

| LAB 02 |

UBO (KALI)

25/2/25

2] Implement, build, test, configure & monitor software applicⁿ in DevOps (using flask)

Terminal :

```
> sudo apt update //update existing resources.
> python3 --version //check if python is installed
> sudo apt install python3-pip -y //update version.
> pip --version //check.
> sudo apt install python3-venv -y //install venv
virtual environ-ment
(terminals).
```

Build :

→ mkdir , then cd.

```
> python3 -m venv flaskenv
```

now,
in virtual
envi.

```
> source flaskenv/bin/activate.
```

```
→ pip install flask ★
```

// create flask app

```
> nano app.py.
```

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

```
@app.route('/')
def home():
```

```
    return "hello, DevOps"
```

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

```
> python3 app.py // to execute
```

// open in web browser to see output

Test : nano test.py.

```
import unittest
```

```
from app import app
```

```
class TestApp(unittest.TestCase):
```

```
    def test_home(self):
```

```

tester = app.test_client()
response = tester.get('/')

self.assertEqual(response.status_code, 200)
self.assertEqual(response.data, b'hello, DevOps')

```

```

if __name__ == "__main__":
    unittest.main()

```

//should match
with app.py
comment.

execute test.py

run 1 test in 0.002 sec.

OK.

to Configure:

> nano .env

flask-port = 5000

> Terminal,

> pip install python-dotenv

> nano app.py (modify), →

check
or create
app2.py

import os

from flask import Flask

app = Flask(__name__)

@app.route('/')
def home():

return "Hello, DevOps"

if __name__ == "__main__":

port = int(os.getenv("flask-port", 5000))

app.run(host='0.0.0.0', port=port)

> python3 app.py

to monitor:

> nano app.py (modify program), (app3.py)

add function: check.

@app.route('/health')

```
def health():
    return {"status": "up"}, 200
```

> python3 app.py

> run in browser → http://127.0.0.1:5000/health.

→ JSON.

{~~status~~: "up"}

in shell (bash) ✓ in CP

> nano build.sh

```
#!/bin/bash
```

```
echo "setting up environment..."
```

```
python3 -m venv venv
```

```
source ./venv/bin/activate
```

pip install flask

```
echo "Environment setup complete, run the app with: python"
```

> bash build.sh // to run.