

## Pertemuan 9

### 1. Membuat env Python 3.14t (Free Threaded)

```
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

Loading personal and system profiles took 751ms.
PS C:\Users\ASUS> cd $HOME/src
PS C:\Users\ASUS\src> git clone https://github.com/pallets/flask
Cloning into 'flask'...
remote: Enumerating objects: 25849, done.
remote: Counting objects: 100% (98/98), done.
remote: Compressing objects: 100% (49/49), done.
remote: Total 25849 (delta 72), reused 49 (delta 49), pack-reused 25751 (from 3)
Receiving objects: 100% (25849/25849), 11.12 MiB | 454.00 KiB/s, done.
Resolving deltas: 100% (17264/17264), done.
PS C:\Users\ASUS\src>

PS C:\Users\ASUS\src> git clone https://github.com/pallets/flask
Cloning into 'flask'...
remote: Enumerating objects: 25849, done.
remote: Counting objects: 100% (98/98), done.
remote: Compressing objects: 100% (49/49), done.
remote: Total 25849 (delta 72), reused 49 (delta 49), pack-reused 25751 (from 3)
Receiving objects: 100% (25849/25849), 11.12 MiB | 353.00 KiB/s, done.
Resolving deltas: 100% (17264/17264), done.
PS C:\Users\ASUS\src>

remote: Enumerating objects: 25849, done.
remote: Counting objects: 100% (98/98), done.
remote: Compressing objects: 100% (49/49), done.
remote: Total 25849 (delta 72), reused 49 (delta 49), pack-reused 25751 (from 3)
Receiving objects: 100% (25849/25849), 11.12 MiB | 353.00 KiB/s, done.
Resolving deltas: 100% (17264/17264), done.
PS C:\Users\ASUS\src> cp -R flask/examples/tutorial flask-app

Windows PowerShell
PS C:\Users\ASUS\src> ls

Directory: C:\Users\ASUS\src

Mode                LastWriteTime         Length Name
----                -
d-----          12/4/2025  11:10 AM             flask
d-----          12/4/2025  11:12 AM          flask-app

PS C:\Users\ASUS\src> cd flask-app
PS C:\Users\ASUS\src\flask-app> uv venv
Using CPython 3.14.0
Creating virtual environment at: .venv
Activate with: .venv\Scripts\activate
PS C:\Users\ASUS\src\flask-app>

Windows PowerShell
PS C:\Users\ASUS\src\flask-app> .\.venv\Scripts\Activate.ps1
(flask-app) PS C:\Users\ASUS\src\flask-app> uv sync
warning: No 'requires-python' value found in the workspace. Defaulting to '>=3.14'.
Resolved 14 packages in 829ms
  Built flaskr @ file:///C:/Users/ASUS/src/flask-app
Prepared 9 packages in 9.04s
Installed 9 packages in 67ms
+ blinker==1.9.0
+ click==8.3.1
+ colorama==0.4.6
+ flask==3.1.2
+ flaskr==1.0.0 (from file:///C:/Users/ASUS/src/flask-app)
+ itsdangerous==2.2.0
+ jinja2==3.1.6
+ markupsafe==3.0.3
+ werkzeug==3.1.4
(flask-app) PS C:\Users\ASUS\src\flask-app>
```

## 2. Menjalankan Aplikasi Flask

```
(flask-app) PS C:\Users\ASUS\src\flask-app> flask --app flaskr init-db
Initialized the database.
(flask-app) PS C:\Users\ASUS\src\flask-app> flask --app flaskr run
* Serving Flask app 'flaskr'
* 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 http://127.0.0.1:5000
Press CTRL+C to quit
```

