

Cloud Computing

CAT-2 Project

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Problem Statement:

The motive is to play music player efficiently and with some of the functions efficiently so that the music webpage were created with some front end design through that music and some images respectively.

Problem Solution:

Our attempt to move this music player for some users who likes and it used to travel long with the help of Docker container and Kubernetes.

DOCKER FILE:

```
Dockerfile X

024pricing-plans > dist > Dockerfile > FROM

1 FROM nginx:alpine
2 COPY . /usr/share/nginx/html
```

BUILDING DOCKER IMAGE:

```
C:\Windows\System32\cmd.exe

[+] Building 0.4s (2/2) FINISHED
-> [internal] load build definition from Dockerfile
-> => transferring dockerfile: 28 0.1s
-> [internal] load .dockerignore
-> => transferring context: 28 0.0s
failed to solve with frontend dockerfile.v0: failed to read dockerfile: open /var/lib/docker/tmp/buildkit-mount083284864/Dockerfile: no such file or directory

[+] Building 27.7s (7/7) FINISHED
-> [internal] load build definition from Dockerfile
-> => transferring dockerfile: 848 0.0s
-> [internal] load .dockerignore
-> => transferring context: 28 0.0s
-> [internal] load metadata for docker.io/library/nginx:alpine 17.1s
-> [internal] load build context
-> => transferring context: 315.55MB 5.9s
-> [1/2] FROM docker.io/library/nginx:alpine@sha256:da9c94bec1da829ebd52431a84582ec471c8e548ffb2cedbf36260fd9bd1 0.6s
-> resolve docker.io/library/nginx:alpine@sha256:da9c94bec1da829ebd52431a84582ec471c8e548ffb2cedbf36260fd9bd1 0.0s
-> sha256:bef258ac1f0dc25706a1c47c1a600c93f87be4b4ca4a5e4752b3eade75330c09 8.89kB / 8.89kB 0.0s
-> sha256:59b1c3509f33515622619af21ed55bbe26d24913cedbca106468a5fb37a50c3 2.82MB / 2.82MB 1.9s
-> sha256:da9c94bec1da829ebd52431a84582ec471c8e548ffb2cedbf36260fd9bd1d4d3 1.65kB / 1.65kB 0.0s
-> sha256:050395690d832fae11b007fbbfba77d0bba12bf72bc0dca8ac03e09b1098580f 1.57kB / 1.57kB 0.0s
-> sha256:0d6ba539f6489d12676d7f61628427d067243ba4a3a512c3e28813b977cb3b0e 7.34MB / 7.34MB 3.6s
-> sha256:5288d7ad7a7f84bdd19c1e8f0abb8684b5338f3da86fe9ae1d7f0e9bc2de6595 601B / 601B 0.9s
-> sha256:39e51c61c033442d00c40a30b2a9ed01f40205875fbd8664c50b4dc3e99ad5cf 894B / 894B 3.6s
-> extracting sha256:59b1c3509f33515622619af21ed55bbe26d24913cedbca106468a5fb37a50c3 0.9s
-> sha256:eeef71c6f4a82b2afd01f92bdf6be0079364d03020e8a2c569062e1c06d3822b 665B / 665B 4.5s
-> sha256:f2303c6c88653b9ae739d50f611c170b9d97d161c6432409c680feb46a5f112f 1.39kB / 1.39kB 4.9s
-> extracting sha256:8d6ba539f6489d12676d7f61628427d067243ba4a3a512c3e28813b977cb3b0e 0.8s
-> extracting sha256:5288d7ad7a7f84bdd19c1e8f0abb8684b5338f3da86fe9ae1d7f0e9bc2de6595 0.0s
-> extracting sha256:39e51c61c033442d00c40a30b2a9ed01f40205875fbd8664c50b4dc3e99ad5cf 0.0s
-> extracting sha256:eeef71c6f4a82b2afd01f92bdf6be0079364d03020e8a2c569062e1c06d3822b 0.0s
-> extracting sha256:f2303c6c88653b9ae739d50f611c170b9d97d161c6432409c680feb46a5f112f 0.0s
-> [2/2] COPY . /usr/share/nginx/html 2.2s
-> exporting to image 1.6s
-> writing image sha256:20b95bbc22755482e9e1b6b4906740ecc9dffb55b16a22c32bd93038e258e80a 0.0s
-> naming to docker.io/library/music:vi 0.0s

Use 'docker scan' to run Snyk tests against images and learn how to fix them

D:\CLASS\19MAM57-Full Stack Web Development\Music player>
```

