



UNIVERSIDAD TECNOLÓGICA DEL NORTE DE GUANAJUATO

Tecnologías de la Información y Comunicación

Programa educativo:

TSU en Infraestructura de Redes Digitales

Área académica:

Programación de Redes

Asignatura:

Unidad II: Programación de dispositivos IdC **Grupo:** GIR0441

Docker and Python

Tarea:

González Manzano Sandra Dania

Alumno:

Gabriel Barrón Rodríguez

Docente:

Dolores Hidalgo, C.I.N., Gto., Martes 07 de Noviembre de 2022

Lugar y fecha:

Después de la instalación del docker se inicia

```
sdania@GMSD:~$ systemctl --user start docker-desktop
sdania@GMSD:~$
```

comando para parar el docker

```
sdania@GMSD:~$ sudo systemctl stop docker docker.socket containerd
```

Verificar versión de Docker Compose

```
sdania@GMSD:~$ docker compose version
Docker Compose version v2.12.0
sdania@GMSD:~$
```

Verificar la version docker --version

```
sdania@GMSD:~$ docker --version
Docker version 20.10.21, build baedalf
sdania@GMSD:~$
```

docker version

```
sdania@GMSD:~$ docker version
Cannot connect to the Docker daemon at unix:///home/sdania/.docker/desktop/docker.sock. Is the docker daemon running?
Client: Docker Engine - Community
Cloud integration: v1.0.29
Version: 20.10.21
API version: 1.41
Go version: go1.18.7
Git commit: baedalf
Built: Tue Oct 25 18:01:58 2022
OS/Arch: linux/amd64
Context: desktop-linux
Experimental: true
sdania@GMSD:~$
```

Habilitar docker desktop

```
sdania@GMSD:~$ systemctl --user enable docker-desktop
sdania@GMSD:~$
```

Build your Python image

Crear el archivo daemon.json

```
sdania@GMSD:~$ sudo touch /etc/docker/daemon.json
[sudo] password for sdania:
[sudo] password for sdania:
sdania@GMSD:~$ sudo chmod 777 daemon.json
sdania@GMSD:~$ systemctl --user start docker-desktop
sdania@GMSD:~$
```

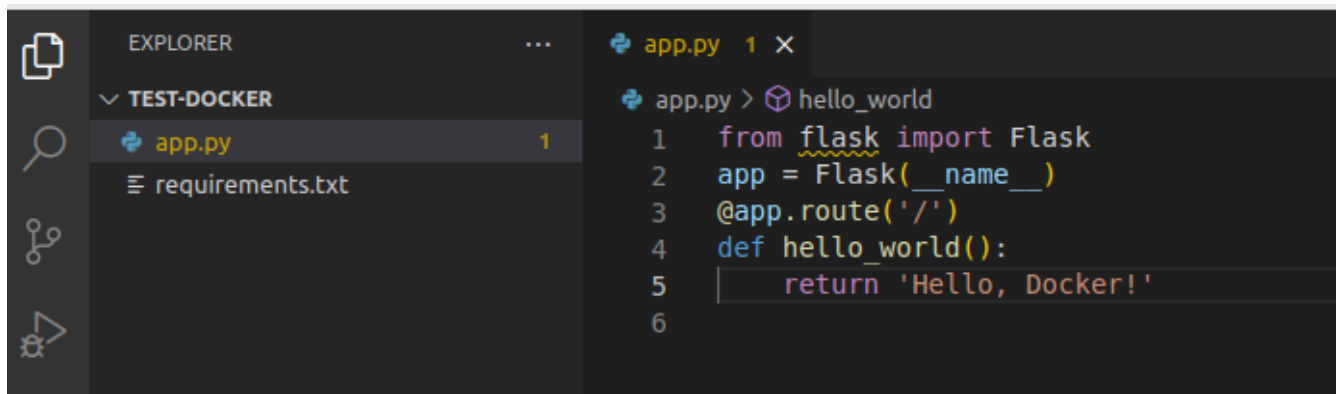
Crear y cambiarse a un directorio llamado python-docker

```
sdania@GMSD:~/Documentos$ mkdir test-docker
sdania@GMSD:~/Documentos$ cd test-docker
sdania@GMSD:~/Documentos/test-docker$
```

