHubPassword)'
85 .....displayName: 'Docker Hub Login'
86
87 Settings
88 --- task: Docker@2
89 .....inputs:
90 .....containerRegistry: 'dockerhub'
91 .....repository: 'brandon2399/prueba_samples_dockerhub_frontend'
92 .....command: 'push'
93 .....tags: 'latest'
94 .....displayName: 'push dockerhub image frontend'
95
96 Settings
97 --- task: Docker@2
98 .....inputs:
99 .....containerRegistry: 'dockerhub'
100 .....repository: 'brandon2399/prueba_samples_dockerhub_backend'
101 .....command: 'push'
102 .....tags: 'latest'
103 .....displayName: 'push dockerhub image backend'
```

Tasks

- .NET Core: Build, test, package, or publish a dotnet application...
- Android signing: Sign and align Android APK files
- Ant: Build with Apache Ant
- App Center distribute: Distribute app builds to testers and users via Visu...
- App Center test: Test app packages with Visual Studio App Center
- Archive files: Compress files into .7z, .tar.gz, or .zip

## service connection con dockerhub y sonarqube

UserMsComunidad7039 / samtel / Settings / Service connections

Service connections

Filter by keywords Created by

- Azure for Students(0fb6adff1-1ac2-42c7-8eed-664c52d0d682)
- dockerhub
- SonarQubeConnection



## build imagen frontend

Jobs in run #20230415.12

- ✓ Docker build f... 6s
- ✓ Docker build ... 5s
- ✓ SonarQubePre... 8s
- ✓ SonarQu... 1m 51s
- ✓ Docker Hub L... 2s
- ✓ push dockerh... 8s
- ✓ push dockerh... 7s
- ✓ print\_hola\_m... 12s
- ✓ files\_fecha 1s
- ✓ print\_fecha 1s
- ✓ Post-job: Ch... <1s
- ✓ Finalize Job <1s
- ✓ Report build ... <1s

**Docker build frontend**

```
1  ##[warning]Unable to expand variable 'myDockerHubPassword'. A cyclical reference was detected.
2  ##[warning]Unable to expand variable 'SonarQube_loginName'. A cyclical reference was detected.
3  Starting: Docker build frontend
4  =====
5  Task      : Docker
6  Description : Build or push Docker images, login or logout, start or stop containers, or run a Docker c
7  Version    : 2.219.1
8  Author     : Microsoft Corporation
9  Help       : https://aka.ms/azpipes-docker-tsg
10 =====
11 "C:\Program Files\Docker\Docker\resources\bin\docker.exe" pull node:lts-buster
12 lts-buster: Pulling from library/node
13 Digest: sha256:18ec440dca55cc4c63f9ddb17d0df45282c5051ed291e32baeb3c5008aeeeff
14 Status: Image is up to date for node:lts-buster
15 docker.io/library/node:lts-buster
16 "C:\Program Files\Docker\Docker\resources\bin\docker.exe" inspect node:lts-buster
17 [
18   {
19     "Id": "sha256:a3acc49c5b9d746028dfa1dd37593bd3e45f6c413ec8ddcf42d937c10fa1dd0",
20     "RepoTags": [
21       "node:lts-buster"
22     ],
23     "RepoDigests": [
```

## build imagen backend

Jobs in run #202...  
ci.yml

Jobs

- ✓ Build Job 3m 7s
- ✓ Initialize job <1s
- ✓ Checkout sam... 5s
- ✓ Docker build f... 6s
- ✓ Docker build ... 5s
- ✓ SonarQubePre... 8s
- ✓ SonarQu... 1m 51s
- ✓ Docker Hub L... 2s
- ✓ push dockerh... 8s
- ✓ push dockerh... 7s
- ✓ print\_hola\_m... 12s

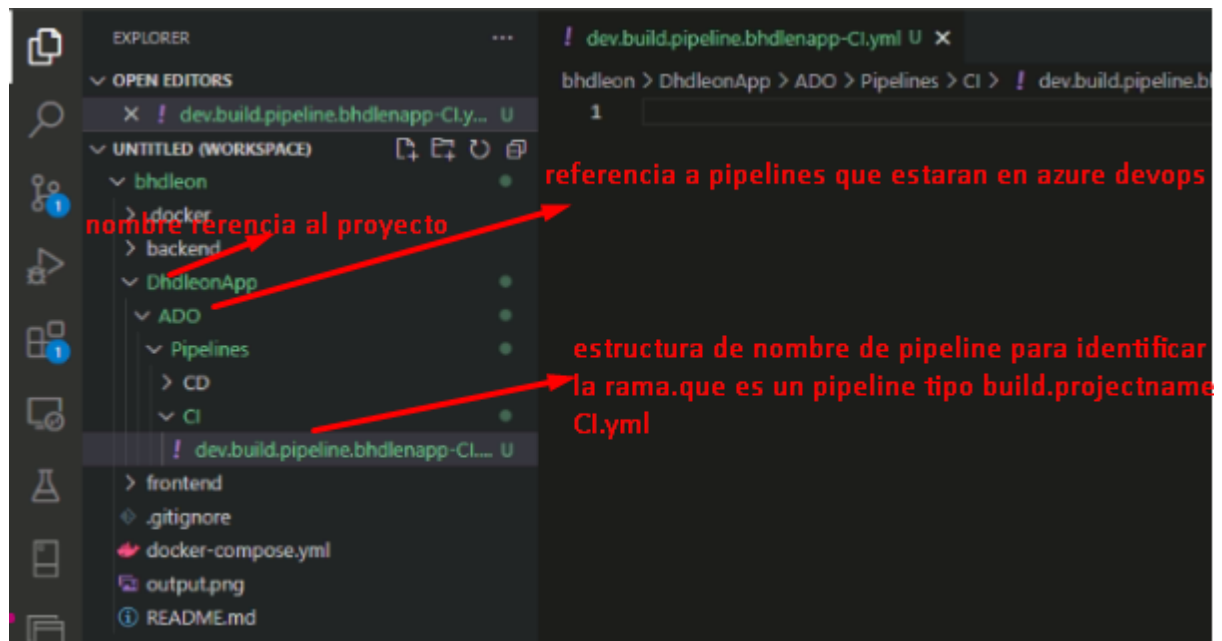
**Docker build backend**

