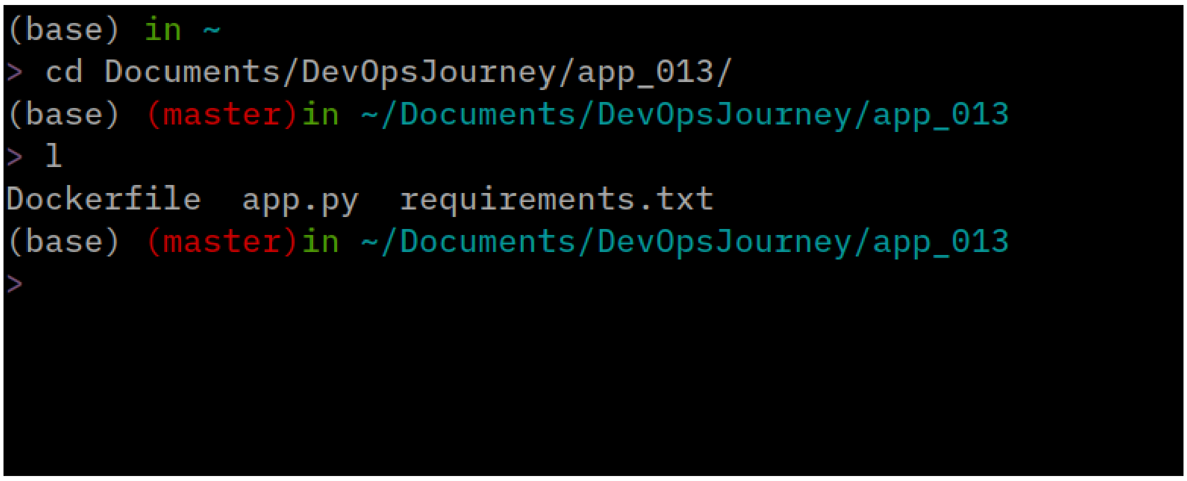
#014 Volumes

Introduction

this is part 14 from the journey it's a long journey(360 day) so go please check previous parts , and if you need to walk in the journey with me please make sure to follow because I may post more than once in 1 Day but surely I will post daily at least one 😍.

And I will cover lot of tools as we move on.

Download app_014



```
(base) in ~
> cd Documents/DevOpsJourney/app_013/
(base) (master)in ~/Documents/DevOpsJourney/app_013
> l
Dockerfile  app.py  requirements.txt
(base) (master)in ~/Documents/DevOpsJourney/app_013
>
```

if you follow part 9

```
cd location/DevOpsJourney/app_014/
```

replace location with where you put the DevOpsJourney

if your new go to part 9 and do same steps will download old lecture files and new one.

