

CONTAINERIZE THE APP

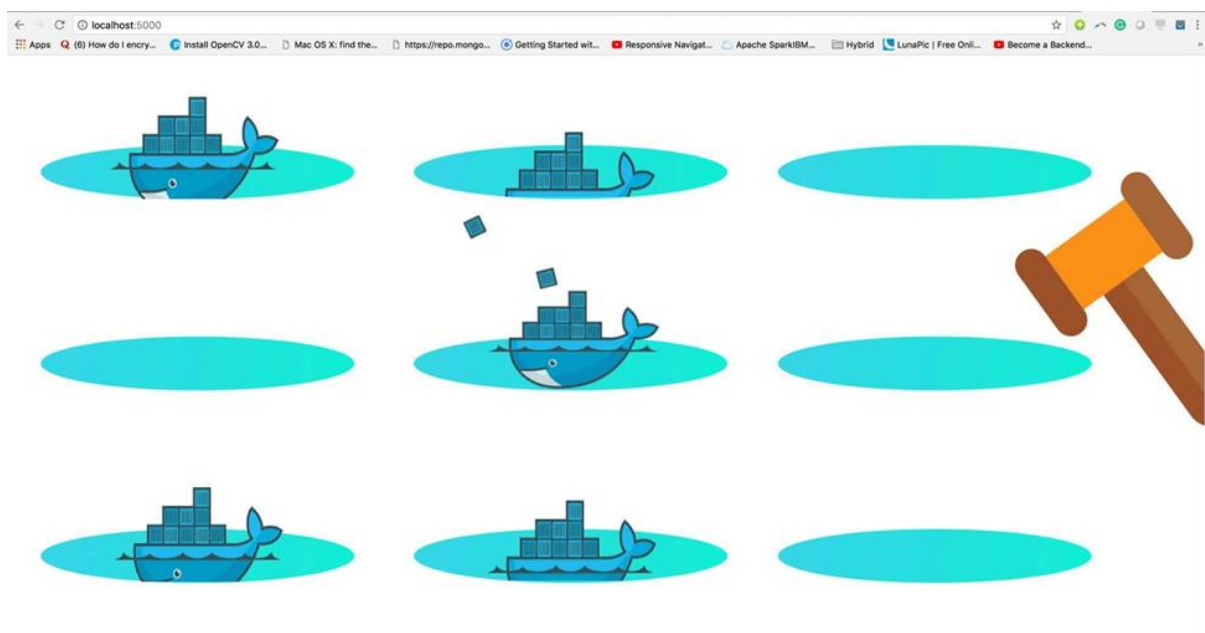
Team ID	PNT2022TMID33435
Project Name	Personal Expense Tracker Application

Build an Image from the Dockerfile:

COMMAND: docker build -t <image_name>:<tag>

```
kunals-mbp:web kunalmalhotra$ docker build -t app:latest .
Sending build context to Docker daemon 348.2kB
Step 1/8 : FROM python:2.7
--> 6c70839a7cfe
Step 2/8 : LABEL maintainer="Kunal Malhotra, kunal.malhotra@ibm.com"
--> d8b57d41591c
Step 3/8 : RUN apt-get update
--> Using cache
--> 6262a134e40e
Step 4/8 : COPY . /app
--> f07f737099f
Step 5/8 : WORKDIR /app
Removing intermediate container f9010b99d2fe
--> 0bcc6af20e3d
Step 6/8 : RUN pip install -r requirements.txt
--> Running in 8153040b00b7
Collecting click==6.7 (from -r requirements.txt (line 1))
  Downloading https://files.pythonhosted.org/packages/34/c1/8806f99713dd993c5366c362b2f908f18269f8d792aff1abfd700775a77/click-6.7-py2.py3-none-any.whl (71kB)
Collecting Flask==1.0.2 (from -r requirements.txt (line 2))
  Downloading https://files.pythonhosted.org/packages/d6/b4/a68bcbda945c00f6d608d8975131ab3f25b22f2bcfe1dab221165194b2d4/flask-1.0.2-py2.py3-none-any.whl (91kB)
Collecting itsdangerous==0.24 (from -r requirements.txt (line 3))
  Downloading https://files.pythonhosted.org/packages/d6/b4/a68bcbda945c00f6d608d8975131ab3f25b22f2bcfe1dab221165194b2d4/itsdangerous-0.24.tar.gz (46kB)
Collecting Jinja2==2.10 (from -r requirements.txt (line 4))
  Downloading https://files.pythonhosted.org/packages/7f/ff/ae64b0cdfc95f27a016a7bed8e86867630a4d277a78ca76f32659220a731/jinja2-2.10-py2.py3-none-any.whl (126kB)
Collecting MarkupSafe==1.0 (from -r requirements.txt (line 5))
  Downloading https://files.pythonhosted.org/packages/4d/de/32d741db316d8fdb7680822d37001ef7a448255de9690ab4bfcdf4172b/MarkupSafe-1.0.tar.gz
Collecting Werkzeug==0.14.1 (from -r requirements.txt (line 6))
  Downloading https://files.pythonhosted.org/packages/20/c4/12c3e56473e52375aa29c4764e70d1b8f3efa6682be8d0a0e84fe335243/Werkzeug-0.14.1-py2.py3-none-any.whl (322kB)
Building wheels for collected packages: itsdangerous, MarkupSafe
  Running setup.py bdist_wheel for itsdangerous: started
  Running setup.py bdist_wheel for itsdangerous: finished with status 'done'
  Stored in directory: /root/.cache/pip/wheels/2c/4a/61/5599631c1554768c6290b08c02c72d731710374c0602f1e5
  Running setup.py bdist_wheel for MarkupSafe: started
  Running setup.py bdist_wheel for MarkupSafe: finished with status 'done'
  Stored in directory: /root/.cache/pip/wheels/33/56/20/eb49a5c612fffe1c5a632146b16596f9e64676768661e4e46
Successfully built itsdangerous MarkupSafe
Installing collected packages: click, itsdangerous, MarkupSafe, Jinja2, Werkzeug, Flask
Successfully installed Flask-1.0.2 Jinja2-2.10 MarkupSafe-1.0 Werkzeug-0.14.1 click-6.7 itsdangerous-0.24
Removing intermediate container 8153040b00b7
--> 66d2636897bc
Step 7/8 : ENTRYPOINT [ "python" ]
--> Running in bdc1c83815e1
Removing intermediate container bdc1c83815e1
--> 73cfc38ac1c
Step 8/8 : CMD [ "app.py" ]
--> Running in a784d430dd6f
Removing intermediate container a784d430dd6f
--> d8dbb83763a5
Successfully built d8dbb83763a5
Successfully tagged app:latest
kunals-mbp:web kunalmalhotra$
```

Run container locally and test:



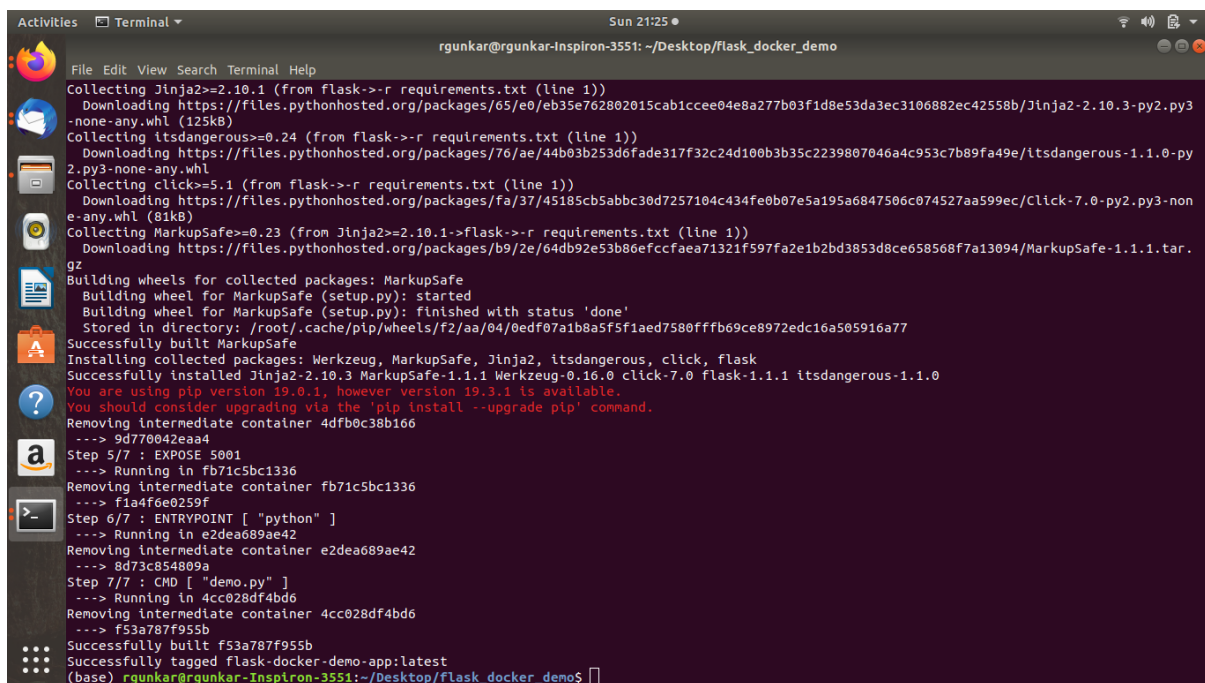
Creating docker image for flask app:

```
from flask import Flask
app = Flask(__name__)

@app.route('/')
def hello():
    return "welcome to the flask tutorials"

if __name__ == "__main__":
    app.run(host='0.0.0.0', port=5001, debug=True)
```

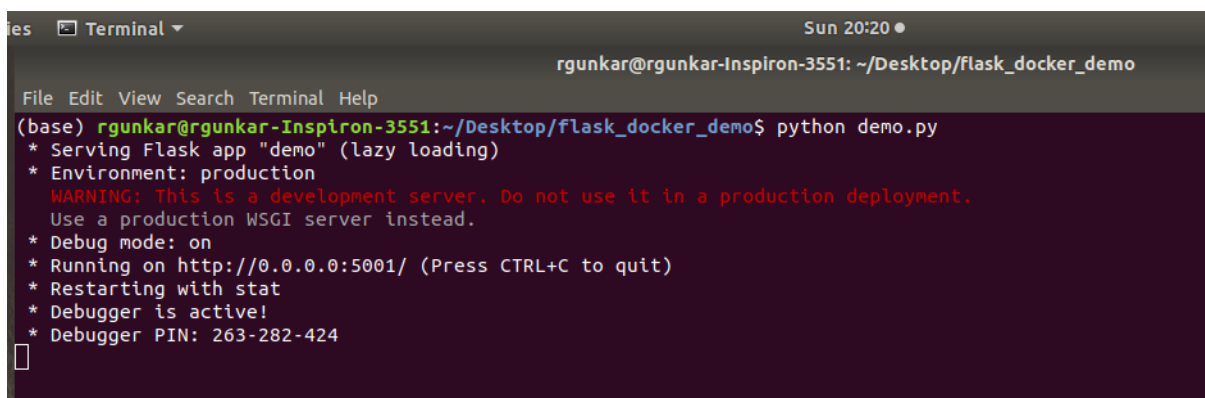
Creating a docker image of the Project:

A terminal window titled 'rgunkar@rgunkar-Inspiron-3551: ~/Desktop/flask_docker_demo' showing the output of a 'docker build -t flask-docker-demo-app:latest .' command. The output details the collection of dependencies (Jinja2, itsdangerous, click, MarkupSafe) from requirements.txt, the building of wheels, and the successful installation of packages (Werkzeug, MarkupSafe, Jinja2, itsdangerous, click, flask) using pip. It also shows the removal of intermediate containers and the final successful build and tagging of the image as 'flask-docker-demo-app:latest'.

```
Activities  Terminal  Sun 21:25  rgunkar@rgunkar-Inspiron-3551: ~/Desktop/flask_docker_demo

File Edit View Search Terminal Help
Collecting Jinja2>=2.10.1 (from flask->-r requirements.txt (line 1))
  Downloading https://files.pythonhosted.org/packages/65/e0/eb35e762802015cab1ccee04e8a277b03f1d8e53da3ec3106882ec42558b/Jinja2-2.10.3-py2.py3-none-any.whl (125kB)
Collecting itsdangerous>=0.24 (from flask->-r requirements.txt (line 1))
  Downloading https://files.pythonhosted.org/packages/76/ae/44b03b253dofade317f32c24d100b3b35c2239807046a4c953c7b89fa49e/itsdangerous-1.1.0-py2.py3-none-any.whl
Collecting click>=5.1 (from flask->-r requirements.txt (line 1))
  Downloading https://files.pythonhosted.org/packages/fa/37/45185cb5abbc30d7257104c434fe0b07e5a195a6847506c074527aa599ec/Click-7.0-py2.py3-none-any.whl (81kB)
Collecting MarkupSafe>=0.23 (from Jinja2>=2.10.1->flask->-r requirements.txt (line 1))
  Downloading https://files.pythonhosted.org/packages/b9/2e/64db92e53b86efccfaea71321f597fa2e1b2bd3853d8ce658568f7a13094/MarkupSafe-1.1.1.tar.gz
Building wheels for collected packages: MarkupSafe
  Building wheel for MarkupSafe (setup.py): started
  Building wheel for MarkupSafe (setup.py): finished with status 'done'
  Stored in directory: /root/.cache/pip/wheels/f2/aa/04/0edf07a1b8a5f5f1aed7580fffb69ce8972edc16a505916a77
Successfully built MarkupSafe
Installing collected packages: Werkzeug, MarkupSafe, Jinja2, itsdangerous, click, flask
Successfully installed Jinja2-2.10.3 MarkupSafe-1.1.1 Werkzeug-0.16.0 click-7.0 flask-1.1.1 itsdangerous-1.1.0
You are using pip version 19.0.1, however version 19.3.1 is available.
You should consider upgrading via the 'pip install --upgrade pip' command.
Removing intermediate container 4dfb0c38b166
--> 9df70042eaad
Step 5/7 : EXPOSE 5001
--> Running in fb71c5bc1336
Removing intermediate container fb71c5bc1336
--> f1a4f6e0250f
Step 6/7 : ENTRYPOINT [ "python" ]
--> Running in e2dea689ae42
Removing intermediate container e2dea689ae42
--> 8d73c854809a
Step 7/7 : CMD [ "demo.py" ]
--> Running in 4cc028df4bd6
Removing intermediate container 4cc028df4bd6
--> f53a707f955b
Successfully built f53a707f955b
Successfully tagged flask-docker-demo-app:latest
(base) rgunkar@rgunkar-Inspiron-3551:~/Desktop/flask_docker_demo$
```

Run the Docker Image:

A terminal window titled 'rgunkar@rgunkar-Inspiron-3551: ~/Desktop/flask_docker_demo' showing the output of 'python demo.py' running inside a Docker container. The output indicates that the Flask app 'demo' is serving on http://0.0.0.0:5001/ in production mode. It also shows that debug mode is on, the WSGI server is stat, and the debugger is active with a PIN of 263-282-424.

```
ies  Terminal  Sun 20:20  rgunkar@rgunkar-Inspiron-3551: ~/Desktop/flask_docker_demo

File Edit View Search Terminal Help
(base) rgunkar@rgunkar-Inspiron-3551:~/Desktop/flask_docker_demo$ python demo.py
* Serving Flask app "demo" (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://0.0.0.0:5001/ (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 263-282-424
```