```
1  ##[warning]Unable to expand variable 'myDockerHubPassword'. A cyclical reference was detected.
2  ##[warning]Unable to expand variable 'SonarQube_loginName'. A cyclical reference was detected.
3  Starting: Docker build backend
4  =====
5  Task      : Docker
6  Description : Build or push Docker images, login or logout, start or stop containers, or run a Docker c
7  Version    : 2.219.1
8  Author     : Microsoft Corporation
9  Help       : https://aka.ms/azpipes-docker-tsg
10 =====
11 "C:\Program Files\Docker\Docker\resources\bin\docker.exe" pull node:lts-buster-slim
12 lts-buster-slim: Pulling from library/node
13 Digest: sha256:7f6abee9dc8dd88c7e898489dc1652858b5fba6244a03bb43851d48b348651e
14 Status: Image is up to date for node:lts-buster-slim
15 docker.io/library/node:lts-buster-slim
16 "C:\Program Files\Docker\Docker\resources\bin\docker.exe" inspect node:lts-buster-slim
17 [
18   {
19     "Id": "sha256:0e1f0839240301298095a7e6e29cc9ef207818931707f0232e3d2a0bd3f60093",
20     "RepoTags": [
21       "node:lts-buster-slim"
22     ],
23     "RepoDigests": [
```

Agregar dos escenarios 1 - analisis fallido | 2 - analisis exitoso

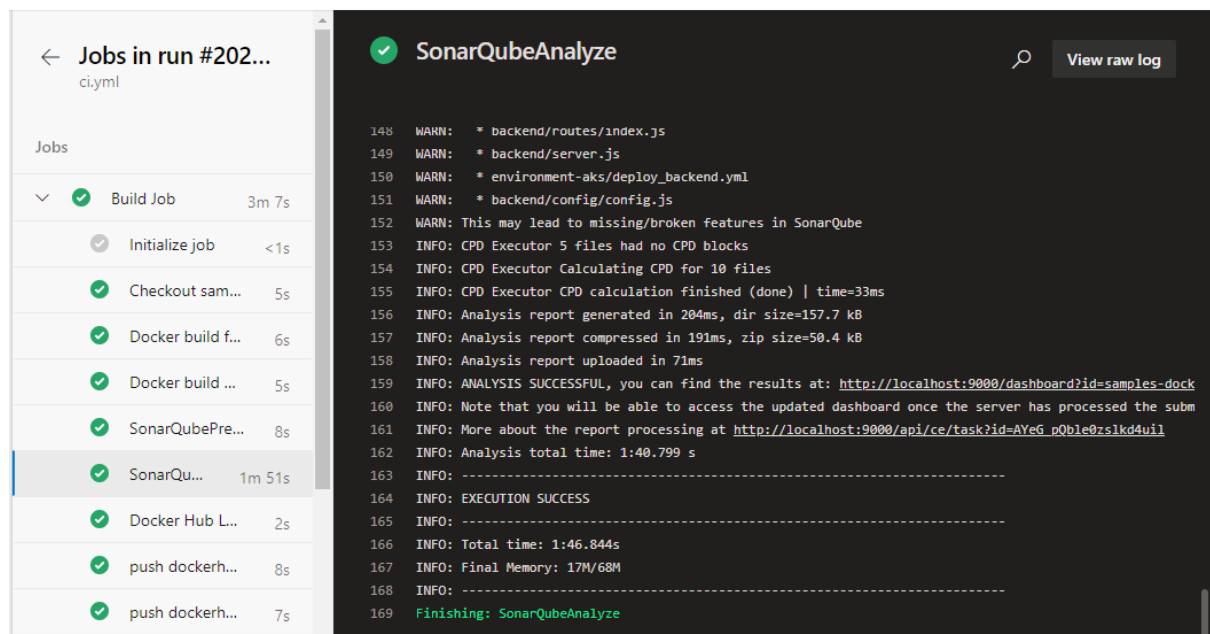
punto y tres y cuatro son complementarios dentro del ciclo devops de la aplicación y se encuentran en la tapa del build que rodeo todos los procesos anteriores como partida de planning ->>>code >> build >> test

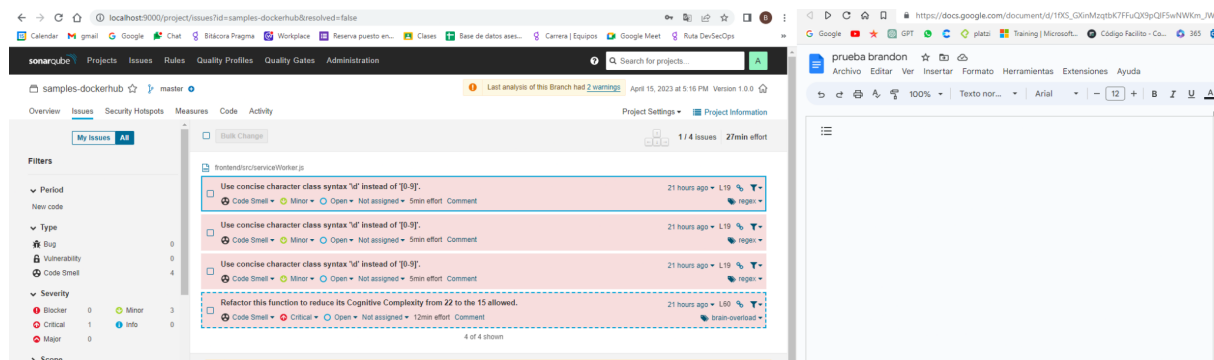
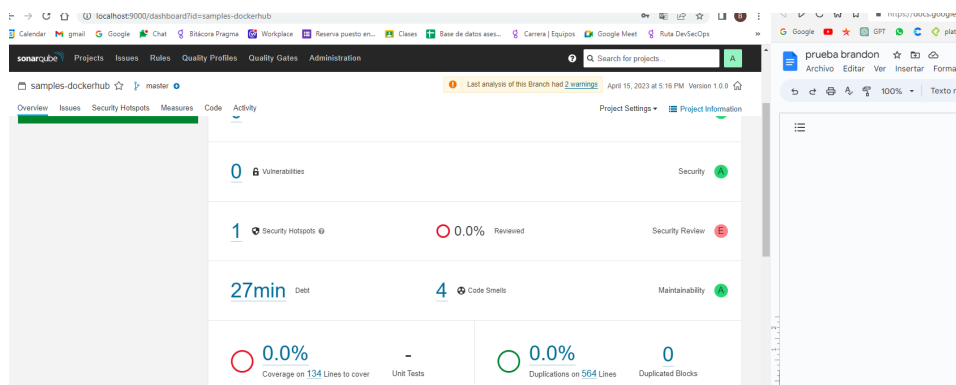
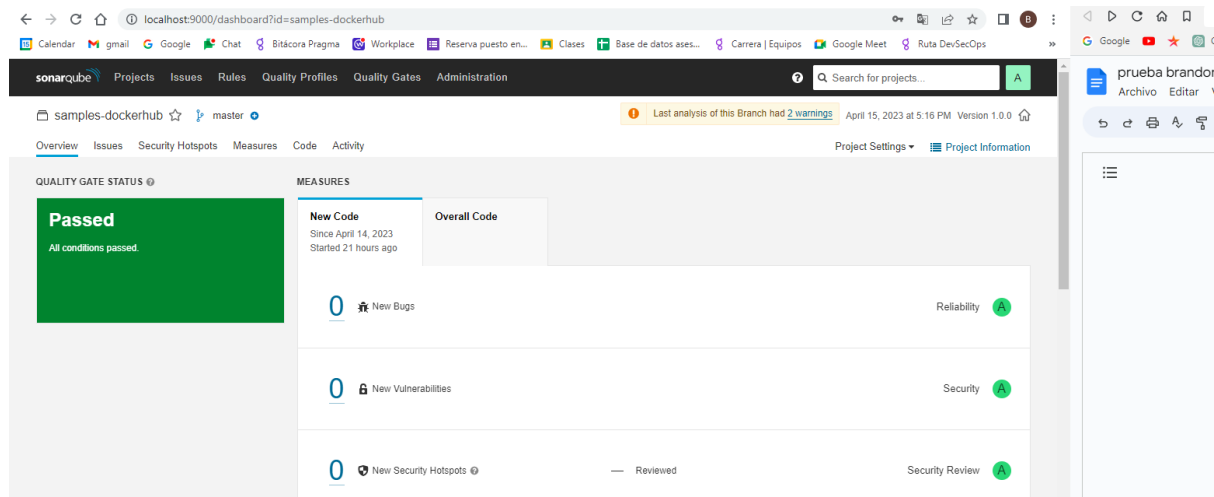
se crea la siguiente estructura de carpeta para empezar los pipelines tipo CI



de esta manera se permite tener una estructura que permite identificar los tipos de pipelines, templates, variables e infra

ejecucion del pipeline tarea sonar





5 Dentro del pipeline ejecute lo siguiente en bash o powershell. a. Imprime **Hola Mundo** 10 veces en pantalla con un job paralelo. b. Script que cree 10 archivos con la fecha y luego lo imprima en consola

a) Imprime **Hola Mundo** 10 veces en pantalla

nota: es posible que aquí lo que se pida se usar una matrix strategy pero no estoy seguro pero solo he usado matrix strategy una sola vez entonces casi no tengo experiencia con esa propiedad de los pipelines

The screenshot shows the Azure DevOps interface. On the left, a sidebar lists various pipeline components. The main panel displays a list of jobs in run #20230415.12. The job 'print\_hola\_mundo' is highlighted. The right panel shows the execution log for this job, which is a PowerShell script that prints 'Hola Mundo' 10 times.

