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TP1

DevOps - Docker



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Voici le wrapper qui permettra de faire la connexion à l'API de OpenWeather, il permet aussi de requêter l'Api pour récupérer les informations météorologiques.

```
app.py x
Projets > DevOps > TP1_docker > app.py > ...
1 from requests import Request, Session, Response
2 import os
3
4 def weather(lat, long, apiKey):
5     try:
6         url = 'http://api.openweathermap.org/data/2.5/weather'
7         params = {
8             'lat': lat,
9             'lon': long,
10            'appid': apiKey
11        }
12        session = Session()
13        request = Request('GET', url, params=params)
14        prepped = request.prepare()
15        response = session.send(prepped)
16        return response.json()
17
18    except Exception as e:
19        return e
20
21
22 lat = os.environ['LAT']
23 long = os.environ['LONG']
24 apiKey = os.environ['API_KEY']
25
26 print(weather(lat,long,apiKey))
```

Voici le Dockerfile qui permettra de définir les étapes qui seront exécuter dans un ordre bien précis.

```
EXPLORER
v UNTITLED (WORKSPACE)
v Projets
  > Advanced Web
  v DevOps\TP1_docker
    ~$1_devops_ABED_Karim.odt
    app.py
    Dockerfile
    requirements.txt
    TP1_devops_ABED_Karim.odt
Dockerfile x
Projets > DevOps > TP1_docker > Dockerfile > ...
1 FROM python:3.8
2
3 RUN apt update
4 RUN apt install python3
5
6 # set the working directory in the container
7 WORKDIR D:/Projets/DevOps/TP1_docker
8
9 COPY app.py ./
10
11 # copy the dependencies file to the working directory
12 COPY requirements.txt .
13
14 # install dependencies
15 RUN pip install -r requirements.txt
16
17 # command to run on container start
18 CMD [ "python3", "./app.py" ]
```

Construisons l'image docker avec cette commande :

docker build -t devopstpl .

```
Administrateur : Windows PowerShell
(base) PS D:\Projets\DevOps\TP1_docker> docker build -t devopstpl .
[+] Building 64.4s (13/13) FINISHED
=> [internal] load build definition from Dockerfile                                0.1s
=> => transferring dockerfile: 416B                                              0.0s
=> [internal] load .dockerignore                                                 0.1s
=> => transferring context: 2B                                                  0.0s
=> [internal] load metadata for docker.io/library/python:3.8                   3.7s
=> [auth] library/python:pull token for registry-1.docker.io                  0.0s
=> [1/7] FROM docker.io/library/python:3.8@sha256:1fbd81716d6d8d6081b11b058894533e36c93abd10d91 46.2s
=> => resolve docker.io/library/python:3.8@sha256:1fbd81716d6d8d6081b11b058894533e36c93abd10d91 0.0s
=> => sha256:923c4a1f89559ac6f3558bd6feab61d4af80f11a35656ec9cb89eb50a9587fcf 2.22kB / 2.22kB 0.0s
=> => sha256:050b8443e26e26746c3e2854f57c82246f071dfedf15d3246b9d76e98021cd17 8.56kB / 8.56kB 0.0s
=> => sha256:bf168a6748997eb97b48cc86234b7ff7d8bc907645b9be99013158b3f146b272 5.16MB / 5.16MB 1.1s
=> => sha256:1fbd81716d6d8d6081b11b058894533e36c93abd10d91560ac8011a27ca13947 1.86kB / 1.86kB 0.0s
=> => sha256:e756f3fdd6a378aa16205b0f75d178b7532b110e86be7659004fc6a21183226c 55.01MB / 55.01MB 14.0s
=> => sha256:e604223835ccf02d097187b5a58ca73e8598cadbb16a36202ca1943e97f56f1f 10.88MB / 10.88MB 2.9s
=> => sha256:6d5c91c4cd86dde23108ab3af91e9eae838d0059a380ee7dfd4f370b6d985523 54.58MB / 54.58MB 14.6s
=> => sha256:2cc8d88542628a7668ee653a4c00f2cfef5f9ea24f407227b6b63508c56eba 196.74MB / 196.74MB 25.9s
=> => sha256:2767dbfeeb87f9bd53889a475797724caee223dd3d9eb6b7e088ab6c24971b99 6.29MB / 6.29MB 15.7s
=> => sha256:e5a387f746e4265e10390ccbca24c0bc73732632714d7b9ba3629c59e8ca4c60 17.38MB / 17.38MB 17.5s
=> => extracting sha256:e756f3fdd6a378aa16205b0f75d178b7532b110e86be7659004fc6a21183226c 5.8s
=> => sha256:54b770283d3a6c44c4cc49fc5e38931eade28543d6606703ca865bee171f60d6 233B / 233B 15.9s
=> => sha256:d829066ff47d835da68525fc71d7fdf81f5e4d810fb5477956bd44c690d10d89 2.87MB / 2.87MB 16.7s
=> => extracting sha256:bf168a6748997eb97b48cc86234b7ff7d8bc907645b9be99013158b3f146b272 0.5s
=> => extracting sha256:e604223835ccf02d097187b5a58ca73e8598cadbb16a36202ca1943e97f56f1f 0.7s
=> => extracting sha256:6d5c91c4cd86dde23108ab3af91e9eae838d0059a380ee7dfd4f370b6d985523 4.9s
=> => extracting sha256:2cc8d88542628a7668ee653a4c00f2cfef5f9ea24f407227b6b63508c56eba3e 13.7s
=> => extracting sha256:2767dbfeeb87f9bd53889a475797724caee223dd3d9eb6b7e088ab6c24971b99 0.5s
=> => extracting sha256:e5a387f746e4265e10390ccbca24c0bc73732632714d7b9ba3629c59e8ca4c60 1.9s
=> => extracting sha256:54b770283d3a6c44c4cc49fc5e38931eade28543d6606703ca865bee171f60d6 0.0s
=> => extracting sha256:d829066ff47d835da68525fc71d7fdf81f5e4d810fb5477956bd44c690d10d89 0.4s
=> [internal] load build context                                                0.1s
=> => transferring context: 739B                                                0.0s
=> [2/7] RUN apt update                                                         5.2s
=> [3/7] RUN apt install python3                                              2.6s
=> [4/7] WORKDIR D:/Projets/DevOps/TP1_docker                                0.1s
=> [5/7] COPY app.py ./                                                         0.1s
=> [6/7] COPY requirements.txt .                                               0.1s
=> [7/7] RUN pip install -r requirements.txt                                  5.6s
=> exporting to image                                                         0.4s
=> => exporting layers                                                         0.3s
=> => writing image sha256:ae8e1a41ac435c5cfa9c7aa89724b8985ee90dc561e304b8f594fb4cfa7e096a 0.0s
=> => naming to docker.io/library/devopstpl                                   0.0s
```