Instalar los módulos que usaremos para Python

```
sdania@GMSD:~/Documentos/test-docker$ pip3 install Flask
sdania@GMSD:~/Documentos/test-docker$ pip3 freeze | grep Flask >> requirements.txt
sdania@GMSD:~/Documentos/test-docker$ touch app.py
sdania@GMSD:~/Documentos/test-docker$
```

Abrir Visual Studio Code y agregar el siguiente código al archivo app.py

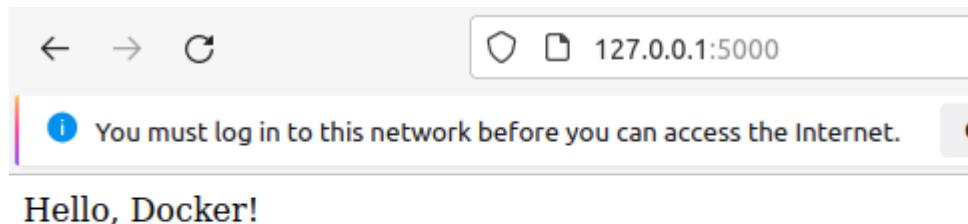


```
app.py 1 x
app.py > hello_world
1 from flask import Flask
2 app = Flask(__name__)
3 @app.route('/')
4 def hello_world():
5     return 'Hello, Docker!'
6
```

Prueba la aplicación ejecutando el comando en la terminal

```
sdania@GMSD:~/Documentos/test-docker$ python3 -m flask run
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:5000
Press CTRL+C to quit
```

Abre un navegador web y verifica funcionamiento



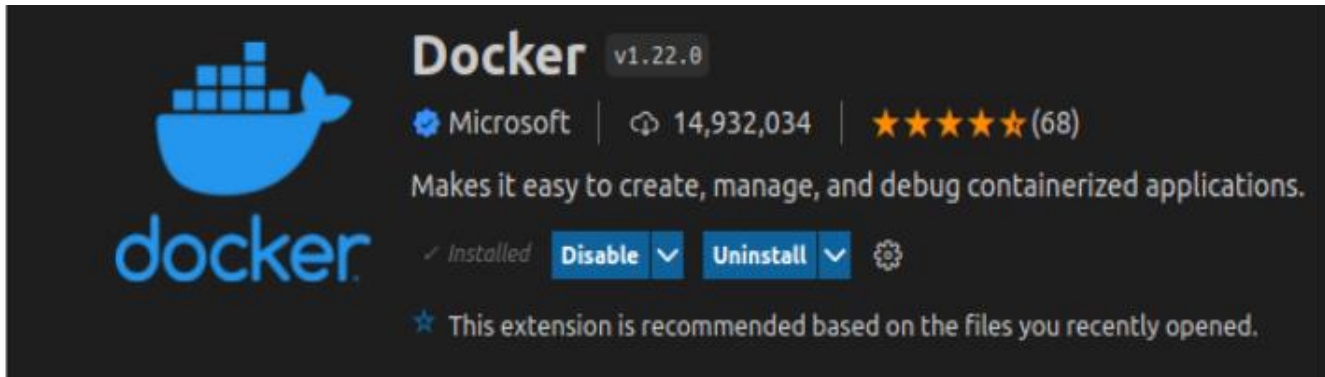
← → ↻ 127.0.0.1:5000

i You must log in to this network before you can access the Internet.

Hello, Docker!