```
3 >Starting: print_hola_mundo
4 =====
5 Task      : PowerShell
6 Description : Run a PowerShell script on Linux, macOS, or Windows
7 Version    : 2.212.0
8 Author     : Microsoft Corporation
9 Help       : https://docs.microsoft.com/azure/devops/pipelines/tasks/utility/powershell
10 =====
11 Generating script.
12 ===== Starting Command Output =====
13 "C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe" -NoLogo -NoProfile -NonInteractive -ExecutionPolicy All -Command "
14     Hola Mundo 1
15     Hola Mundo 2
16     Hola Mundo 3
17     Hola Mundo 4
18     Hola Mundo 5
19     Hola Mundo 6
20     Hola Mundo 7
21     Hola Mundo 8
22     Hola Mundo 9
23     Hola Mundo 10
24 Finishing: print_hola_mundo
```

b) b. Script que cree 10 archivos con la fecha y luego lo imprima en consola

The screenshot shows the Azure DevOps interface. On the left, a sidebar lists various pipeline components. The main panel displays a list of jobs in run #20230415.12. The job 'files\_fecha' is highlighted. The right panel shows the execution log for this job, which is a PowerShell script that creates 10 files with the date '2023-04-15' and prints their names.

```
12 ===== Starting Command Output =====
13 "C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe" -NoLogo -NoProfile -NonInteractive -ExecutionPolicy All -Command "
14     Directorio: C:\agent\_work\1\s
15
16     Mode                LastWriteTime         Length Name
17     ----                -
18     -a----- 15/04/2023    17:18             0 2023-04-15_1.txt
19     -a----- 15/04/2023    17:18             0 2023-04-15_2.txt
20     -a----- 15/04/2023    17:18             0 2023-04-15_3.txt
21     -a----- 15/04/2023    17:18             0 2023-04-15_4.txt
22     -a----- 15/04/2023    17:18             0 2023-04-15_5.txt
23     -a----- 15/04/2023    17:18             0 2023-04-15_6.txt
24     -a----- 15/04/2023    17:18             0 2023-04-15_7.txt
25     -a----- 15/04/2023    17:18             0 2023-04-15_8.txt
26     -a----- 15/04/2023    17:18             0 2023-04-15_9.txt
27     -a----- 15/04/2023    17:18             0 2023-04-15_10.txt
28
29 Finishing: files_fecha
```

Jobs in run #20230415.12

✓ Docker build f... 6s

✓ Docker build ... 5s

✓ SonarQubePre... 8s

✓ SonarQu... 1m 51s

✓ Docker Hub L... 2s

✓ push dockerh... 8s

✓ push dockerh... 7s

✓ print\_hola\_m... 12s

✓ files\_fecha 1s

✓ print\_fecha 1s

✓ Post-job: Ch... <1s

✓ Finalize Job <1s

✓ Report build ... <1s

✓ print\_fecha

View raw log

1 ##[warning]Unable to expand variable 'myDockerHubPassword'. A cyclical reference was detected.

2 ##[warning]Unable to expand variable 'SonarQube\_loginName'. A cyclical reference was detected.

3 Starting: print\_fecha

4 =====

5 Task : PowerShell

6 Description : Run a PowerShell script on Linux, macOS, or Windows

7 Version : 2.212.0

8 Author : Microsoft Corporation

9 Help : <https://docs.microsoft.com/azure/devops/pipelines/tasks/utility/powershell>

10 =====

11 Generating script.

12 ===== Starting Command Output =====

13 "C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe" -NoLogo -NoProfile -NonInteractive -Executio

14 2023-04-15\_1.txt

15 2023-04-15\_10.txt

16 2023-04-15\_2.txt

17 2023-04-15\_3.txt

18 2023-04-15\_4.txt

19 2023-04-15\_5.txt

20 2023-04-15\_6.txt

21 2023-04-15\_7.txt

22 2023-04-15\_8.txt

23 2023-04-15\_9.txt

repositorio

levantar cluster de kubernetes

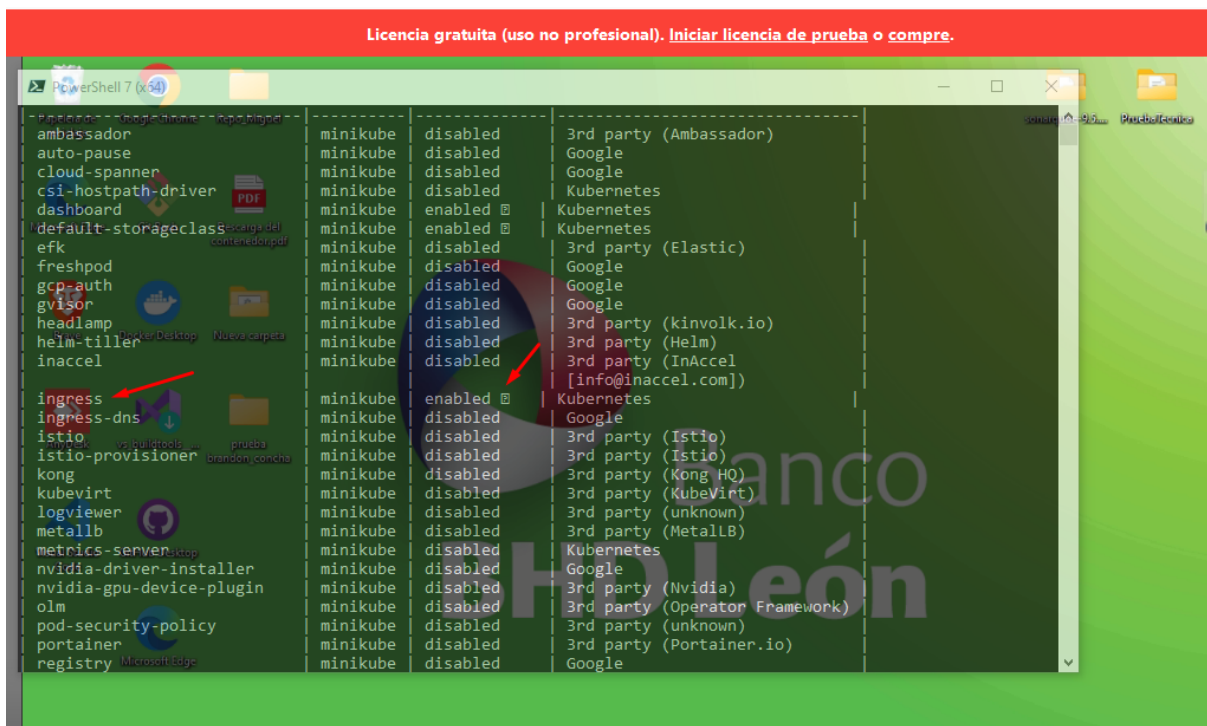
minikube start

```
PowerShell 7 (x64)
PowerShell 7.3.3

A new PowerShell stable release is available: v7.3.4
Upgrade now, or check out the release page at:
https://aka.ms/PowerShell-Release?tag=v7.3.4

PS C:\Users\Admin> minikube start
* minikube v1.26.1 en Microsoft Windows 11 Pro 10.0.22621 Build 22621
* Using the docker driver based on existing profile
* Starting control plane node minikube in cluster minikube
* Pulling base image ...
* Updating the running docker "minikube" container ...
* Preparando Kubernetes v1.24.3 en Docker 20.10.17...
  - Generando certificados y llaves
! initialization failed, will try again: wait: /bin/bash -c "sudo env PATH="/var/lib/minikube/binaries/v1.2
beadm init --config /var/tmp/minikube/kubeadm.yaml --ignore-preflight-errors=DirAvailable--etc-kubernetes-
Available--var-lib-minikube,DirAvailable--var-lib-minikube-etcd,FileAvailable--etc-kubernetes-manifests-kub
aml,FileAvailable--etc-kubernetes-manifests-kube-apiserver.yaml,FileAvailable--etc-kubernetes-manifests-kub
manager.yaml,FileAvailable--etc-kubernetes-manifests-etcd.yaml,Port-10250,Swap,Mem,SystemVerification,FileC
sys-net-bridge-bridge-nf-call-iptables": Process exited with status 1
stdout:
[init] Using Kubernetes version: v1.24.3
[preflight] Running pre-flight checks
[preflight] Pulling images required for setting up a Kubernetes cluster
[preflight] This might take a minute or two, depending on the speed of your internet connection
[preflight] You can also perform this action in beforehand using 'kubeadm config images pull'
[certs] Using certificateDir folder "/var/lib/minikube/certs"
[certs] Using existing ca certificate authority
[certs] Using existing apiserver certificate and key on disk
```

minikube addons list para verificar ingress en enable  
para habilitarlo minikube addons enable ingress



para acceder a cada pod

kubectl exec -it <frontend-deployment-5684f468b7-v2n4m> -- /bin/bash