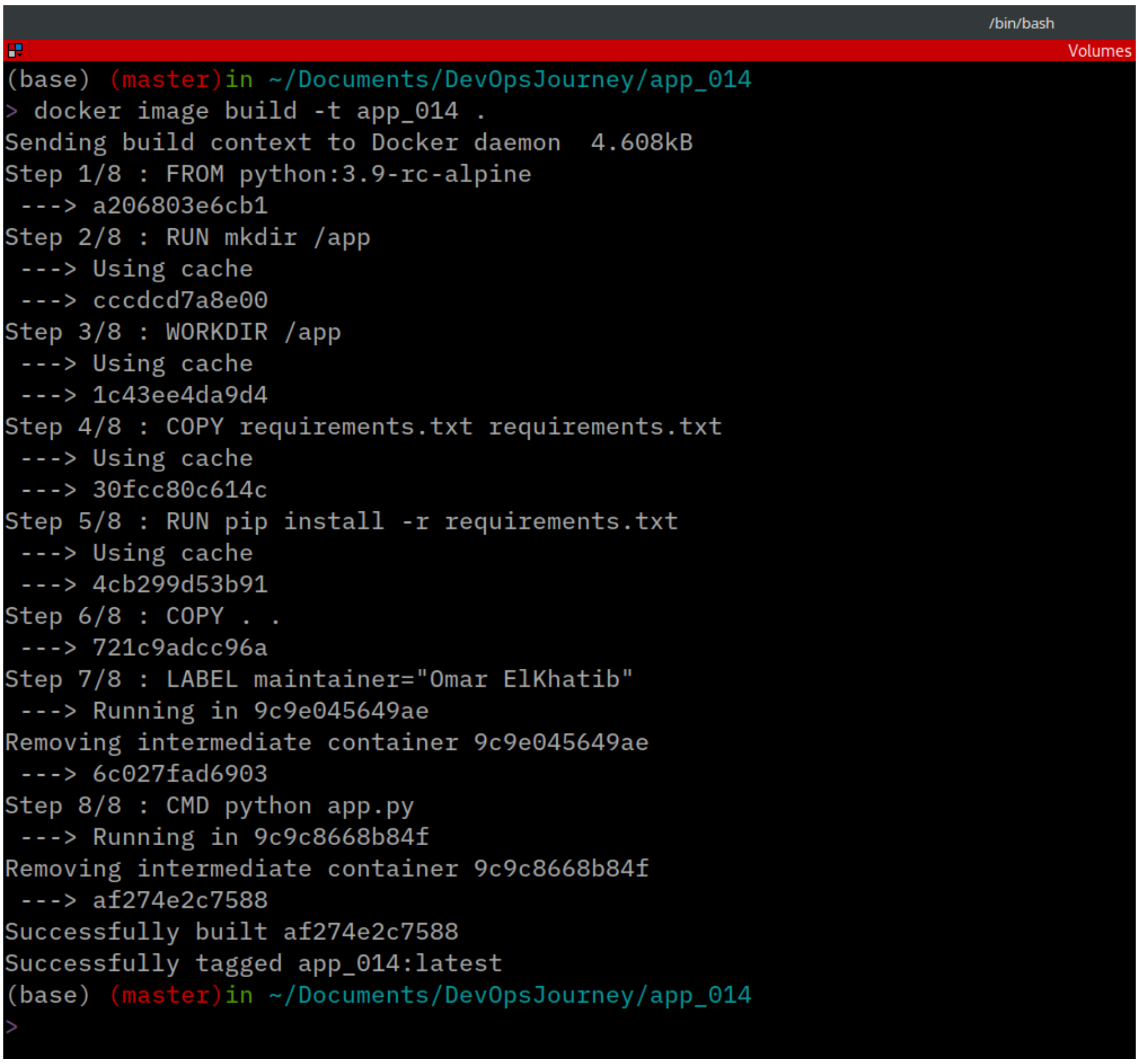
The Problem

so the problem with our Docker right now is every time we need to make a change for our code we need to rebuild image , is time and space waste , and not a pragmatic way to do.

Let's see the problem

first let's build our app

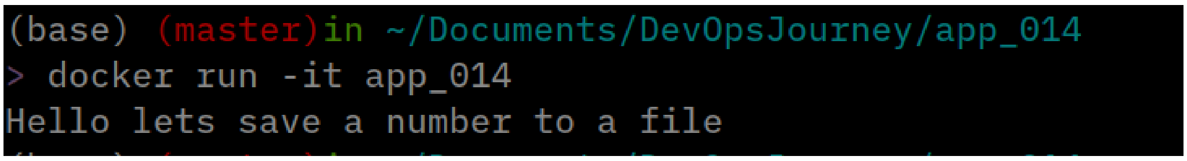
```
docker image build -t app_014 .
```



```
(base) (master)in ~/Documents/DevOpsJourney/app_014
> docker image build -t app_014 .
Sending build context to Docker daemon  4.608kB
Step 1/8 : FROM python:3.9-rc-alpine
 ---> a206803e6cb1
Step 2/8 : RUN mkdir /app
 ---> Using cache
 ---> cccdcd7a8e00
Step 3/8 : WORKDIR /app
 ---> Using cache
 ---> 1c43ee4da9d4
Step 4/8 : COPY requirements.txt requirements.txt
 ---> Using cache
 ---> 30fcc80c614c
Step 5/8 : RUN pip install -r requirements.txt
 ---> Using cache
 ---> 4cb299d53b91
Step 6/8 : COPY . .
 ---> 721c9adcc96a
Step 7/8 : LABEL maintainer="Omar ElKhatib"
 ---> Running in 9c9e045649ae
Removing intermediate container 9c9e045649ae
 ---> 6c027fad6903
Step 8/8 : CMD python app.py
 ---> Running in 9c9c8668b84f
Removing intermediate container 9c9c8668b84f
 ---> af274e2c7588
Successfully built af274e2c7588
Successfully tagged app_014:latest
(base) (master)in ~/Documents/DevOpsJourney/app_014
>
```

