

Build a docker container from custom dockerfile

step 1 : create a app.py and requirements and Dockerfile

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Activities Terminal Nov 2 12:03
1RV24MC093_SANDARSH_J_N@ubuntu: ~/Downloads/devops/lab1/prg1$ ls
app.py requirements.txt
1RV24MC093_SANDARSH_J_N@ubuntu: ~/Downloads/devops/lab1/prg1$ cat app.py
from flask import Flask

app = Flask(__name__)

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

if __name__ == "__main__":
    app.run(host="0.0.0.0", port=5000)
1RV24MC093_SANDARSH_J_N@ubuntu: ~/Downloads/devops/lab1/prg1$ cat requirements.txt
flask
1RV24MC093_SANDARSH_J_N@ubuntu: ~/Downloads/devops/lab1/prg1$ cat Dockerfile
FROM python:3.9-slim
# Set working directory
WORKDIR /app
# Copy and install dependencies
COPY requirements.txt .
RUN pip install --no-cache-dir -r requirements.txt
# Copy the application code
COPY .
# Set environment variables
ENV FLASK_APP=app.py
ENV FLASK_RUN_HOST=0.0.0.0
ENV FLASK_RUN_PORT=5000
# expose port
EXPOSE 5000
# Command to run
CMD ["flask", "run"]
1RV24MC093_SANDARSH_J_N@ubuntu: ~/Downloads/devops/lab1/prg1$
```

Step 2 : Build a docker image

```
Activities Terminal Nov 2 11:47
1RV24MC093_SANDARSH_J_N@ubuntu: ~/Downloads/devops/lab1/prg1$ ls
app.py Dockerfile requirements.txt
1RV24MC093_SANDARSH_J_N@ubuntu: ~/Downloads/devops/lab1/prg1$ docker build -t prg1 .
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
https://docs.docker.com/go/buildkit/
Step 1/10: FROM python:3.9-slim
Step 1/10: Pulling from library/python
3.9-slim: Pulling fs layer
b3e3903a6e8: Download complete
b3e3903a6e8: Pulling fs layer
fc7c4430849e2: Pulling fs layer
ea5f685404a: Pulling fs layer
ea5f685404a: Pulling fs layer
b3e3903a6e8: Verifying Checksum
b3e3903a6e8: Download complete
ea5f685404a: Verifying Checksum
ea5f685404a: Download complete
fc7c4430849e2: Verifying Checksum
fc7c4430849e2: Download complete
38513bd72563: Verifying Checksum
38513bd72563: Download complete
38513bd72563: Pull complete
b3e3903a6e8: Pull complete
fc7c4430849e2: Pull complete
Digest: sha256:2d97f6919b18d338d3060f261f53f144965f755599aab1acd1e13cf1731b1b
Status: Downloaded newer image for python:3.9-slim
Step 2/10: WORKDIR /app
--> Running in a3f869a1ec62
--> Creating intermediate container a3f869a1ec62
Step 3/10 : COPY requirements.txt .
--> 5bdefc1585fd
Step 4/10 : RUN pip install --no-cache-dir -r requirements.txt
--> Running in 28ef184a8ccb
Collecting flask
  Downloading flask-3.1.2-py3-none-any.whl (103 kB)
Collecting MarkupSafe==2.0.0
  Downloading markupsafe-2.0.0-py3-none-any.whl (16 kB)
Collecting Jinja2<3.1.2,>=3.0.0
  Downloading jinja2-3.0.3-cp39-cp39-manylinux2014-x86_64.manylinux_2_28_x86_64.whl (20 kB)
Collecting Click==8.1.0
  Downloading click-8.1.0-py3-none-any.whl (98 kB)
Collecting Jinja2<3.1.2,>=2.0.3
  Downloading Jinja2-2.11.3-py3-none-any.whl (134 kB)
Collecting importlib-metadata==3.6.0
  Downloading importlib_metadata-3.6.0-py3-none-any.whl (27 kB)
Collecting blinker==1.9.0
  Downloading blinker-1.9.0-py3-none-any.whl (8.5 kB)
Collecting werkzeug==2.1.2
  Downloading werkzeug-2.1.2-py3-none-any.whl (774 kB)
```

Step 3 : run the docker container from created docker image

```
Activities Terminal Nov 2 11:48
1RV24MC093_SANDARSH_J_N@ubuntu: ~/Downloads/devops/lab1/prg1$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
prg1 latest 0fa7e4d269c4 23 seconds ago 133MB
python 3.9-slim 085da638e1b8 31 hours ago 122MB
1RV24MC093_SANDARSH_J_N@ubuntu: ~/Downloads/devops/lab1/prg1$ docker run -it -p 5000:5000 --name cont1
docker: 'docker run' requires at least 1 argument
Usage: docker run [OPTIONS] IMAGE [COMMAND] [ARG...]
See 'docker run --help' for more information
1RV24MC093_SANDARSH_J_N@ubuntu: ~/Downloads/devops/lab1/prg1$ docker run -it -p 5000:5000 --name cont1 prg1
* Serving Flask app 'app.py'
* 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 all addresses (0.0.0.0)
* Running on http://127.0.0.1:5000
* Running on http://172.17.0.2:5000
Press CTRL+C to quit
172.17.0.1 - - [02/Nov/2025 06:18:39] "GET / HTTP/1.1" 200 -
172.17.0.1 - - [02/Nov/2025 06:18:39] "GET /favicon.ico HTTP/1.1" 404 -
```

output :