```
PS C:\repos\samples-dockerhub-1\environment-aks> kubectl exec -it frontend-deployment-5f6b8cf89f-2x6rn -- /bin/bash
root@frontend-deployment-5f6b8cf89f-2x6rn:/usr/src/app# ls -l
total 540
-rwxr-xr-x 1 root root    906 Apr 10 22:11 Dockerfile
-rwxr-xr-x 1 root root    831 Apr 10 21:39 README.md
drwxr-xr-x 1 root root   4096 Apr 16 00:37 node_modules
-rwxr-xr-x 1 root root 528083 Apr 10 21:39 package-lock.json
-rwxr-xr-x 1 root root    979 Apr 10 21:39 package.json
drwxr-xr-x 2 root root   4096 Apr 14 21:55 public
drwxr-xr-x 3 root root   4096 Apr 14 21:55 src
root@frontend-deployment-5f6b8cf89f-2x6rn:/usr/src/app#
```

minikube tunnel

para permitir el acceso a los servicios expuestos en el clúster

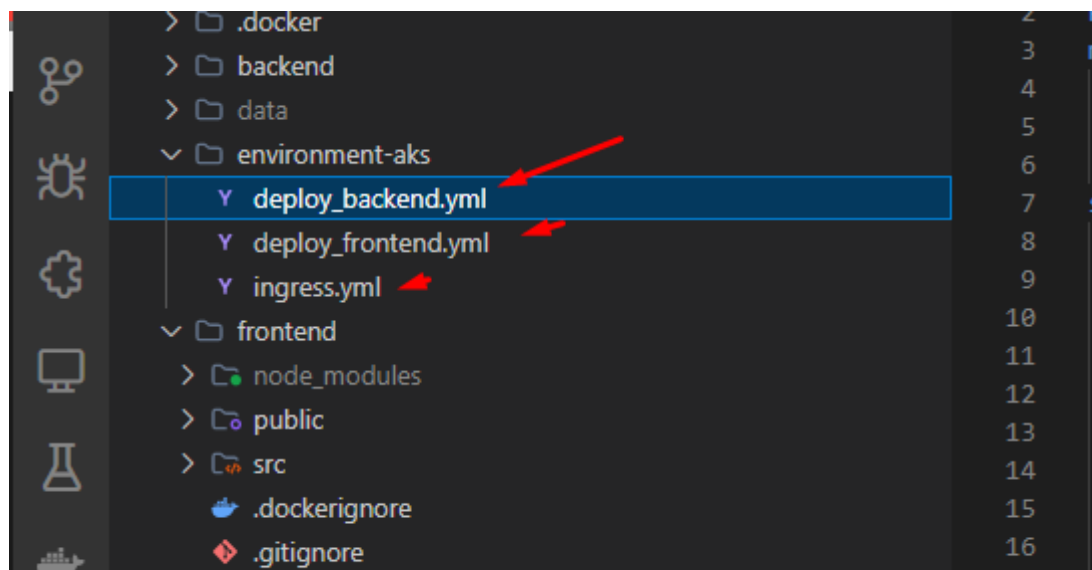
minikube tunnel para crear una conexión de red entre el cluster de Kubernetes y la red local del host en el que se está ejecutando Minikube

```
* Tunnel successfully started
* NOTE: Please do not close this terminal as this process must stay alive for the tunnel to be accessible ...
```

kubectl get services

```
PS C:\repos\samples-dockerhub-1\environment-aks> kubectl get services
NAME          TYPE          CLUSTER-IP   EXTERNAL-IP   PORT(S)    AGE
kubernetes    ClusterIP     10.96.0.1    <none>        443/TCP    3d6h
```

ubico los archivos deploy en yml para realizar el despliegue de cada servicio una para el frontend otra para el backend y uno para el ingress para poder acceder al servicio desde afuera



deploy\_backend.yml



```
Y deploy_backend.yml X
samples-dockerhub-1 > environment-aks > Y deploy_backend.yml > spec > ports > 0 > # targetPort
1  apiVersion: apps/v1
2  kind: Deployment
3  metadata:
4    name: backend
5    labels:
6      app: backend
7  spec:
8    replicas: 1
9    selector:
10     matchLabels:
11       app: backend
12     template:
13       metadata:
14         labels:
15           app: backend
16       spec:
17         containers:
18           - name: backend
19             image: brandon2399/repo_samples_dockerhub_backend:v4
20             ports:
21               - containerPort: 3000
22             env:
23               - name: MONGODB_URI
24                 value: "mongodb+srv://brandon2399:n42P41Go40v6xCo1@cluster0.mjtuyhm.mongodb.net/?retryWrites=true&w=majority/ToDoApp"
25               - name: PORT
26                 value: "3000"
27           - name: mongo
28             image: mongo:4.2.0
29             ports:
30               - containerPort: 27017
31             env:
32               - name: MONGODB_URI
33                 value: ToDoApp
34 ---
35 apiVersion: v1
36 kind: Service
37 metadata:
38   name: backend
39 spec:
40   selector:
41     app: backend
42   ports:
43     - name: http
44       port: 3000
45     targetPort: 3000
```

deploy\_frontend.yml

Y deploy\_frontend.yml X

samples-dockerhub-1 > environment-aks > Y deploy\_frontend.yml > </> spec > </> ten

```
1  apiVersion: apps/v1
2  kind: Deployment
3  metadata:
4    name: frontend-deployment
5  spec:
6    selector:
7      matchLabels:
8        app: frontend
9    replicas: 1
10   template:
11     metadata:
12       labels:
13         app: frontend
14     spec:
15       containers:
16       - name: frontend
17         image: brandon2399/repo_samples_dockerhub_frontend:v2
18         ports:
19         - containerPort: 3000
20         env:
21         - name: API_URL
22           value: http://backend:3000
23   ---
24   apiVersion: v1
25   kind: Service
26   metadata:
27     name: frontend-service
28   spec:
29     selector:
30       app: frontend
31     ports:
32     - name: http
33       protocol: TCP
34       port: 80
35       targetPort: 3000
```

ingress.yml

```
...  ingress.yml X
samples-dockerhub-1 > environment-aks > ingress.yml > spec > rules > 0 > http > path
1  apiVersion: networking.k8s.io/v1
2  kind: Ingress
3  metadata:
4    name: mi-ingress
5    annotations:
6      nginx.ingress.kubernetes.io/rewrite-target: /
7  spec:
8    rules:
9      - host: localhost
10      http:
11        paths:
12          # - path: /api
13          #   pathType: Prefix
14          #   backend:
15          #     service:
16          #       name: backend
17          #       port:
18          #         name: http
19          - path: /
20            pathType: Prefix
21            backend:
22              service:
23                name: frontend-service
24                port:
25                  name: http
```

kubectl apply -f deploy\_frontend.yml

```
kubernetes ClusterIP 10.96.0.1 <none> 443/TCP 3d0h
PS C:\repos\samples-dockerhub-1\environment-aks> kubectl apply -f deploy_frontend.yml
deployment.apps/frontend-deployment created
service/frontend-service created
PS C:\repos\samples-dockerhub-1\environment-aks>
```

kubectl apply -f deploy\_backend.yml