127.0.0.1:5000

**Flaskr**[Register](#)[Log In](#)

**Posts**

**Flaskr**[Register](#)[Log In](#)

**Register**

**Username**

**Password**

**Flaskr**[Register](#)[Log In](#)

**Log In**

**Username**

**Password**

**Flaskr**fajar[Log Out](#)

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### 3. Buat Aplikasi Menjadi CA

```
Windows PowerShell
(flask-app) PS C:\Users\ASUS\src\flask-app> cd C:\Users\ASUS\src\flask-app
(flask-app) PS C:\Users\ASUS\src\flask-app> notepad Dockerfile
(flask-app) PS C:\Users\ASUS\src\flask-app> ls

Directory: C:\Users\ASUS\src\flask-app

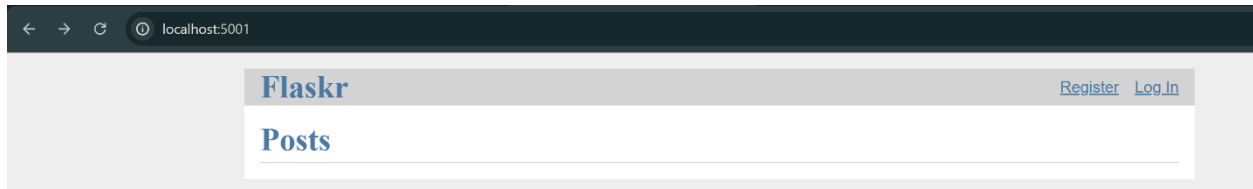
Mode                LastWriteTime         Length Name
----                -
d-----          12/4/2025  11:20 AM                .venv
d-----          12/4/2025  11:22 AM                flaskr
d-----          12/4/2025  11:31 AM                instance
d-----          12/4/2025  10:50 AM                tests
d-----          12/4/2025  11:12 AM                tutorial
-a-----          12/4/2025  10:45 AM             133 .gitignore
-a-----          12/4/2025  11:41 AM             213 Dockerfile.txt
-a-----          12/4/2025  10:45 AM             1503 LICENSE.txt
-a-----          12/4/2025  10:45 AM             811 pyproject.toml
-a-----          12/4/2025  10:45 AM             1341 README.rst
-a-----          12/4/2025  11:20 AM            16761 uv.lock
```

```
Windows PowerShell
(flask-app) PS C:\Users\ASUS\src\flask-app> docker build -t flaskr:1.0.1 .
[+] Building 28.7s (11/11) FINISHED                                docker:desktop-linux
=> [internal] load build definition from Dockerfile                0.0s
=> => transferring dockerfile: 252B                                0.0s
=> [internal] load metadata for docker.io/library/python:3.14-alpine 4.4s
=> [internal] load .dockerignore                                   0.0s
=> => transferring context: 2B                                       0.0s
=> [1/6] FROM docker.io/library/python:3.14-alpine@sha256:b80c82b1a282283bd3e3cd3c6a4c895d56d1385879 6.0s
=> => resolve docker.io/library/python:3.14-alpine@sha256:b80c82b1a282283bd3e3cd3c6a4c895d56d1385879 0.0s
=> => sha256:72fb190ed6eaa583e20cde20bb68ca9f51f1b94038c8e594e6fd1c2e1b3fd48 249B / 249B 0.6s
=> => sha256:65c1fa3fdd46d8b101a69bd9cb489d9b5db0aea7ab6e3ff91ab2a4d71251cf53 13.36MB / 13.36MB 3.7s
=> => sha256:ba414809741bdefdc6a6e2a68045e78257b555d5a74567ef94a0e6fe1cafb6d 460.82kB / 460.82kB 1.4s
=> => sha256:014e56e613968f73cce0858124ca5fbc601d7888099969a4eea69f31dcd71a53 3.86MB / 3.86MB 4.2s
=> => extracting sha256:014e56e613968f73cce0858124ca5fbc601d7888099969a4eea69f31dcd71a53 0.2s
=> => extracting sha256:ba414809741bdefdc6a6e2a68045e78257b555d5a74567ef94a0e6fe1cafb6d 0.4s
=> => extracting sha256:65c1fa3fdd46d8b101a69bd9cb489d9b5db0aea7ab6e3ff91ab2a4d71251cf53 1.0s
=> => extracting sha256:72fb190ed6eaa583e20cde20bb68ca9f51f1b94038c8e594e6fd1c2e1b3fd48 0.0s
=> [internal] load build context                                   0.5s
=> => transferring context: 5.45MB                                   0.5s
=> [2/6] RUN mkdir /app                                          0.6s
=> [3/6] WORKDIR /app                                           0.1s
=> [4/6] ADD . /app/                                             0.2s
=> [5/6] RUN pip install -e .                                    11.1s
=> [6/6] RUN flask --app flaskr init-db                         1.1s
=> exporting to image                                           2.8s
=> => exporting layers                                             1.6s
=> => exporting manifest sha256:9dd3fd3cf3f5edd79e2aa8b3b59e4908b861b46a4798d494562e9f8a9258721f 0.0s
=> => exporting config sha256:6c7b78fb7cb79091c221a20475c45a71214a84b90d59a1cc7f355892ca1890b1 0.0s
=> => exporting attestation manifest sha256:a4a6e1c2046caef641bd3d39b5ee825a16669130a5705d3e7b189838 0.0s
=> => exporting manifest list sha256:133c2cde671e145dfae04861be64909a6a89c64e7c8190472413f317de20e 0.0s
=> => naming to docker.io/library/flaskr:1.0.1                    0.0s
=> => unpacking to docker.io/library/flaskr:1.0.1                 1.0s

View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux/ve80ltxma5x9o6r4haavhzlr
(flask-app) PS C:\Users\ASUS\src\flask-app>
```

