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CS571  
Homework 10

### Q-1) Using an emptyDir volume

Step1: Building the fortune container image.

Step:2 Create a file called Dockerfile

```
mansishah@macbookpro fortune % vim fortuneloop.sh
mansishah@macbookpro fortune % cat fortuneloop.sh
#!/bin/bash
trap "exit" SIGINT
mkdir /var/htdocs

while :
do
    echo $(date) Writing fortune to /var/htdocs/index.html
    /usr/games/fortune > /var/htdocs/index.html
    sleep 10
done
mansishah@macbookpro fortune % vim Dockerfile
mansishah@macbookpro fortune % cat Dockerfile
FROM ubuntu:latest

RUN apt-get update ; apt-get -y install fortune
ADD fortuneloop.sh /bin/fortuneloop.sh

ENTRYPOINT /bin/fortuneloop.sh
mansishah@macbookpro fortune %
```

### Step:3 After preparing both files, build and upload the image to Docker Hub

```
mansishah@macbookpro fortune % docker build -t mansi2210/shahm888:fortune .
Sending build context to Docker daemon  4.096kB
Step 1/4 : FROM ubuntu:latest
latest: Pulling from library/ubuntu
423ae2b273f4: Pull complete
de83a2304fa1: Pull complete
f9a83bce3af0: Pull complete
b6b53be908de: Pull complete
Digest: sha256:04d48df82c938587820d7b6006f5071dbbfffceb7ca01d2814f81857c631d44df
Status: Downloaded newer image for ubuntu:latest
----> 72300a873c2c
Step 2/4 : RUN apt-get update ; apt-get -y install fortune
----> Running in 17678e9bfa90
Get:1 http://archive.ubuntu.com/ubuntu bionic InRelease [242 kB]
Get:2 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Get:3 http://security.ubuntu.com/ubuntu bionic-security/restricted amd64 Packages [34.6 kB]
Get:4 http://security.ubuntu.com/ubuntu bionic-security/main amd64 Packages [855 kB]
Get:5 http://archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Get:6 http://archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]
Get:7 http://security.ubuntu.com/ubuntu bionic-security/universe amd64 Packages [831 kB]
Get:8 http://archive.ubuntu.com/ubuntu bionic/multiverse amd64 Packages [186 kB]
Get:9 http://security.ubuntu.com/ubuntu bionic-security/multiverse amd64 Packages [7904 B]
Get:10 http://archive.ubuntu.com/ubuntu bionic/restricted amd64 Packages [13.5 kB]
Get:11 http://archive.ubuntu.com/ubuntu bionic/universe amd64 Packages [11.3 MB]
Get:12 http://archive.ubuntu.com/ubuntu bionic/main amd64 Packages [1344 kB]
Get:13 http://archive.ubuntu.com/ubuntu bionic-updates/restricted amd64 Packages [48.1 kB]
Get:14 http://archive.ubuntu.com/ubuntu bionic-updates/universe amd64 Packages [1360 kB]
Get:15 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 Packages [1149 kB]
Get:16 http://archive.ubuntu.com/ubuntu bionic-updates/multiverse amd64 Packages [11.9 kB]
Get:17 http://archive.ubuntu.com/ubuntu bionic-backports/main amd64 Packages [2496 B]
Get:18 http://archive.ubuntu.com/ubuntu bionic-backports/universe amd64 Packages [4245 B]
Fetched 17.7 MB in 4s (4141 kB/s)
Reading package lists...
Reading package lists...
Building dependency tree...
Reading state information...
The following additional packages will be installed:
```

```

The following additional packages will be installed:
  fortunes-min librecode0
Suggested packages:
  fortunes x11-utils bsdmainutils
The following NEW packages will be installed:
  fortune-mod fortunes-min librecode0
0 upgraded, 3 newly installed, 0 to remove and 3 not upgraded.
Need to get 621 kB of archives.
After this operation, 2131 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu bionic/main amd64 librecode0 amd64 3.6-23 [528 kB]
Get:2 http://archive.ubuntu.com/ubuntu bionic/universe amd64 fortune-mod amd64 1:1.99.1-7build1 [37.3 kB]
Get:3 http://archive.ubuntu.com/ubuntu bionic/universe amd64 fortunes-min all 1:1.99.1-7build1 [55.1 kB]
debconf: delaying package configuration, since apt-utils is not installed
Fetched 621 kB in 1s (458 kB/s)
Selecting previously unselected package librecode0:amd64.
(Reading database ... 4046 files and directories currently installed.)
Preparing to unpack .../librecode0_3.6-23_amd64.deb ...
Unpacking librecode0:amd64 (3.6-23) ...
Selecting previously unselected package fortune-mod.
Preparing to unpack .../fortune-mod_1%3a1.99.1-7build1_amd64.deb ...
Unpacking fortune-mod (1:1.99.1-7build1) ...
Selecting previously unselected package fortunes-min.
Preparing to unpack .../fortunes-min_1%3a1.99.1-7build1_all.deb ...
Unpacking fortunes-min (1:1.99.1-7build1) ...
Setting up fortunes-min (1:1.99.1-7build1) ...
Setting up librecode0:amd64 (3.6-23) ...
Setting up fortune-mod (1:1.99.1-7build1) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
Removing intermediate container 17678e9bfa90
--> 155e2402551e
Step 3/4 : ADD fortuneloop.sh /bin/fortuneloop.sh
--> 077362f69c19
Step 4/4 : ENTRYPOINT /bin/fortuneloop.sh
--> Running in c69e127959e1
Removing intermediate container c69e127959e1
--> 406ec2711027
Successfully built 406ec2711027
Successfully tagged mansi2210/shahm888:fortune