```
service/frontend-service created
PS C:\repos\samples-dockerhub-1\environment-aks> kubectl apply -f deploy_backend.yml
deployment.apps/backend created
service/backend created
PS C:\repos\samples-dockerhub-1\environment-aks>
```

kubectl apply -f ingress.yml

```

PS C:\repos\samples-dockerhub-1\environment-aks> kubectl apply -f ingress.yml
ingress.networking.k8s.io/mi-ingress created
PS C:\repos\samples-dockerhub-1\environment-aks>

```

kubectl get services

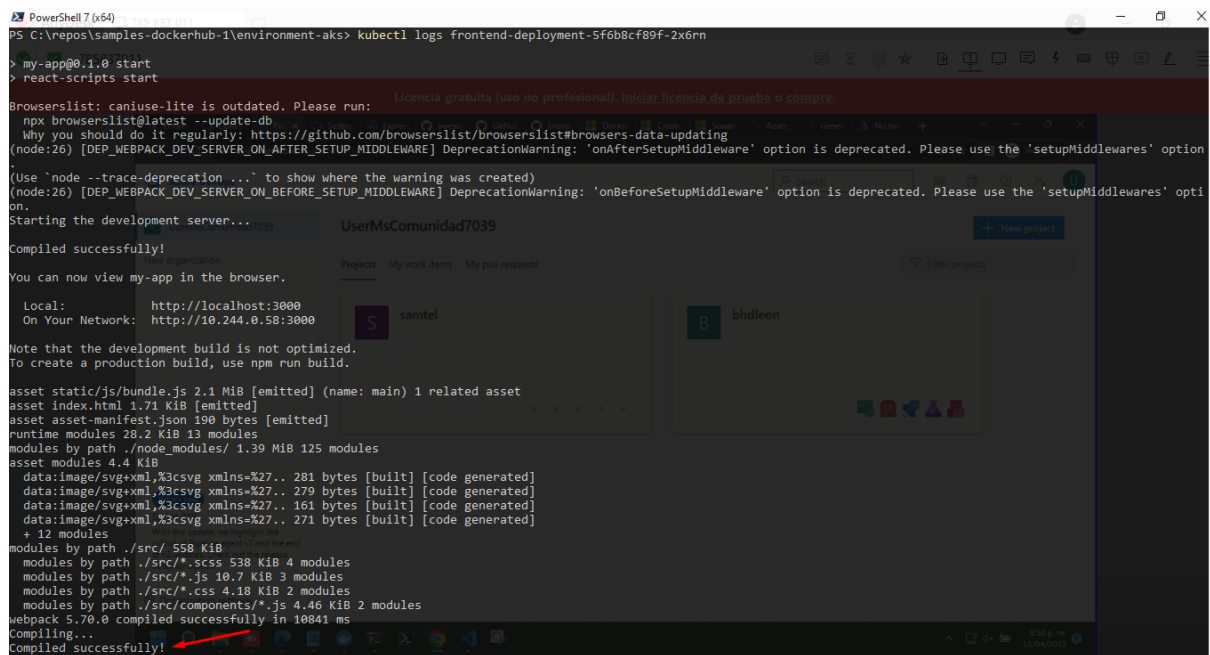
```

PS C:\repos\samples-dockerhub-1\environment-aks> kubectl get services
NAME                TYPE        CLUSTER-IP      EXTERNAL-IP  PORT(S)          AGE
backend              ClusterIP   10.106.140.209  <none>       3000/TCP         113s
frontend-service     ClusterIP   10.99.217.97    <none>       80/TCP           9m24s
kubernetes            ClusterIP   10.96.0.1       <none>       443/TCP          3d7h
PS C:\repos\samples-dockerhub-1\environment-aks>

```

logs del pod frontend

kubectl logs <frontend-deployment-5f6b8cf89f-2x6rn>



```

PS C:\repos\samples-dockerhub-1\environment-aks> kubectl logs frontend-deployment-5f6b8cf89f-2x6rn
> my-app@0.1.0 start
> react-scripts start

Browserslist: caniuse-lite is outdated. Please run:
  npx browserslist@latest --update-db
  Why you should do it regularly: https://github.com/browserslist/browserslist#browsers-data-updating
(node:26) [DEP_WEBPACK_DEV_SERVER_ON_AFTER_SETUP_MIDDLEWARE] DeprecationWarning: 'onAfterSetupMiddleware' option is deprecated. Please use the 'setupMiddlewares' option
(Use 'node --trace-deprecation ...' to show where the warning was created)
(node:26) [DEP_WEBPACK_DEV_SERVER_ON_BEFORE_SETUP_MIDDLEWARE] DeprecationWarning: 'onBeforeSetupMiddleware' option is deprecated. Please use the 'setupMiddlewares' option
Starting the development server...
Compiled successfully!
You can now view my-app in the browser.

  Local:            http://localhost:3000
  On Your Network:  http://10.244.0.58:3000

Note that the development build is not optimized.
To create a production build, use npm run build.