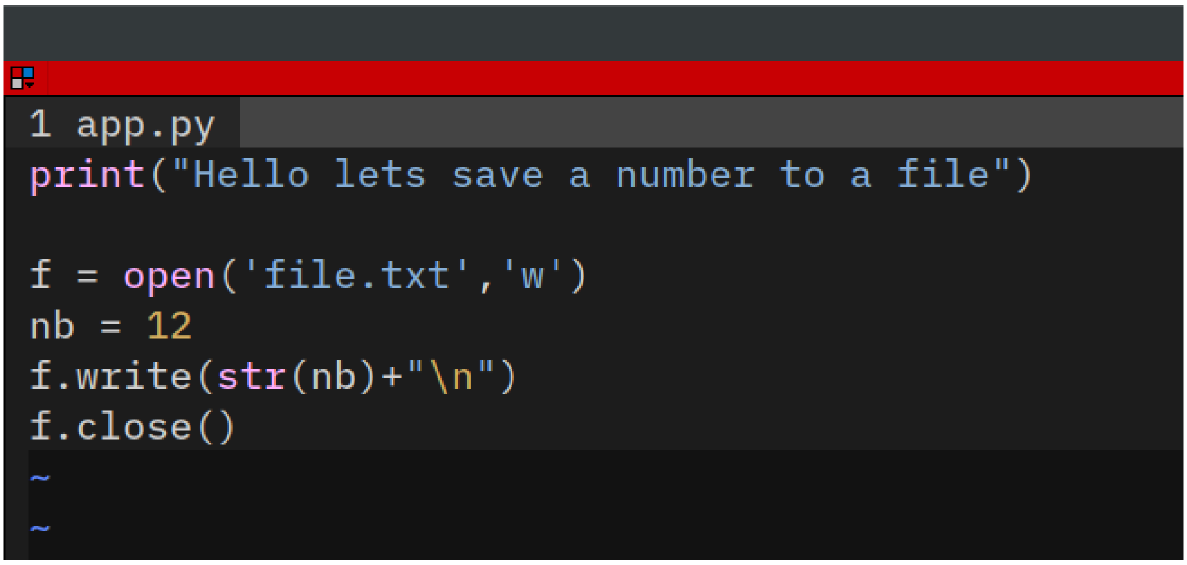
and let's run our app

```
docker run -it app_014
```



```
(base) (master)in ~/Documents/DevOpsJourney/app_014
> docker run -it app_014
Hello lets save a number to a file
```

our app will print a message and save a number to a file.txt
let's take a look inside our app

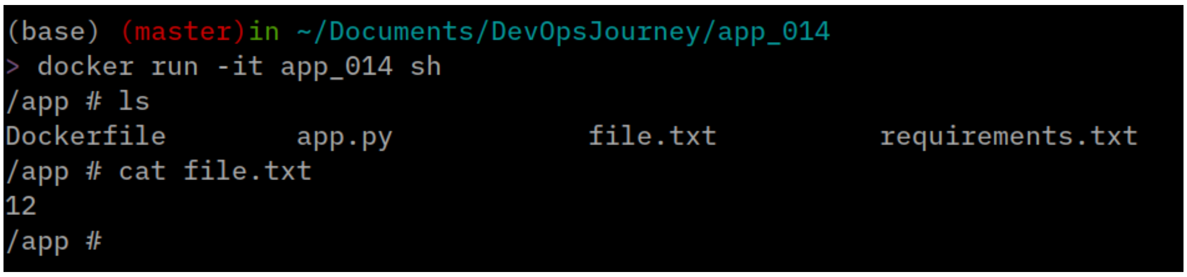


```
1 app.py
print("Hello lets save a number to a file")

f = open('file.txt','w')
nb = 12
f.write(str(nb)+"\n")
f.close()
~
~
```