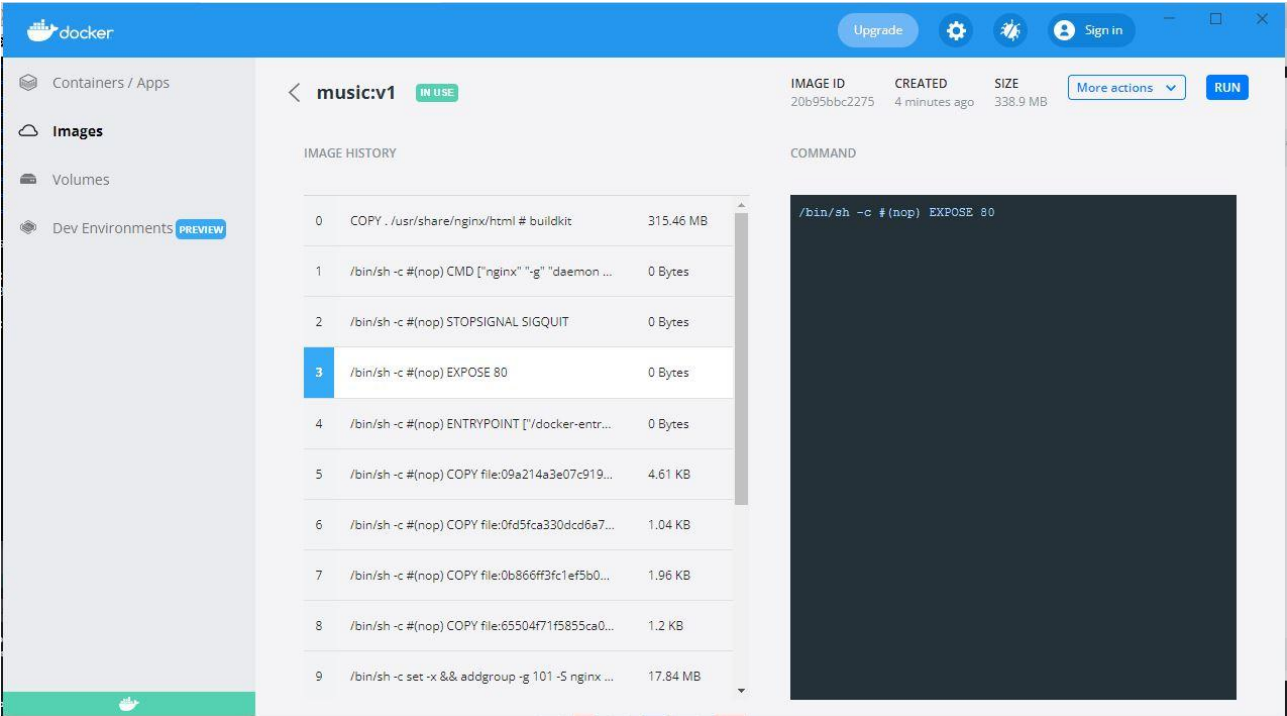
RUNNING TIME:

```
D:\CLASS\19MAM57-Full Stack Web Development\Music player>docker run -d -p 80:80 music:v1
d3fbb8463fb396e01fa74c83abd86a1a8d815a34884d89a7e39da21b0a8314a6
```

IMAGE CACHING:



LAYER CACHING:



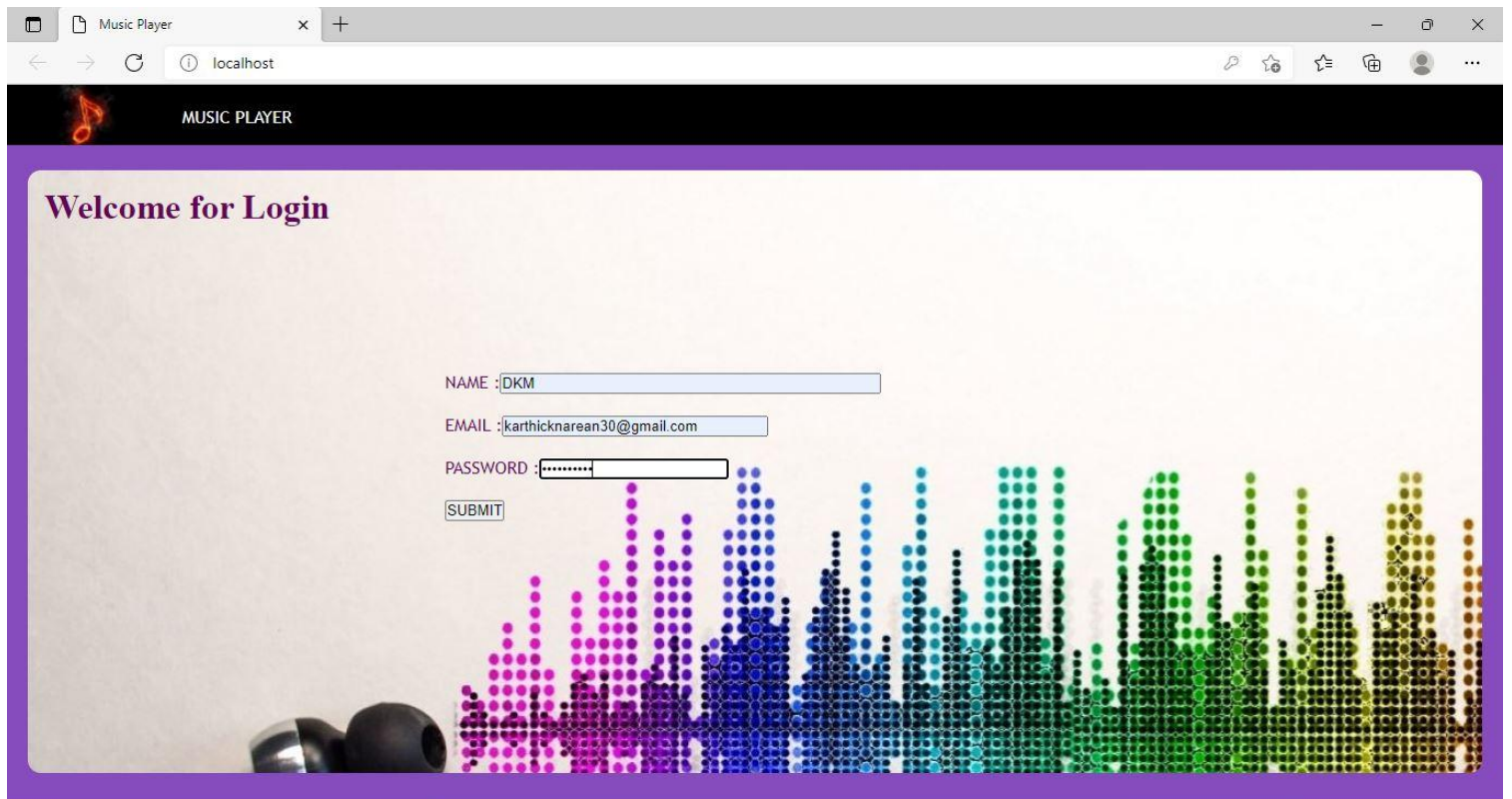
CONTAINER:



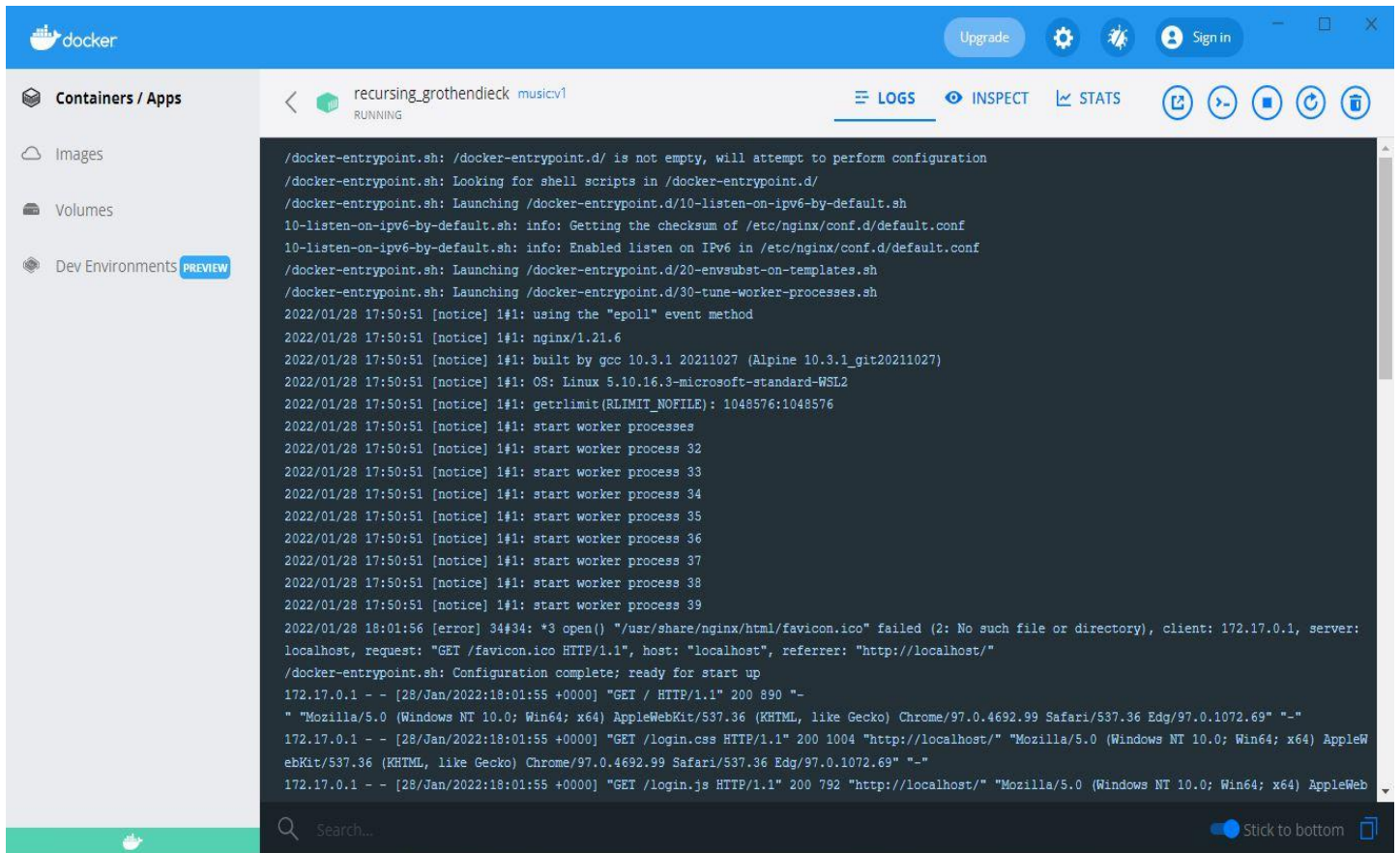
recurring_grothendieck musicv1

RUNNING PORT: 80

CONTAINER SERVICE EXPOSURE:

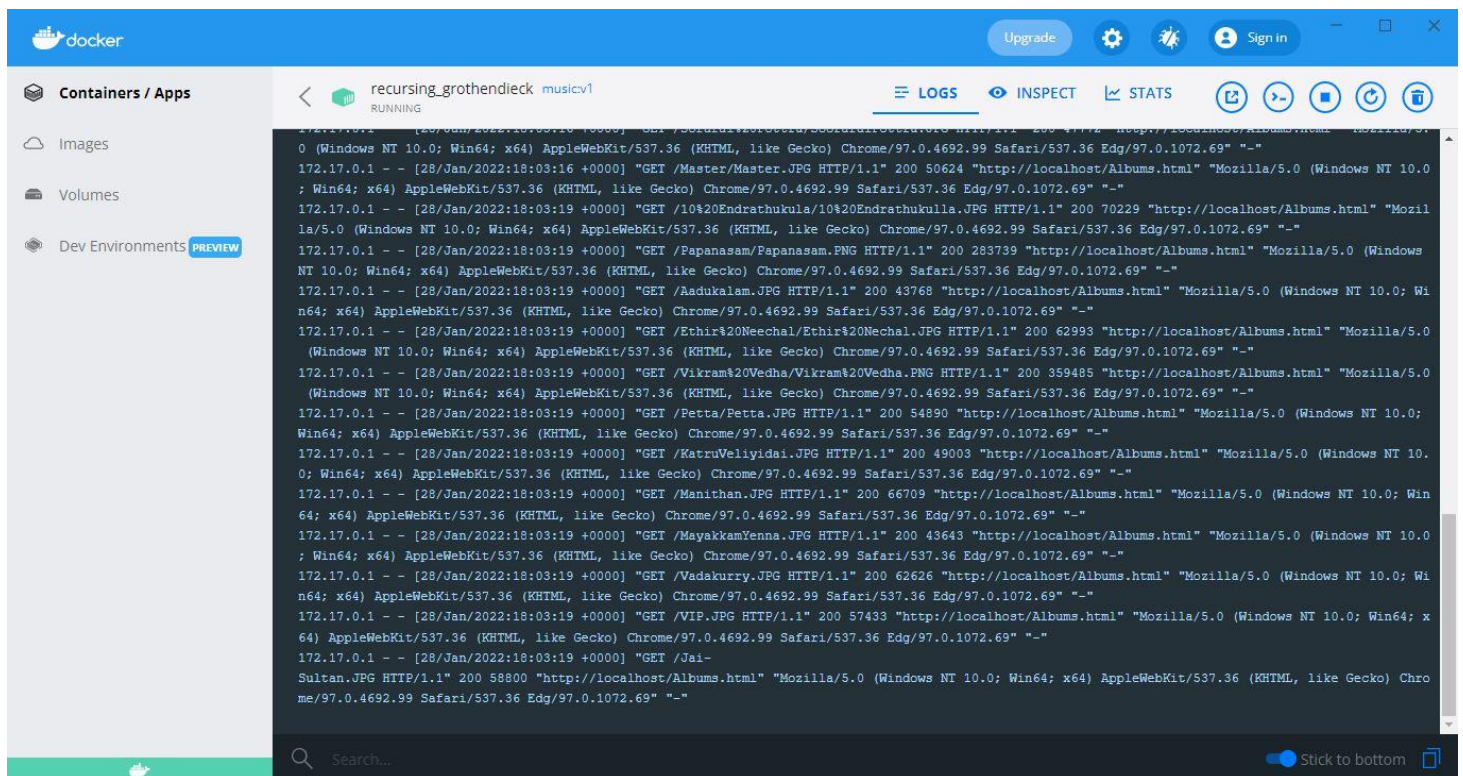


DOCKER LOGS:



The screenshot shows the Docker Desktop interface. On the left, there's a sidebar with 'Containers / Apps' selected. The main area displays the logs for a container named 'recurring_grothendieck musicv1'. The logs show the container's startup sequence, including the execution of various scripts and the initialization of worker processes. A notice indicates the use of the 'epoll' event method. The logs also show the container's configuration and the start of worker processes. At the bottom, there's a search bar and a 'Stick to bottom' button.

```
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
2022/01/28 17:50:51 [notice] 1#1: using the "epoll" event method
2022/01/28 17:50:51 [notice] 1#1: nginx/1.21.6
2022/01/28 17:50:51 [notice] 1#1: built by gcc 10.3.1 20211027 (Alpine 10.3.1_git20211027)
2022/01/28 17:50:51 [notice] 1#1: OS: Linux 5.10.16.3-microsoft-standard-WSL2
2022/01/28 17:50:51 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2022/01/28 17:50:51 [notice] 1#1: start worker processes
2022/01/28 17:50:51 [notice] 1#1: start worker process 32
2022/01/28 17:50:51 [notice] 1#1: start worker process 33
2022/01/28 17:50:51 [notice] 1#1: start worker process 34
2022/01/28 17:50:51 [notice] 1#1: start worker process 35
2022/01/28 17:50:51 [notice] 1#1: start worker process 36
2022/01/28 17:50:51 [notice] 1#1: start worker process 37
2022/01/28 17:50:51 [notice] 1#1: start worker process 38
2022/01/28 17:50:51 [notice] 1#1: start worker process 39
2022/01/28 18:01:56 [error] 34#34: *3 open() "/usr/share/nginx/html/favicon.ico" failed (2: No such file or directory), client: 172.17.0.1, server:
localhost, request: "GET /favicon.ico HTTP/1.1", host: "localhost", referer: "http://localhost/"
/docker-entrypoint.sh: Configuration complete; ready for start up
172.17.0.1 - - [28/Jan/2022:18:01:55 +0000] "GET / HTTP/1.1" 200 890 "-"
"Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.99 Safari/537.36 Edg/97.0.1072.69" "-"
172.17.0.1 - - [28/Jan/2022:18:01:55 +0000] "GET /login.css HTTP/1.1" 200 1004 "http://localhost/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleW
ebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.99 Safari/537.36 Edg/97.0.1072.69" "-"
172.17.0.1 - - [28/Jan/2022:18:01:55 +0000] "GET /login.js HTTP/1.1" 200 792 "http://localhost/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWeb
```



This screenshot shows the continuation of the Docker Desktop interface. The logs for the container 'recurring_grothendieck musicv1' are displayed, showing a series of HTTP requests and responses. The logs indicate that the container is serving static files from the /usr/share/nginx/html directory. The requests are for various files, including CSS and JavaScript files, and the responses are 200 OK. The logs also show the user agent strings for the requests, which include Mozilla/5.0 and AppleWebKit/537.36.

```
172.17.0.1 - - [28/Jan/2022:18:03:16 +0000] "GET /usr/share/nginx/html/favicon.ico HTTP/1.1" 200 1004 "http://localhost/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.99 Safari/537.36 Edg/97.0.1072.69" "-"
172.17.0.1 - - [28/Jan/2022:18:03:16 +0000] "GET /Master/Master.JPG HTTP/1.1" 200 50624 "http://localhost/Albums.html" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.99 Safari/537.36 Edg/97.0.1072.69" "-"
172.17.0.1 - - [28/Jan/2022:18:03:19 +0000] "GET /10%20Endrathukula/10%20Endrathukulla.JPG HTTP/1.1" 200 70229 "http://localhost/Albums.html" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.99 Safari/537.36 Edg/97.0.1072.69" "-"
172.17.0.1 - - [28/Jan/2022:18:03:19 +0000] "GET /Papanasam/Papanasam.PNG HTTP/1.1" 200 283739 "http://localhost/Albums.html" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.99 Safari/537.36 Edg/97.0.1072.69" "-"
172.17.0.1 - - [28/Jan/2022:18:03:19 +0000] "GET /Aadukalam.JPG HTTP/1.1" 200 43768 "http://localhost/Albums.html" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.99 Safari/537.36 Edg/97.0.1072.69" "-"
172.17.0.1 - - [28/Jan/2022:18:03:19 +0000] "GET /Ethir%20Neechal/Ethir%20Neechal.JPG HTTP/1.1" 200 62993 "http://localhost/Albums.html" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.99 Safari/537.36 Edg/97.0.1072.69" "-"
172.17.0.1 - - [28/Jan/2022:18:03:19 +0000] "GET /Vikram%20Vedha/Vikram%20Vedha.PNG HTTP/1.1" 200 359485 "http://localhost/Albums.html" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.99 Safari/537.36 Edg/97.0.1072.69" "-"
172.17.0.1 - - [28/Jan/2022:18:03:19 +0000] "GET /Petta/Petta.JPG HTTP/1.1" 200 54890 "http://localhost/Albums.html" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.99 Safari/537.36 Edg/97.0.1072.69" "-"
172.17.0.1 - - [28/Jan/2022:18:03:19 +0000] "GET /Katraveliyidai.JPG HTTP/1.1" 200 49003 "http://localhost/Albums.html" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.99 Safari/537.36 Edg/97.0.1072.69" "-"
172.17.0.1 - - [28/Jan/2022:18:03:19 +0000] "GET /Manithan.JPG HTTP/1.1" 200 66709 "http://localhost/Albums.html" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.99 Safari/537.36 Edg/97.0.1072.69" "-"
172.17.0.1 - - [28/Jan/2022:18:03:19 +0000] "GET /MayakkamYenna.JPG HTTP/1.1" 200 43643 "http://localhost/Albums.html" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.99 Safari/537.36 Edg/97.0.1072.69" "-"
172.17.0.1 - - [28/Jan/2022:18:03:19 +0000] "GET /Vadakurri.JPG HTTP/1.1" 200 62626 "http://localhost/Albums.html" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.99 Safari/537.36 Edg/97.0.1072.69" "-"
172.17.0.1 - - [28/Jan/2022:18:03:19 +0000] "GET /VIP.JPG HTTP/1.1" 200 57433 "http://localhost/Albums.html" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.99 Safari/537.36 Edg/97.0.1072.69" "-"
172.17.0.1 - - [28/Jan/2022:18:03:19 +0000] "GET /Jai-Sultan.JPG HTTP/1.1" 200 58800 "http://localhost/Albums.html" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.99 Safari/537.36 Edg/97.0.1072.69" "-"
```