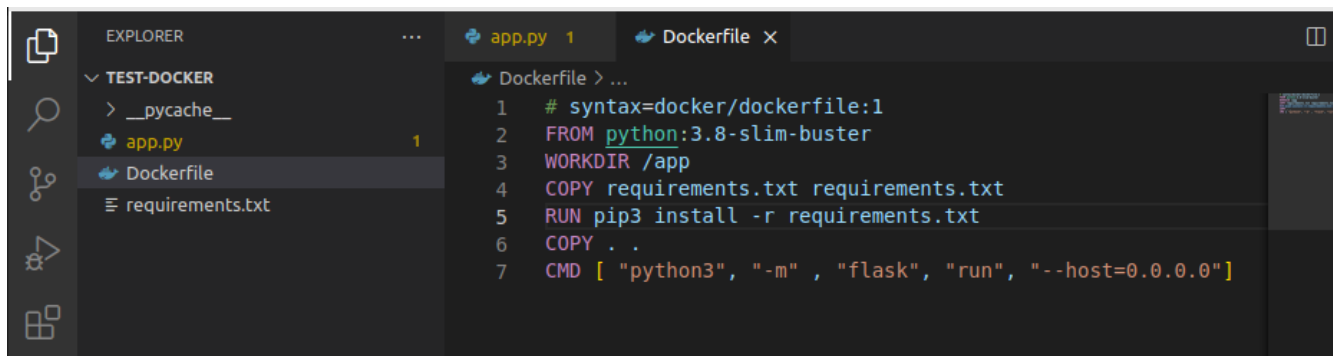
Create a Dockerfile for Python

Instalar la extensión para Docker dentro de Visual Studio Code



Crear un archivo llamado Dockerfile sin extensión de archivo

Y agregar el contenido al archivo



construye la imagen para alojar la aplicación

```
sdania@GMSD:~/Documentos/test-docker$ docker build --tag python-docker .
[+] Building 3.7s (14/14) FINISHED
=> [internal] load build definition from Dockerfile                                0.4s
=> => transferring dockerfile: 38B                                                0.0s
=> [internal] load .dockerignore                                                  0.2s
=> => transferring context: 2B                                                    0.0s
=> resolve image config for docker.io/docker/dockerfile:1                      1.1s
=> CACHED docker-image://docker.io/docker/dockerfile:1@sha256:9ba7531bd80fb0a858632727cf7a112fbfd19b17e94c4e84 0.0s
=> [internal] load build definition from Dockerfile                                0.0s
=> [internal] load .dockerignore                                                  0.0s
=> [internal] load metadata for docker.io/library/python:3.8-slim-buster        0.9s
=> [1/5] FROM docker.io/library/python:3.8-slim-buster@sha256:2faab08dbeb0d11bb549be5b7b626ad23fcd0fe7998ad02a 0.0s
=> [internal] load build context                                                  0.2s
=> => transferring context: 148.12kB                                              0.0s
=> CACHED [2/5] WORKDIR /app                                                      0.0s
=> CACHED [3/5] COPY requirements.txt requirements.txt                          0.0s
=> CACHED [4/5] RUN pip3 install -r requirements.txt                            0.0s
=> CACHED [5/5] COPY . .                                                         0.0s
=> exporting to image                                                            0.2s
=> => exporting layers                                                            0.0s
=> => writing image sha256:c403213780995d57a49b6656fc4eddf2140fb7612cd685ee3b5f952ff1cd5f3b 0.0s
=> => naming to docker.io/library/python-docker                                0.0s

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

Ver las imágenes locales

```
sdania@GMSD:~/Documentos/test-docker$ docker images
REPOSITORY      TAG        IMAGE ID      CREATED        SIZE
python-docker   latest     c40321378099 About a minute ago 139MB
sdania@GMSD:~/Documentos/test-docker$
```

Crear un tag para la imagen

```
sdania@GMSD:~/Documentos/test-docker$ docker tag python-docker:latest python-docker:v1.0.0
sdania@GMSD:~/Documentos/test-docker$ docker images
REPOSITORY      TAG        IMAGE ID      CREATED        SIZE
python-docker   latest     c40321378099 4 minutes ago 139MB
python-docker   v1.0.0     c40321378099 4 minutes ago 139MB
sdania@GMSD:~/Documentos/test-docker$
```

Removamos el TAG

```
sdania@GMSD:~/Documentos/test-docker$ docker rmi python-docker:v1.0.0
Untagged: python-docker:v1.0.0
sdania@GMSD:~/Documentos/test-docker$ docker images
REPOSITORY      TAG        IMAGE ID      CREATED        SIZE
python-docker   latest     c40321378099 5 minutes ago 139MB
sdania@GMSD:~/Documentos/test-docker$
```