```

## Step:4 Docker Push

```

mansishah@macbookpro fortune % docker push mansi2210/shahm888:fortune
The push refers to repository [docker.io/mansi2210/shahm888]
40c6497d36ca: Pushed
56cf16917be6: Pushed
1852b2300972: Layer already exists
03c9b9f537a4: Layer already exists
8c98131d2d1d: Layer already exists
cc4590d6a718: Layer already exists
fortune: digest: sha256:8fdc6b54024b1099ebfb7c20cffd1d9c18d97720ddc4b715fa440926c0147d59 size: 1571
mansishah@macbookpro fortune %

```

### Step:5 Creating a pod

```
mansishah@macbookpro fortune % vim fortune-pod.yaml
mansishah@macbookpro fortune % cat fortune-pod.yaml
apiVersion: v1
kind: Pod
metadata:
  name: fortune
spec:
  containers:
  - image: mansi2210/shahm888:fortune
    name: html-generator
    volumeMounts:
    - name: html
      mountPath: /var/htdocs
  - image: nginx:alpine
    name: web-server
    volumeMounts:
    - name: html
      mountPath: /usr/share/nginx/html
      readOnly: true
    ports:
    - containerPort: 80
      protocol: TCP
  volumes:
  - name: html
    emptyDir: {}
mansishah@macbookpro fortune %
```

### Step:6 Seeing the pod in action

```
mansishah@macbookpro fortune % kubectl create -f fortune-pod.yaml
pod/fortune created
mansishah@macbookpro fortune % kubectl get po
NAME      READY   STATUS             RESTARTS   AGE
fortune   0/2     ContainerCreating   0           4s
mansishah@macbookpro fortune % kubectl get po
NAME      READY   STATUS    RESTARTS   AGE
fortune   2/2     Running   0           16s
mansishah@macbookpro fortune %
```

```
mansishah@macbookpro fortune % kubectl port-forward fortune 8080:80
Forwarding from 127.0.0.1:8080 -> 80
Forwarding from [::1]:8080 -> 80
█
```

```
mansishah@macbookpro ~ % curl http://localhost:8080
Don't you wish you had more energy... or less ambition?
mansishah@macbookpro ~ % curl http://localhost:8080
Don't you wish you had more energy... or less ambition?
mansishah@macbookpro ~ % █
```

```
mansishah@macbookpro ~ % curl http://localhost:8080
Don't you wish you had more energy... or less ambition?
mansishah@macbookpro ~ % curl http://localhost:8080
Q:      How much does it cost to ride the Unibus?
A:      2 bits.
mansishah@macbookpro ~ % curl http://localhost:8080
You recoil from the crude; you tend naturally toward the exquisite.
mansishah@macbookpro ~ % █
```