it will save number 12 to a file.txt

let's take a look inside our app folder , as we know docker will create an app folder inside his own image because we asked to do this , check #009 Dockerfile
so to access this app folder using interactive shell



```
(base) (master)in ~/Documents/DevOpsJourney/app_014
> docker run -it app_014 sh
/app # ls
Dockerfile        app.py            file.txt          requirements.txt
/app # cat file.txt
12
/app #
```

```
docker run -it app_014 sh
```

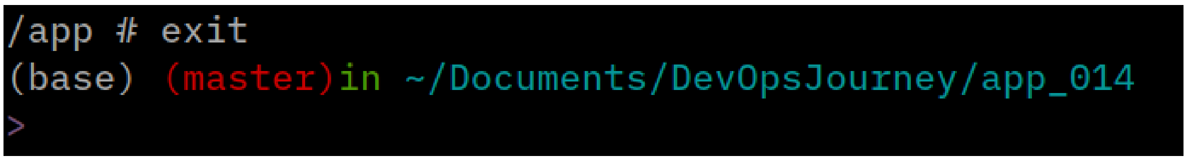
inside the interactive shell

```
cat file.txt
```

we can see that 12 is stored

Time to make a change

let's change 12 in our app.py to 666
first exit our interactive shell

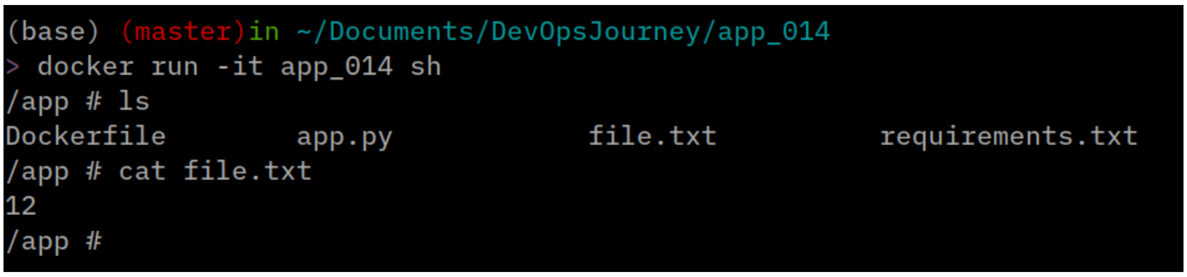


```
/app # exit
(base) (master)in ~/Documents/DevOpsJourney/app_014
>
```

```
exit
```

I use vim as my text editor(actually as complete IDE ;D)

let's take a look again inside the container



```
(base) (master)in ~/Documents/DevOpsJourney/app_014
> docker run -it app_014 sh
/app # ls
Dockerfile          app.py              file.txt            requirements.txt
/app # cat file.txt
12
/app #
```

```
docker run -it app_014 sh
```

inside the interactive shell

```
cat file.txt
```

we can see that isn't changed

The fix

we can fix our problem using -v (volume)

```
docker run -it --rm --name app_014 -v $PWD:/app app_014
```

