Unidade Curricular - Computação em Nuvem – 4º Semestre – ADS
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Trabalho Prático: Implementando e Contêinerizando uma Aplicação Web com Docker

Docker instalado e sua versão com o comando **docker --version.**

```
felipe@felipe-virtual-machine:~/Desktop/Ativ_CP$ docker --version
Docker version 24.0.7, build 24.0.7-0ubuntu2~22.04.1
felipe@felipe-virtual-machine:~/Desktop/Ativ_CP$
```

Criação de pasta para o diretório com os comandos a seguir:

```
felipe@felipe-virtual-machine:~$ mkdir flask-docker-app
felipe@felipe-virtual-machine:~$ cd flask-docker-app
```

Lista todos os contêineres (ativos e inativos) com o comando **sudo docker ps -a.**

```
felipe@felipe-virtual-machine:~/Desktop/Ativ_CP$ sudo docker ps -a
[sudo] senha para felipe:
CONTAINER ID   IMAGE              COMMAND                  CREATED             STATUS                       PORTS
               NAMES
1a10768ec5db   flask-docker-app   "flask run --host=0.…"   46 minutes ago      Up 46 minutes                0.0.0.0:8080->8080/tcp, :::80
80->8080/tcp   optimistic_varahamihira
1cdef79c7168   e87d95256c9e       "flask run --host=0.…"   53 minutes ago      Exited (0) 53 minutes ago
               zen_mendel
d321396dc304   e87d95256c9e       "flask run --host=0.…"   55 minutes ago      Created
               upbeat_mahavira
e9f260873798   facbeb5a6557       "flask run"              About an hour ago   Exited (137) 54 minutes ago
               stupefied_volhard
felipe@felipe-virtual-machine:~/Desktop/Ativ_CP$
```

Comando **sudo systemctl status docker =** verifica o status do Docker, para confirmar que o Docker está em execução.

```
felipe@felipe-virtual-machine:~/Desktop/Ativ_CP$ sudo systemctl status docker
● docker.service - Docker Application Container Engine
     Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)
     Active: active (running) since Wed 2024-09-04 00:41:29 -03; 1h 3min ago
TriggeredBy: ● docker.socket
       Docs: https://docs.docker.com
   Main PID: 15092 (dockerd)
      Tasks: 26
     Memory: 31.8M
        CPU: 893ms
     CGroup: /system.slice/docker.service
             ├─15092 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock
             ├─16334 /usr/bin/docker-proxy -proto tcp -host-ip 0.0.0.0 -host-port 8080 -container-ip 172.17.0.2 -container-port 8080
             └─16347 /usr/bin/docker-proxy -proto tcp -host-ip :: -host-port 8080 -container-ip 172.17.0.2 -container-port 8080

set 04 00:41:29 felipe-virtual-machine dockerd[15092]: time="2024-09-04T00:41:29.838022822-03:00" level=info msg="Loading containers: don>
set 04 00:41:29 felipe-virtual-machine dockerd[15092]: time="2024-09-04T00:41:29.853520595-03:00" level=info msg="Docker daemon" commit="7>
set 04 00:41:29 felipe-virtual-machine dockerd[15092]: time="2024-09-04T00:41:29.853576848-03:00" level=info msg="Daemon has completed in>
set 04 00:41:29 felipe-virtual-machine systemd[1]: Started Docker Application Container Engine.
set 04 00:41:29 felipe-virtual-machine dockerd[15092]: time="2024-09-04T00:41:29.889609505-03:00" level=info msg="API listen on /run/dock>
set 04 00:42:07 felipe-virtual-machine dockerd[15092]: time="2024-09-04T00:42:07.291736009-03:00" level=info msg="ignoring event" contain>
set 04 00:45:06 felipe-virtual-machine dockerd[15092]: time="2024-09-04T00:45:06.166989783-03:00" level=error msg="Error setting up exec >
set 04 00:48:43 felipe-virtual-machine dockerd[15092]: time="2024-09-04T00:48:43.614736566-03:00" level=info msg="Layer sha256:076b0149b5>
set 04 00:48:43 felipe-virtual-machine dockerd[15092]: time="2024-09-04T00:48:43.678207768-03:00" level=info msg="Layer sha256:076b0149b5>
set 04 00:48:43 felipe-virtual-machine dockerd[15092]: time="2024-09-04T00:48:43.727141847-03:00" level=info msg="Layer sha256:076b0149b5>
lines 1-24/24 (END)
```

Aqui lista os diretórios do projeto com o comando **ls -l** com a aplicação usando Flask.

```
felipe@felipe-virtual-machine:~/Desktop/Ativ_CP/flask-docker-app$ ls -l
total 12
-rw-rw-r-- 1 felipe felipe 187 set  4 01:12 app.py
-rw-rw-r-- 1 felipe felipe 212 set  4 00:48 Dockerfile
-rw-rw-r-- 1 felipe felipe  14 set  4 00:11 requirements.txt
```

Comando **cat app.py** para mostrar desenvolvimento, (exemplo gerado aplicação Flask).

```
felipe@felipe-virtual-machine:~/Desktop/Ativ_CP/flask-docker-app$ cat app.py
from flask import Flask # type: ignore

app = Flask(__name__)

@app.route('/')
def hello():
    return 'Hello, Docker!'

if __name__ == "__main__":
    app.run(host="0.0.0.0", port=8080)
```