EXECUTING INTO THE CONTAINER:

```
D:\CLASS\19MAM57-Full Stack Web Development\Music player>docker exec -it recursing_grothendieck sh
/ # ls
bin          docker-entrypoint.sh  lib          opt          run          sys          var
dev          etc                  media        proc         sbin         tmp
docker-entrypoint.d  home                mnt         root        srv          usr
/ # exit
```

KUBERNETES:

STARTING MINI-CUBE:

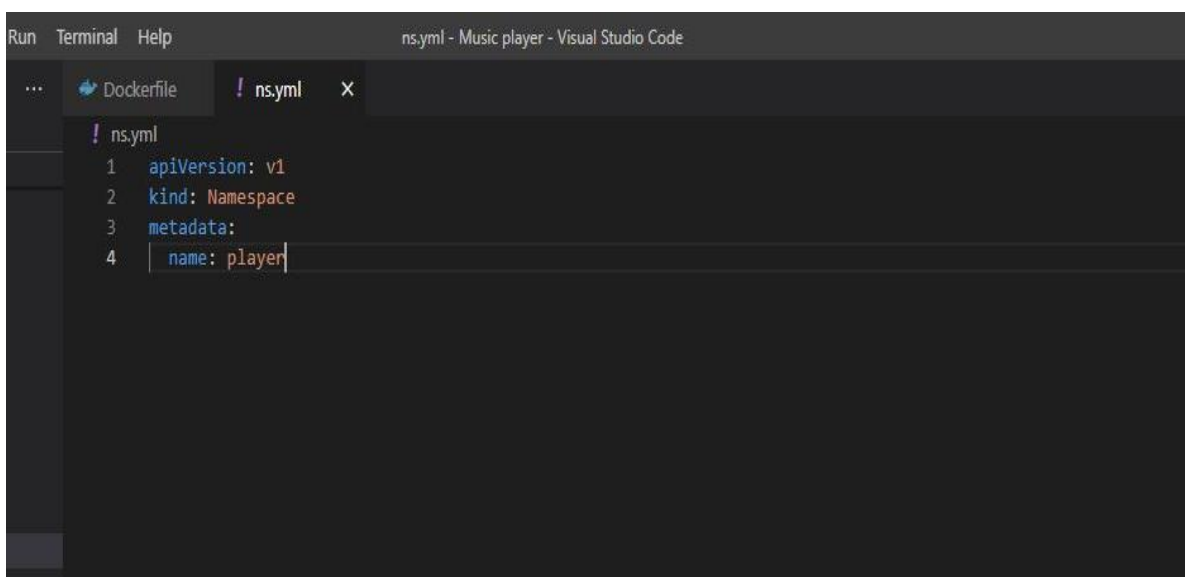
```
D:\CLASS\19MAM57-Full Stack Web Development\Music player>minikube image load music:v1
```