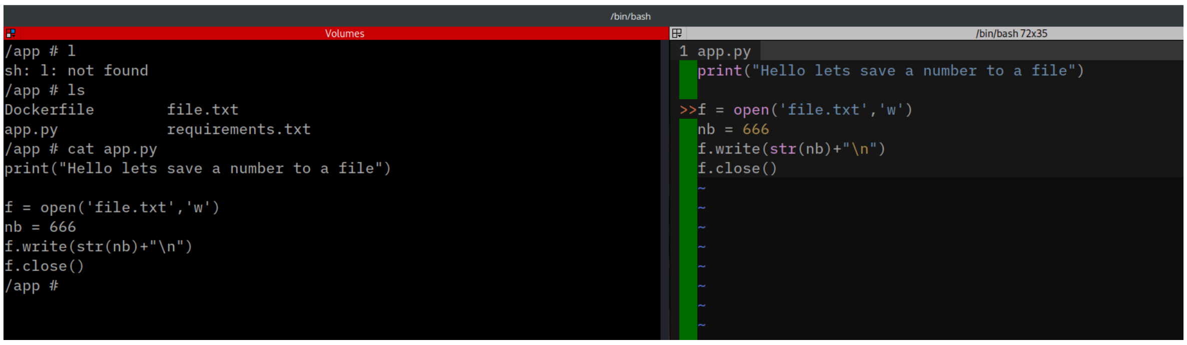
$PWD is a default variable in linux it store the home url
in our case , we use in docker alpine which is a linux based distro , /app is the directory we make in Dockerfile to store our app
again let's take a look inside

```
docker run -it --rm --name app_014 -v $PWD:/app app_014 sh
```

inside the interactive shell

```
cat app.py
```

as we see we got 666 without rebuild our image!



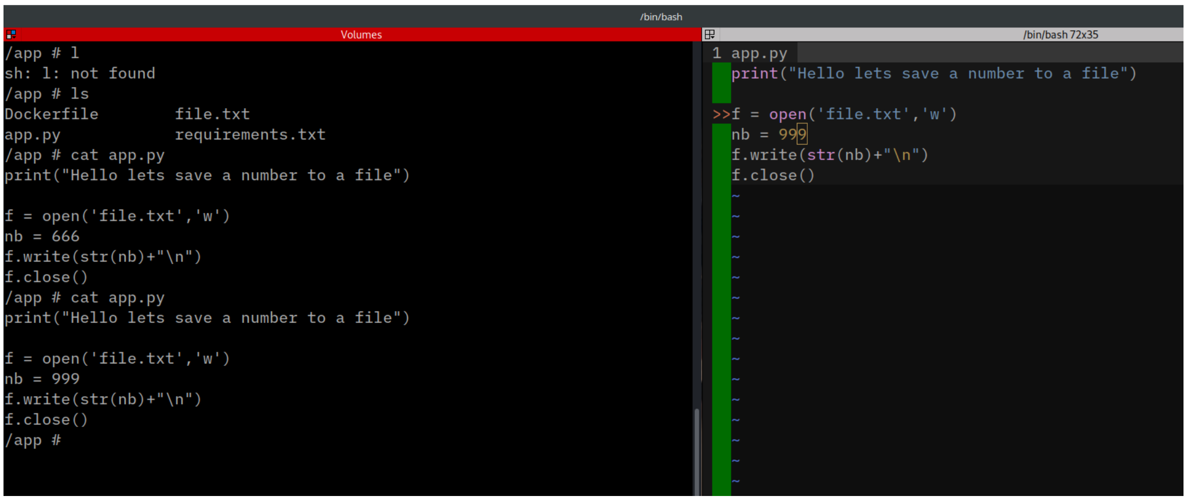
```
/app # l
sh: l: not found
/app # ls
Dockerfile        file.txt
app.py            requirements.txt
/app # cat app.py
print("Hello lets save a number to a file")

f = open('file.txt','w')
nb = 666
f.write(str(nb)+"\n")
f.close()
/app #
```

```
print("Hello lets save a number to a file")

f = open('file.txt','w')
nb = 666
f.write(str(nb)+"\n")
f.close()
~
~
~
~
~
~
~
~
```

let's try 999



```
/app # l
sh: l: not found
/app # ls
Dockerfile         file.txt
app.py             requirements.txt
/app # cat app.py
print("Hello lets save a number to a file")

f = open('file.txt','w')
nb = 666
f.write(str(nb)+"\n")
f.close()
/app # cat app.py
print("Hello lets save a number to a file")

f = open('file.txt','w')
nb = 999
f.write(str(nb)+"\n")
f.close()
/app #
```

```
1 app.py
print("Hello lets save a number to a file")

>>f = open('file.txt','w')
nb = 999
f.write(str(nb)+"\n")
f.close()
```

see as soon I change my code is got updated inside the image with out rebuild the image.