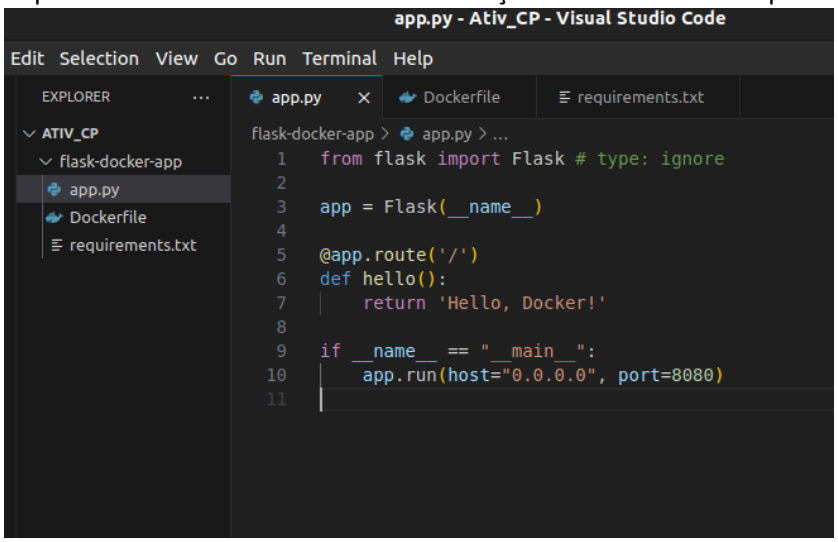
Aqui mostra que o Docker está presente no diretório com o comando **ls -l Dockerfile.**

```
felipe@felipe-virtual-machine:~/Desktop/Ativ_CP/flask-docker-app$ ls -l Dockerfile
-rw-rw-r-- 1 felipe felipe 212 set  4 02:10 Dockerfile
```

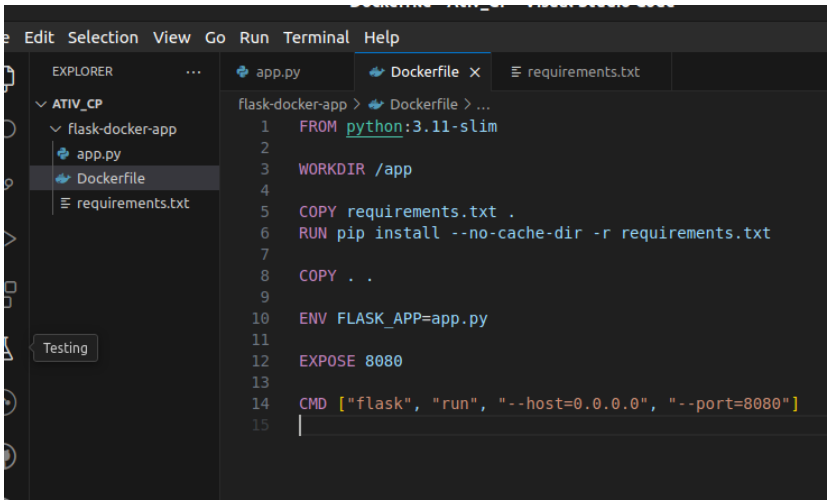
Nessa etapa com o comando **sudo docker images**, você ve as imagens criadas no docker.

```
felipe@felipe-virtual-machine:~/Desktop/Ativ_CP$ sudo docker images
REPOSITORY          TAG          IMAGE ID       CREATED        SIZE
flask-docker-app    latest       b6093fe4274f   2 hours ago    145MB
<none>              <none>       e87d95256c9e   2 hours ago    145MB
<none>              <none>       facbeb5a6557   2 hours ago    146MB
python              3.11-slim    10f461201cdb   5 weeks ago    130MB
```

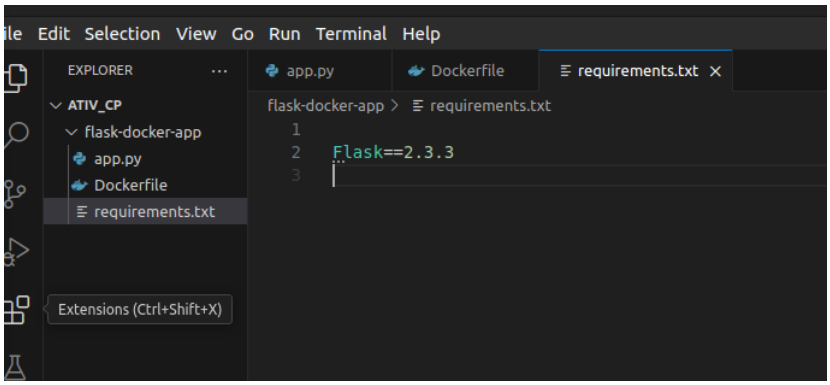
Captura de tela no VScode com a codificação da atividade no arquivo **app.py**



Captura de tela no VScode com a codificação da atividade do arquivo **Dockerfile**



Captura de tela no VScode com a codificação da atividade do arquivo **requirements.txt : Flask ==2.3.3**



E por fim vemos o terminal com o http://localhost:8080 ativo.