asset static/js/bundle.js 2.1 MiB [emitted] (name: main) 1 related asset
asset index.html 1.71 KiB [emitted]
asset asset-manifest.json 190 bytes [emitted]
runtime modules 20.2 KiB 13 modules
modules by path ./node_modules/ 1.39 MiB 125 modules
asset modules 4.4 KiB
  data:image/svg+xml,%3csvg xmlns=%27.. 281 bytes [built] [code generated]
  data:image/svg+xml,%3csvg xmlns=%27.. 279 bytes [built] [code generated]
  data:image/svg+xml,%3csvg xmlns=%27.. 161 bytes [built] [code generated]
  data:image/svg+xml,%3csvg xmlns=%27.. 271 bytes [built] [code generated]
+ 12 modules
modules by path ./src/ 550 KiB
  modules by path ./src/*.*css 530 KiB 4 modules
  modules by path ./src/*.*js 10.7 KiB 3 modules
  modules by path ./src/*.*css 4.18 KiB 2 modules
  modules by path ./src/components/*.*js 4.46 KiB 2 modules
webpack 5.70.0 compiled successfully in 10841 ms
Compiling...
Compiled successfully!

```

logs del pod backend

## kubectl logs <backend-6768bdf8c-xjhd2>

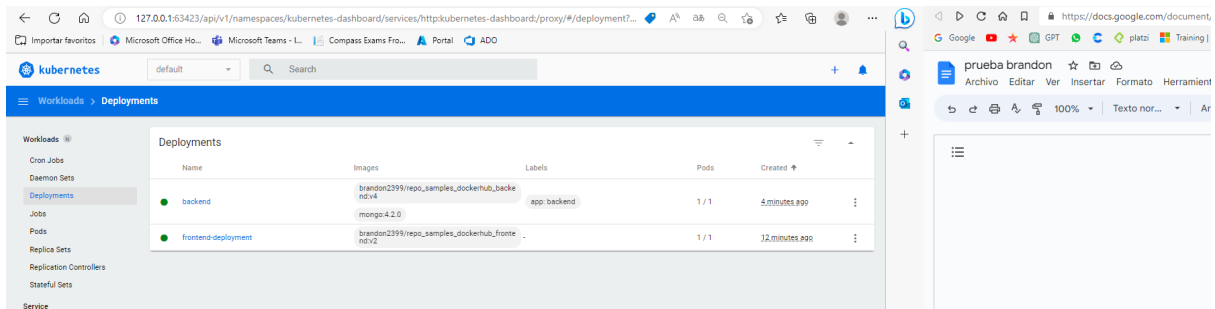
```
PS C:\repos\samples-dockerhub-1\environment-aks> kubectl logs backend-6768bdf8c-xjhd2
Defaulted container "backend" out of: backend, mongo
[32m[nodemon] 2.0.3+ [39m Build Job se completó con el resultado: Canceled
[33m[nodemon] to restart at any time, enter `rs`+[39m
[33m[nodemon] watching path(s): *.*+[39m
[33m[nodemon] watching extensions: js,mjs,json+[39m
[32m[nodemon] starting `node server.js`+[39m
{
  PORT: 3000,
  MONGODB_URI: 'mongodb+srv://brandon2399:n42P4lG040v6xCo1@cluster0.mjtuyhm.mongodb.net/?retryWrites=true&w=majority/ToDoApp'