### 4. Menjalankan Image

```
View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux/ve80ltxma5x9o6r4haavhzlr
(flask-app) PS C:\Users\ASUS\src\flask-app> docker run -p 5001:5000 flaskr:1.0.1
* Serving Flask app 'flaskr'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI serve
r 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 - - [04/Dec/2025 04:56:34] "GET / HTTP/1.1" 200 -
172.17.0.1 - - [04/Dec/2025 04:56:34] "GET /static/style.css HTTP/1.1" 200 -
172.17.0.1 - - [04/Dec/2025 04:56:34] "GET /favicon.ico HTTP/1.1" 404 -
172.17.0.1 - - [04/Dec/2025 04:56:44] "GET /auth/register HTTP/1.1" 200 -
172.17.0.1 - - [04/Dec/2025 04:56:44] "GET /static/style.css HTTP/1.1" 304 -
```



## 5. Menggunakan Kubernetes

Ambil file di [Kubernetes.io/docs/tasks/tools](https://kubernetes.io/docs/tasks/tools/)

### Penginstallan Kind

```
PS C:\Users\ASUS\src\flask-app> kind version
kind v0.30.0 go1.24.6 windows/amd64
PS C:\Users\ASUS\src\flask-app>
```

```
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\ASUS> cd C:\Users\ASUS\src\flask-app
PS C:\Users\ASUS\src\flask-app> kind version
kind v0.30.0 go1.24.6 windows/amd64
PS C:\Users\ASUS\src\flask-app> kind create cluster --name flask-cluster
Creating cluster "flask-cluster" ...
  • Ensuring node image (kindest/node:v1.34.0) ...
  ✓ Ensuring node image (kindest/node:v1.34.0) ...
  • Preparing nodes ...
  ✓ Preparing nodes ...
  • Writing configuration ...
  ✓ Writing configuration ...
  • Starting control-plane ...
  ✓ Starting control-plane ...
  • Installing CNI ...
  ✓ Installing CNI ...
  • Installing StorageClass ...
  ✓ Installing StorageClass ...
Set kubectl context to "kind-flask-cluster"
You can now use your cluster with:
```

```
PS C:\Users\ASUS\src\flask-app> kubectl cluster-info
Kubernetes control plane is running at https://127.0.0.1:58416
CoreDNS is running at https://127.0.0.1:58416/api/v1/namespaces/kube-system/services/kube-dns:dns/proxy

To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.
PS C:\Users\ASUS\src\flask-app>
```

```
PS C:\Users\ASUS\src\flask-app> docker container ls
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS
NAMES
c0c82a69fbc   kindest/node:v1.34.0   "/usr/local/bin/entr..." 12 minutes ago Up 11 minutes 127.0.0.1:58416->6443/tcp
p_flask-cluster-control-plane
PS C:\Users\ASUS\src\flask-app>
```

```
PS C:\Users\ASUS\src\flask-app> kind load docker-image flaskr:1.0.1 --name flask-cluster
Image: "flaskr:1.0.1" with ID "sha256:133c2ccde671e145dffae04861be64909a6a89c64e7c8190472413f317de20eb" not yet present
on node "flask-cluster-control-plane", loading...
PS C:\Users\ASUS\src\flask-app>
```

```
PS C:\Users\ASUS\src\flask-app> kubectl apply -f deployment.yaml
error: error when retrieving current configuration of:
Resource: "apps/v1, Resource=deployments", GroupVersionKind: "apps/v1, Kind=Deployment"
Name: "", Namespace: "default"
from server for: "deployment.yaml": resource name may not be empty
PS C:\Users\ASUS\src\flask-app> kubectl apply -f service.yaml
error: error when retrieving current configuration of:
Resource: "/v1, Resource=services", GroupVersionKind: "/v1, Kind=Service"
Name: "", Namespace: "default"
from server for: "service.yaml": resource name may not be empty
```

```
PS C:\Users\ASUS\src\flask-app> kubectl get svc
NAME         TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)    AGE
kubernetes   ClusterIP   10.96.0.1    <none>        443/TCP    32m
PS C:\Users\ASUS\src\flask-app> |
```

```
Run 'docker inspect --help' for more information
PS C:\Users\ASUS\src\flask-app> docker inspect -f "{{.NetworkSettings.Networks.kind.IPAddress}}" flask-cluster-control-plane
172.18.0.2
PS C:\Users\ASUS\src\flask-app> |
```

```
PS C:\Users\ASUS\src\flask-app> kubectl get svc
NAME         TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)    AGE
kubernetes   ClusterIP   10.96.0.1    <none>        443/TCP    37m
PS C:\Users\ASUS\src\flask-app> |
```