CREATING NAMESPACE:

```
D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl get namespaces
NAME                STATUS    AGE
default             Active    46m
kube-node-lease     Active    46m
kube-public         Active    46m
kube-system         Active    46m

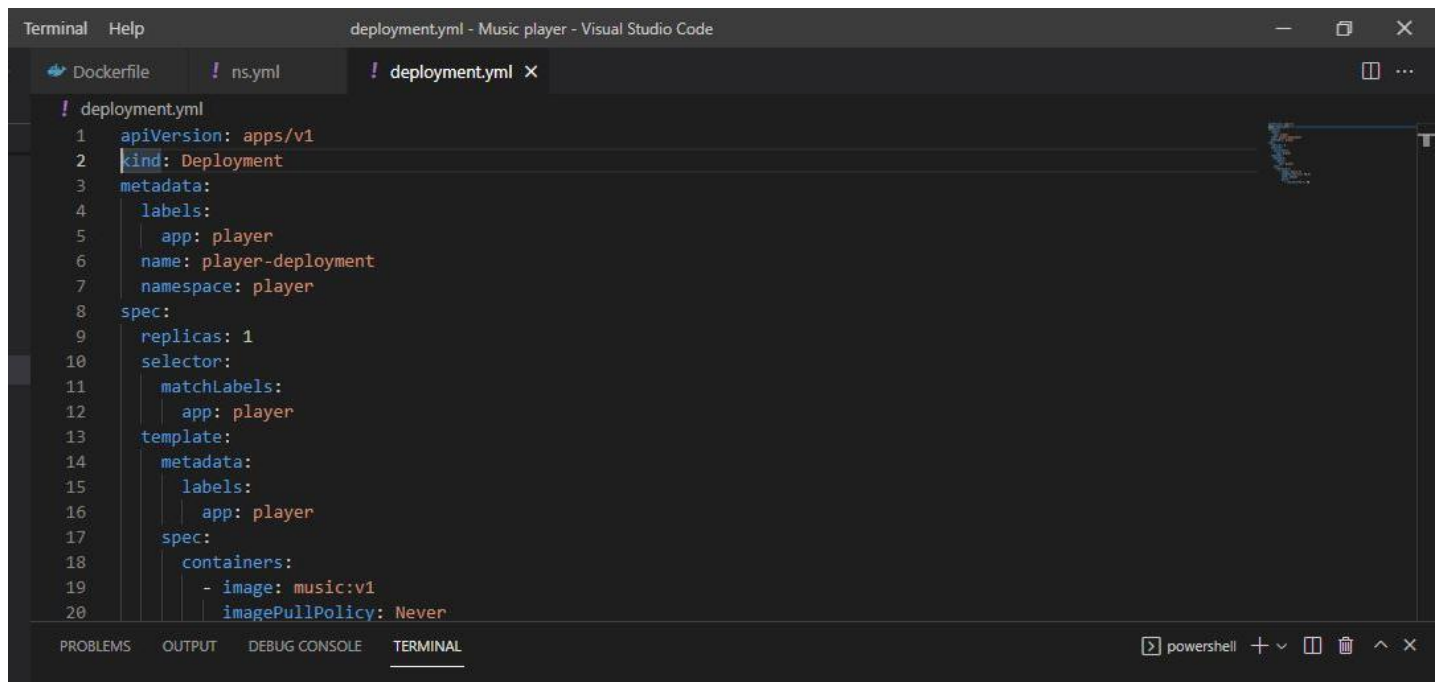
D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl apply -f ns.yml
namespace/player created

D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl get namespaces
NAME                STATUS    AGE
default             Active    48m
kube-node-lease     Active    48m
kube-public         Active    48m
kube-system         Active    48m
player              Active    27s
```



CREATING POD:

```
D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl apply -f deployment.yml
deployment.apps/player-deployment created
```



The screenshot shows the Visual Studio Code interface with the 'deployment.yml' file open. The file content is as follows:

```
! deployment.yml
1  apiVersion: apps/v1
2  kind: Deployment
3  metadata:
4    labels:
5      app: player
6    name: player-deployment
7    namespace: player
8  spec:
9    replicas: 1
10   selector:
11     matchLabels:
12       app: player
13   template:
14     metadata:
15       labels:
16         app: player
17     spec:
18       containers:
19         - image: music:v1
20           imagePullPolicy: Never
```

The terminal at the bottom shows the command to apply the deployment and the resulting pod deployment status:

```
D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl apply -f deployment.yml
deployment.apps/player-deployment created

D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl get deployments -n player
NAME                READY   UP-TO-DATE   AVAILABLE   AGE
player-deployment   1/1     1            1           5m6s

D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl get pods -n player
NAME                                READY   STATUS    RESTARTS   AGE
player-deployment-868d6684d6-bx4pr  1/1     Running   0           5m29s
```

POD DEPLOYMENT:

```
D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl apply -f deployment.yml
deployment.apps/player-deployment created

D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl get deployments -n player
NAME                READY   UP-TO-DATE   AVAILABLE   AGE
player-deployment   1/1     1            1           5m6s

D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl get pods -n player
NAME                                READY   STATUS    RESTARTS   AGE
player-deployment-868d6684d6-bx4pr  1/1     Running   0           5m29s
```


CONFIGURING DEPLOY POD WITH 2 REPLICAS:

```
D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl apply -f deployment.yml
deployment.apps/player-deployment configured

D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl get deployments -n player
NAME                READY   UP-TO-DATE   AVAILABLE   AGE
player-deployment   2/2     2             2           16m

D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl get pods -n player
NAME                                     READY   STATUS    RESTARTS   AGE
player-deployment-868d6684d6-bx4pr      1/1     Running   0           16m
player-deployment-868d6684d6-qwcjl      1/1     Running   0           34s
```