}
MongoDB connection with retry
MongoDB is connected
Server is up on port 3000
PS C:\repos\samples-dockerhub-1\environment-aks> kubectl logs backend-6768bdf8c-xjhd2
Defaulted container "backend" out of: backend, mongo
[32m[nodemon] 2.0.3+ [39m Build Job se completó con el resultado: Canceled
[33m[nodemon] to restart at any time, enter `rs`+[39m
[33m[nodemon] watching path(s): *.*+[39m
[33m[nodemon] watching extensions: js,mjs,json+[39m
[32m[nodemon] starting `node server.js`+[39m
{
  PORT: 3000,
  MONGODB_URI: 'mongodb+srv://brandon2399:n42P4lG040v6xCo1@cluster0.mjtuyhm.mongodb.net/?retryWrites=true&w=majority/ToDoApp'
}
MongoDB connection with retry
MongoDB is connected
Server is up on port 3000
PS C:\repos\samples-dockerhub-1\environment-aks>
```

## minikube dashboard

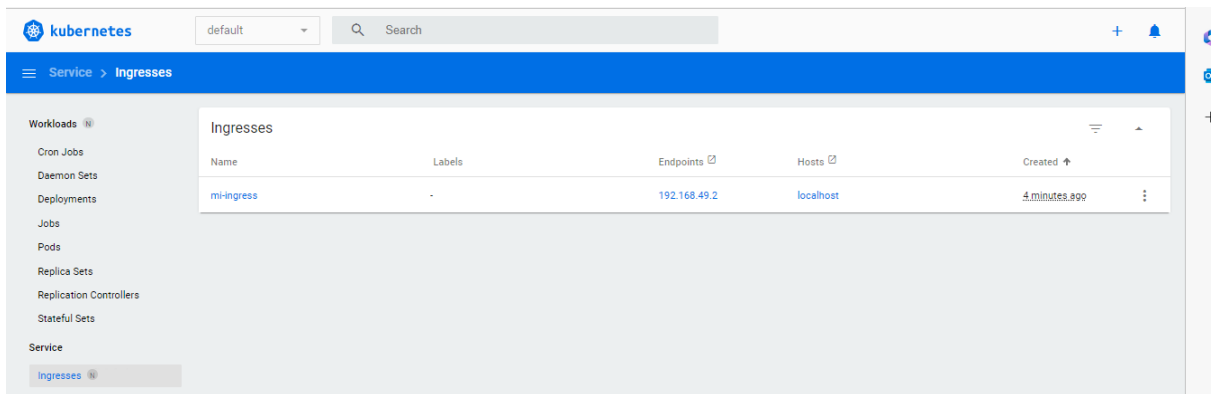
The screenshot shows the Kubernetes Dashboard interface. The top navigation bar includes the Kubernetes logo, a search bar, and a user profile icon. The left sidebar contains a menu with categories like Workloads, Service, Config and Storage, and their respective sub-items. The main content area is titled 'Workload Status' and features three large green circles representing the status of Deployments, Pods, and Replica Sets, each with a 'Running: 2' indicator. Below this, a 'Deployments' table lists the deployed workloads.

Name	Images	Labels	Pods	Created
backend	brandon2399/repo_samples_dockerhub_backend:v4 mongo:4.2.0	app: backend	1 / 1	4 minutes ago
