

# Program 1

## Project Structure:

```
lab1-devops/  
├──  
├── app.py  
├── requirements.txt  
├── Dockerfile  
├── flenv/          # Python virtual environment (local)  
└── README.md
```

## Dockerfile:

```
# lab 1 file  
FROM python:3.9-slim  
  
WORKDIR /app  
  
COPY requirements.txt .  
RUN pip install -r requirements.txt  
  
LABEL maintainer="Kunal"  
  
LABEL version="1.0"  
  
COPY . .  
  
ENV FLASK_APP=app.py  
ENV FLASK_RUN_HOST=0.0.0.0  
ENV FLASK_RUN_PORT=5000  
  
EXPOSE 5000  
  
CMD ["flask", "run"]
```

## [app.py](#)

```
from flask import Flask  
  
app = Flask(__name__)  
  
@app.route('/')  
def hello():
```

```
    return "hello world from container"

if __name__ == '__main__':
    app.run(host="0.0.0.0", port=5000)
```

Requirements.txt

Flask

## Setup and Installation:

Make sure Python 3 is installed:

```
python3 --version
```

If not installed, you can install it (on Ubuntu/Debian):

```
sudo apt update
```

```
sudo apt install python3 python3-venv python3-pip -y
```

In your project folder (e.g., `~/lab1-devops`):

```
python3 -m venv flenv
```

Activate the environment:

```
source flenv/bin/activate
```

```
(flenv)~(singh@singh)-[~/lab1-devops]
```

```
└─$ sudo docker build -t pythonapp:latest .
```

```
(flenv)~(singh@singh)-[~/lab1-devops]
```

```
└─$ sudo docker run -d -p 5000:5000 --name contain-myapplication pythonapp
```

**Open:**

**<http://localhost:5000>**



hello world from container