Maintenant que l'image docker est construite, nous pouvons tester de la faire fonctionner

```
Administrateur : Windows PowerShell
(base) PS D:\Projets\DevOps\TP1_docker> docker run --env LAT="5.902785" --env LONG="102.754175" --env API_KEY="240aa650f4db4e154a07d0459c30a347" devopstpl
{'coord': {'lon': 102.7542, 'lat': 5.9028}, 'weather': [{'id': 804, 'main': 'Clouds', 'description': 'overcast clouds', 'icon': '04n'}], 'base': 'stations', 'main': {'temp': 300.76, 'feels_like': 302.86, 'temp_m
in': 300.76, 'temp_max': 300.76, 'pressure': 1008, 'humidity': 68, 'sea_level': 1008, 'grnd_level': 982}, 'visibility': 10000, 'wind': {'speed': 2.44, 'deg': 77, 'gust': 2.46}, 'clouds': {'all': 100}, 'dt': 1654
345437, 'sys': {'country': 'MY', 'sunrise': 1654296841, 'sunset': 1654341646}, 'timezone': 28800, 'id': 1736405, 'name': 'Jertih', 'cod': 200}
```

Et lorsqu'on essaye de la faire marcher, elle nous renvoie bien les infos météorologiques.

Et enfin, nous allons pusher le conteneur sur DockerHub pour qu'il soit accessible et utilisable.

```
(base) PS D:\Projets\DevOps\TP1_docker> docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
devopstpl latest ae8e1a41ac43 3 minutes ago 939MB
(base) PS D:\Projets\DevOps\TP1_docker> docker login --username krims000
Password:
Login Succeeded
(base) PS D:\Projets\DevOps\TP1_docker> docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
devopstpl latest ae8e1a41ac43 6 minutes ago 939MB
(base) PS D:\Projets\DevOps\TP1_docker> docker tag ae8e1a41ac43 krims000/devopstpl:devopstpl
(base) PS D:\Projets\DevOps\TP1_docker> docker push krims000/devopstpl:devopstpl
The push refers to repository [docker.io/krims000/devopstpl]
0b22704a775: Pushed
3da90c23ab9: Pushed
0d4517a86161: Pushed
b7d1856ef3e9: Pushed
b67851d607c7: Pushed
164556f818b7: Pushed
be869761d95b: Mounted from library/python
a019d1de6299: Mounted from library/python
fecf15812fff: Mounted from library/python
13b045a1d6f2: Mounted from library/python
2fhabeba902e: Mounted from library/python
ee509ed6e976: Mounted from library/python
9177197c67d0: Mounted from library/python
7dbadf2b9bd8: Mounted from library/python
67597c345c2e: Mounted from library/python
devopstpl: digest: sha256:c1033e3fd9f1544c58fe362479b2858f4cb012c5b857e59550f672ce76af7b5 size: 3470
(base) PS D:\Projets\DevOps\TP1_docker> docker run --env LAT="5.902785" --env LONG="102.754175" --env API_KEY="240aa650f4db4e154a07d0459c30a347" devopstpl
{"coord": {"lon": 102.7542, "lat": 5.9028}, "weather": [{"id": 804, "main": "Clouds", "description": "overcast clouds", "icon": "04n"}], "base": "stations", "main": {"temp": 300.76, "feels_like": 302.86, "temp_m
in": 300.76, "temp_max": 300.76, "pressure": 1000, "humidity": 68, "sea_level": 1000, "grnd_level": 902}, "visibility": 10000, "wind": {"speed": 2.44, "deg": 77, "gust": 2.46}, "clouds": {"all": 100}, "dt": 1654
945437, "sys": {"country": "my", "sunrise": 1654296841, "sunset": 1654341646}, "timezone": 28800, "id": 1736405, "name": "Jertih", "cod": 200}
(base) PS D:\Projets\DevOps\TP1_docker>
```