frontend-deployment	brandon2399/repo_samples_dockerhub_frontend:v2		1 / 1	11 minutes ago

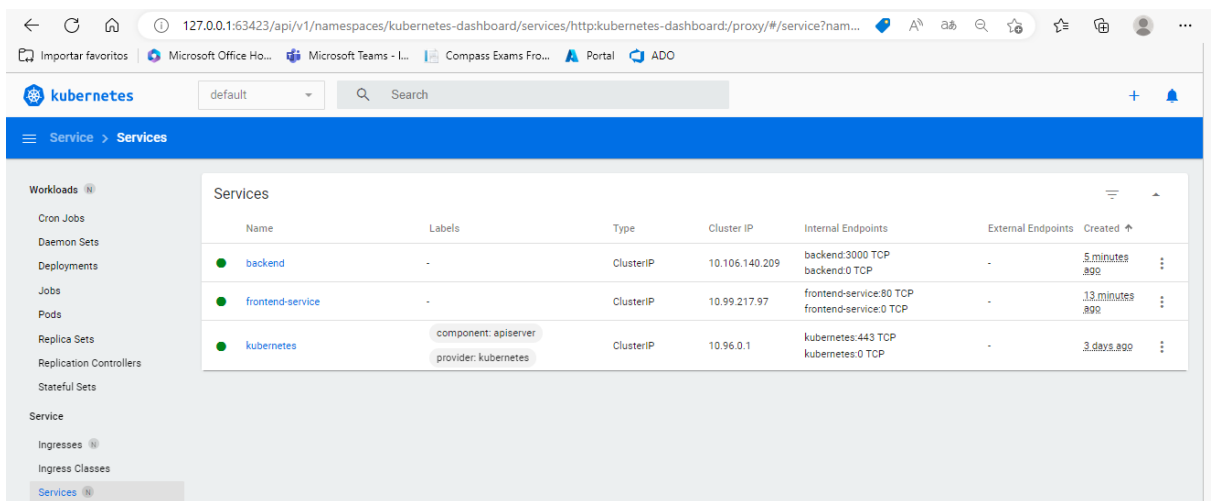
## deployments



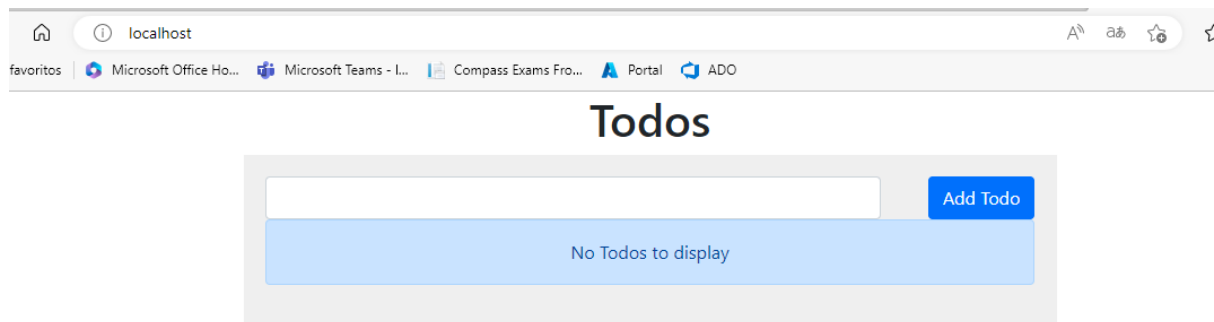
## service ingress



## services

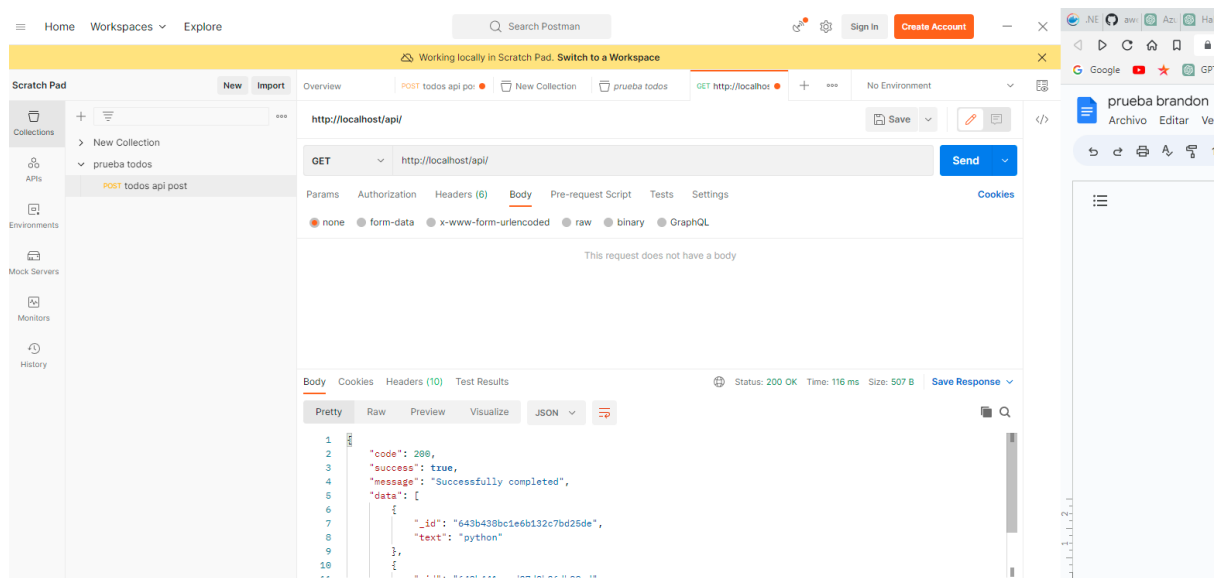


## aplicación levantada desde kubernetes

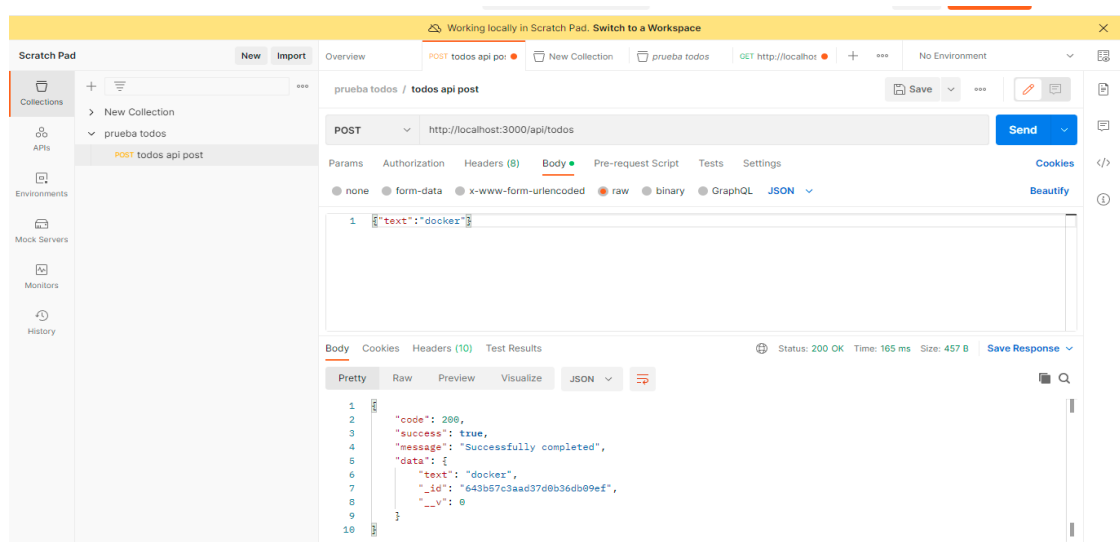


pruebas desde postman

get `http://localhost/api/`



post `http://localhost:3000/api/todos`

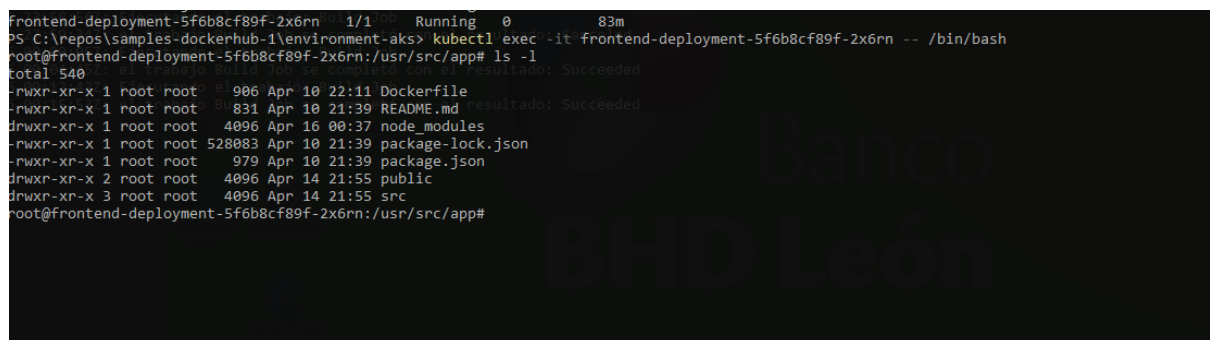


localhost



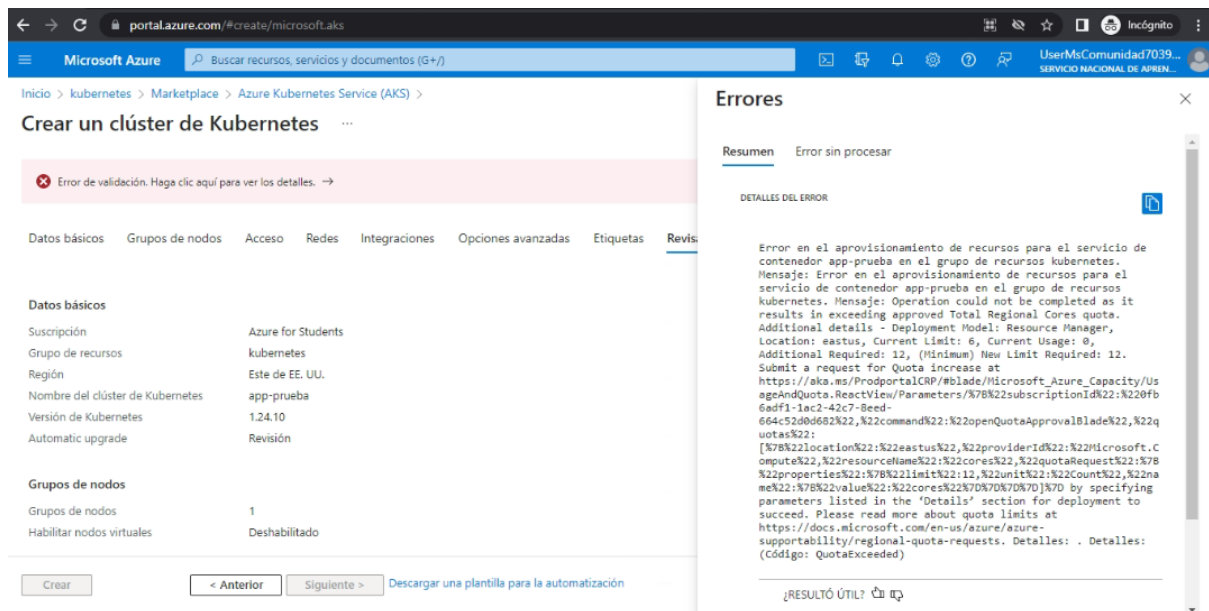
para acceder a cada pod

kubectl exec -it <frontend-deployment-5684f468b7-v2n4m> -- /bin/bash

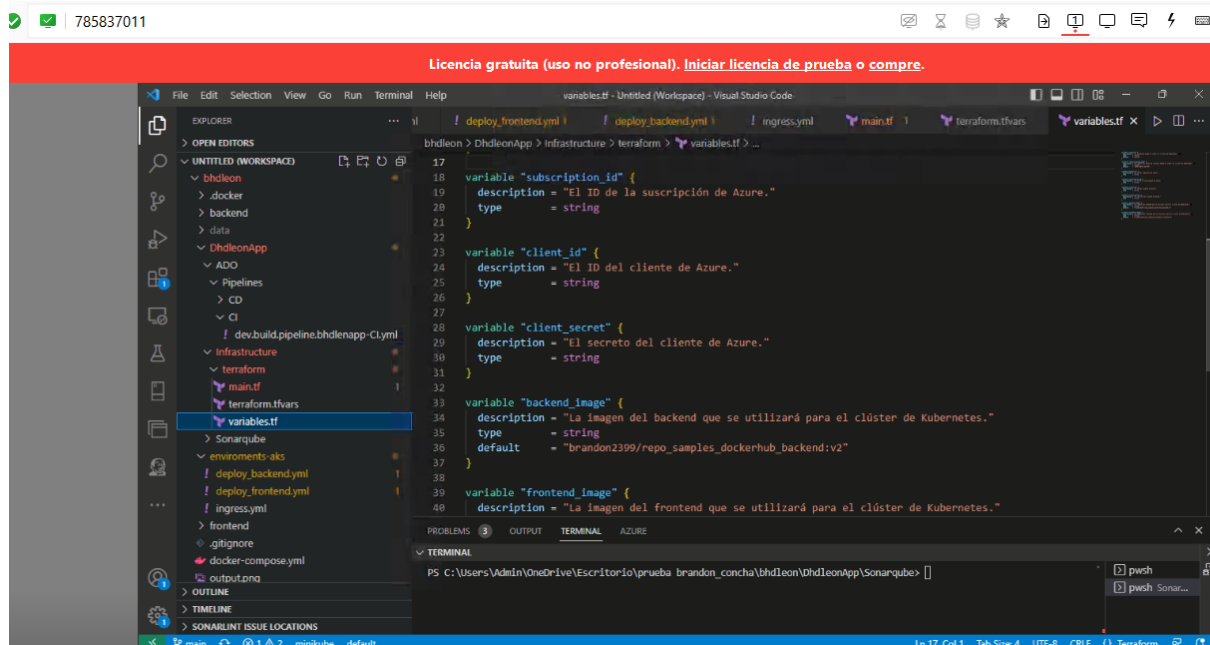
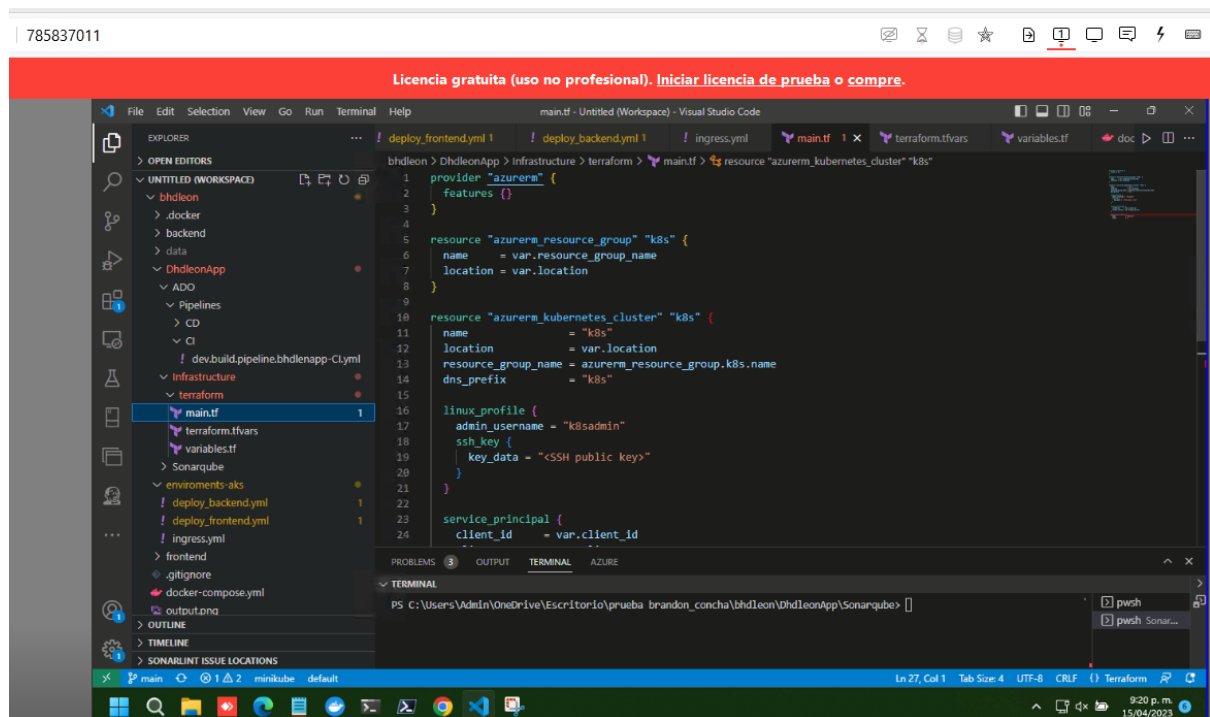




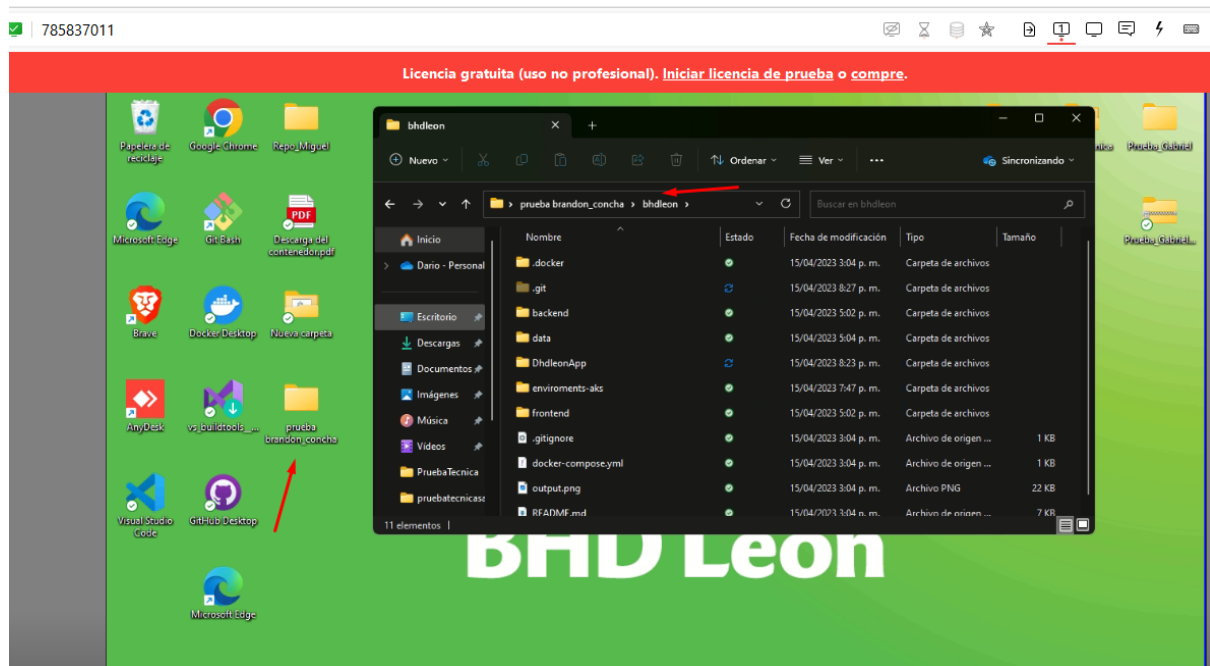
debido a que la cuenta educativa que logre conseguir de azure tiene una restricción en azure directory, intente utilizar otra opcion utilizando una autenticación diferente en Terraform, como la autenticación interactiva pero no me funciono



sin embargo se dejan los archivos creados de terraform



se deja carpeta con todos los archivos del repo



este documento tiene una carpeta compartida con el pdf de la realizacion de la prueba con scree y videos

[https://docs.google.com/document/d/1fXS\\_GXinMzqtbK7FFuQX9pQIF5wNWKm\\_JWD8Ca0XwRw/edit](https://docs.google.com/document/d/1fXS_GXinMzqtbK7FFuQX9pQIF5wNWKm_JWD8Ca0XwRw/edit)

repositorio publico

<https://github.com/brandon2399/docker-samples-mas-kubernetes>