SERVICE EXPOSURE:

```
! deployment.yaml ! service.yaml X
024pricing-plans > dist > ! service.yaml
1   apiVersion: v1
2   kind: Service

D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl get service
NAME      TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)   AGE
kubernetes  ClusterIP   10.96.0.1    <none>        443/TCP   79m

D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl apply -f service.yaml
service/player-service created

D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl get service -n player
NAME          TYPE          CLUSTER-IP   EXTERNAL-IP   PORT(S)          AGE
player-service  LoadBalancer  10.105.0.5    <pending>     8080:30000/TCP   28s

D:\CLASS\19MAM57-Full Stack Web Development\Music player>minikube service player-service -n player
! Executing "docker container inspect minikube --format={{.State.Status}}" took an unusually long time: 2.6813496s
* Restarting the docker service may improve performance.

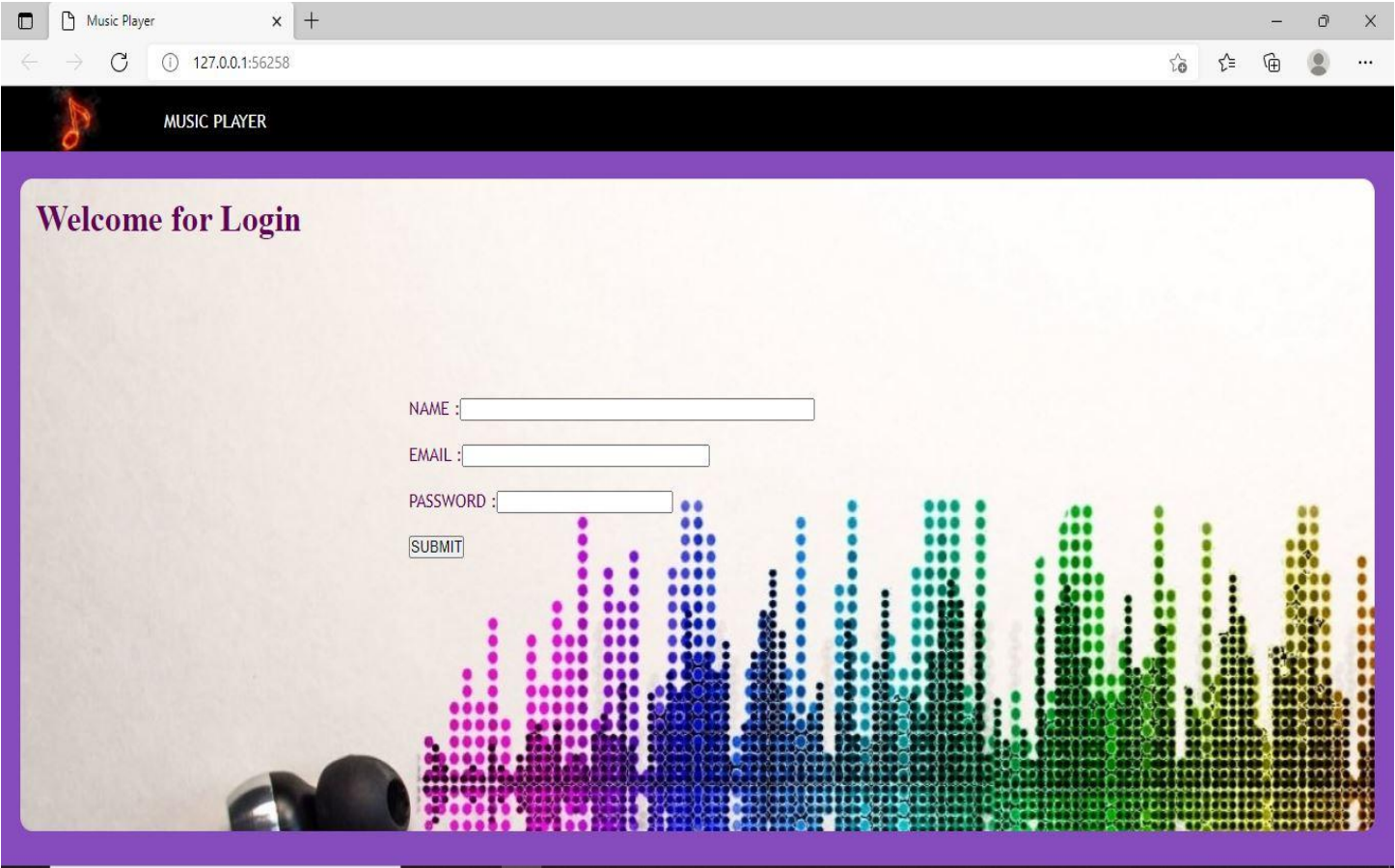
-----|-----|-----|-----|
| NAMESPACE | NAME       | TARGET PORT | URL                |
-----|-----|-----|-----|
| player     | player-service | 8080        | http://192.168.49.2:30000 |
-----|-----|-----|-----|

* Starting tunnel for service player-service.

-----|-----|-----|-----|
| NAMESPACE | NAME       | TARGET PORT | URL                |
-----|-----|-----|-----|
| player     | player-service |             | http://127.0.0.1:56258 |
-----|-----|-----|-----|

* Opening service player/player-service in default browser...
! Because you are using a Docker driver on windows, the terminal needs to be open to run it.
```

HOSTED WEBPAGE:



RESOURCE LIMITATION:

```
D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl describe pod player-deployment-dd568946-527vk -n player
Name:          player-deployment-dd568946-527vk
Namespace:     player
Priority:       0
Node:          minikube/192.168.49.2
Start Time:    Sat, 29 Jan 2022 00:32:56 +0530
Labels:        app=player
               pod-template-hash=dd568946
Annotations:   <none>
Status:        Pending
IP:            <none>
IPs:           <none>
Controlled By: ReplicaSet/player-deployment-dd568946
Containers:
  player:
    Container ID:
    Image:        music:v1
    Image ID:
    Port:         80/TCP
    Host Port:    0/TCP
    State:        Waiting
      Reason:     ContainerCreating
    Ready:        False
    Restart Count: 0
    Limits:
      cpu:        100m
      memory:     1Mi
    Requests:
      cpu:        100m
      memory:     1Mi
    Environment:  <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-wfq9k (ro)
Conditions:
  Type             Status
  Initialized       True
  Ready             False
  ContainersReady   False
  PodScheduled      True
Volumes:
  kube-api-access-wfq9k:
    Type:          Projected (a volume that contains injected data from multiple sources)
    TokenExpirationSeconds: 3607
```

```
PodScheduled      True
Volumes:
  kube-api-access-wfq9k:
    Type:          Projected (a volume that contains injected data from multiple sources)
    TokenExpirationSeconds: 3607
    ConfigMapName:  kube-root-ca.crt
    ConfigMapOptional: <nil>
    DownwardAPI:    true
QoS Class:         Guaranteed
Node-Selectors:     <none>
Tolerations:        node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
                    node.kubernetes.io/unreachable:NoExecute op=Exists for 300s
Events:
  Type     Reason          Age   From          Message
  ----     -
  Normal   Scheduled       3m35s default-scheduler Successfully assigned player/player-deployment-dd568946-527vk to minikube
  Warning   FailedCreatePodSandBox 94s   kubelet       Failed to create pod sandbox: rpc error: code = Unknown desc = failed to start sandbox container for pod "p
player-deployment-dd568946-527vk": operation timeout: context deadline exceeded
  Normal   SandboxChanged   36s   kubelet       Pod sandbox changed, it will be killed and re-created.

D:\CLASS\19MAM57-Full Stack Web Development\Music player>
```


ROLLBACK STRATEGY:

VERSION-01

```
=> [internal] load build context                                0.1s
=> => transferring context: 5.65kB                             0.1s
=> CACHED [1/2] FROM docker.io/library/nginx:alpine@sha256:da9c94bec1da829ebd52431a84502ec471c8e548ffb2cedbf3626 0.0s
=> [2/2] COPY . /usr/share/nginx/html                         31.6s
=> exporting to image                                          2.1s
=> => exporting layers                                          1.6s
=> => writing image sha256:0f1288e07e9de9296cad430a68c0fb7f716293cb30c3e4f50ca4445ceb44bd74 0.0s
=> => naming to docker.io/library/music:v2                     0.4s

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them

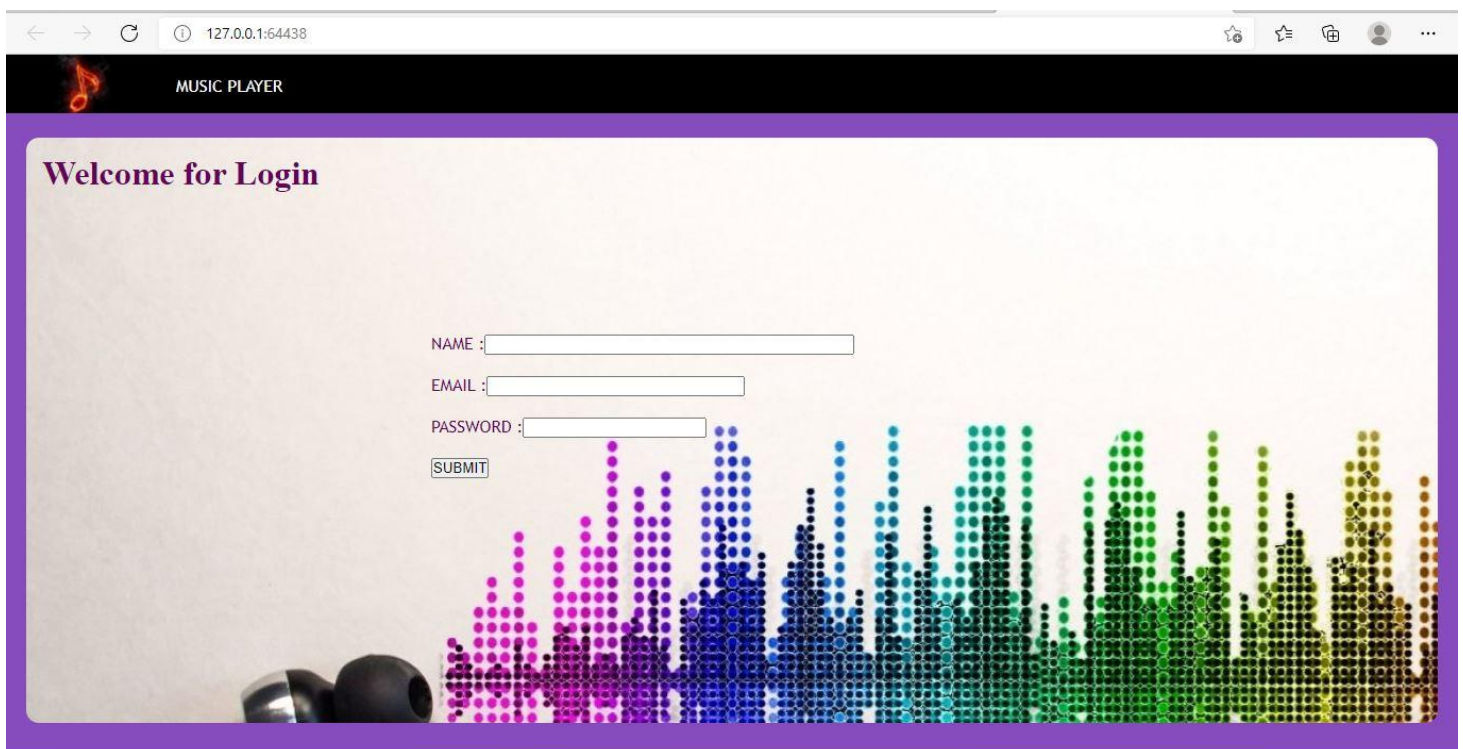
D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl apply -f deployment.yml
deployment.apps/player-deployment configured

D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl get deployments -n player
NAME                READY  UP-TO-DATE  AVAILABLE  AGE
player-deployment   2/2    1           2          51m

D:\CLASS\19MAM57-Full Stack Web Development\Music player>minikube service player-service -n player
! Executing "docker container inspect minikube --format={{.State.Status}}" took an unusually long time: 2.9960355s
* Restarting the docker service may improve performance.

-----
| NAMESPACE | NAME       | TARGET PORT | URL                |
|-----|-----|-----|-----|
| player | player-service | 8080 | http://192.168.49.2:30000 |
|-----|-----|-----|-----|
* Starting tunnel for service player-service.
-----
| NAMESPACE | NAME       | TARGET PORT | URL                |
|-----|-----|-----|-----|
| player | player-service |  | http://127.0.0.1:64407 |
|-----|-----|-----|-----|
* Opening service player/player-service in default browser...
! Because you are using a Docker driver on windows, the terminal needs to be open to run it.
* Stopping tunnel for service player-service.

D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl rollout history deploy player-deployment -n player
deployment.apps/player-deployment
REVISION  CHANGE-CAUSE
1         <none>
2         <none>
3         <none>
```



VERSION-02

```
D:\CLASS\19MAM57-Full Stack Web Development\Music player>kubectl rollout undo deploy player-deployment --to-revision=1 -n player
deployment.apps/player-deployment rolled back
```

```
D:\CLASS\19MAM57-Full Stack Web Development\Music player>minikube service player-service -n player
```

```
! Executing "docker container inspect minikube --format={{.State.Status}}" took an unusually long time: 2.4698524s
```

```
* Restarting the docker service may improve performance.
```

NAMESPACE	NAME	TARGET PORT	URL
player	player-service	8080	http://192.168.49.2:30000

```
* Starting tunnel for service player-service.
```

NAMESPACE	NAME	TARGET PORT	URL
player	player-service		http://127.0.0.1:64438

```
* Opening service player/player-service in default browser...
```

```
! Because you are using a Docker driver on windows, the terminal needs to be open to run it.
```

