

Pertemuan 9

1. Membuat env Python 3.14t (Free Threaded)

```
Windows PowerShell
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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 serve
r instead.
 * Running on http://127.0.0.1:5000
Press CTRL+C to quit
```

A screenshot of the 'Register' page for the Flaskr application. The page title is 'Flaskr'. On the right, there are 'Register' and 'Log In' links. The form fields include 'Username' (with 'fajar' entered) and 'Password' (with '....' entered). A 'Register' button is at the bottom.A screenshot of the 'Log In' page for the Flaskr application. The page title is 'Flaskr'. On the right, there are 'Register' and 'Log In' links. The form fields include 'Username' (with 'fajar' entered) and 'Password' (with '....' entered). A 'Log In' button is at the bottom.A screenshot of the 'Posts' page for the Flaskr application. The page title is 'Flaskr'. On the right, there is a user profile with 'fajar' and 'Log Out' links. Below the profile, there is a 'New' link. The main content area has the word 'Posts' centered.

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
```

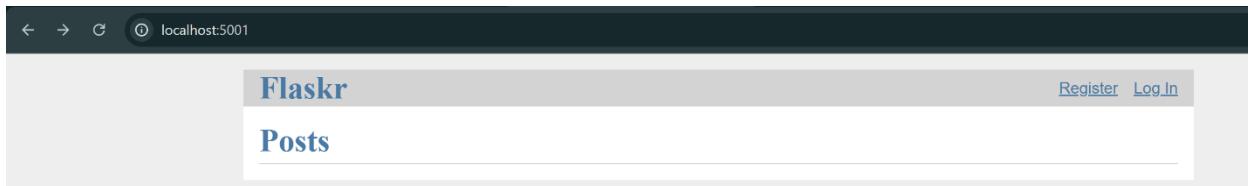
```
Windows PowerShell

(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
--> [internal] load metadata for docker.io/library/python:3.14-alpine
--> [internal] load .dockerignore
--> [internal] load context: 2B
--> [1/6] FROM docker.io/library/python:3.14-alpine@sha256:b80c82b1a282283bd3e3cd3c6a4c895d56d1385879
--> [2/6] RUN pip install -e .
--> [3/6] WORKDIR /app
--> [4/6] ADD . /app/
--> [5/6] RUN flask --app flaskr init-db
--> exporting to image
--> exporting layers
--> exporting manifest sha256:a014e56e613968f73cce0858124ca5fbc601d7888099969a4eea69f31dd71a53
--> exporting config sha256:6c7b78fb7cb79091c221a20475c45a71214a84b90d59a1cc7f355892ca1890b1
--> exporting attestation manifest sha256:a4a6e1c2046caeef641bd3d39b5ee825a16669130a5705d3e7b189838
--> exporting manifest list sha256:ba414809741bdefceaa6e2a68045e78257b555d5a74567ef94a0e6fe1cafbd 460.82kB / 460.82kB
--> naming to docker.io/library/flaskr:1.0.1
--> unpacking to docker.io/library/flaskr:1.0.1

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 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 - - [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      X + 
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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) [OK] ...
  ✓ Ensuring node image (kindest/node:v1.34.0) [OK]
  • Preparing nodes [OK] ...
  ✓ Preparing nodes [OK]
  • Writing configuration [OK] ...
  ✓ Writing configuration [OK]
  • Starting control-plane [OK] ...
  ✓ Starting control-plane [OK]
  • Installing CNI [OK] ...
  ✓ Installing CNI [OK]
  • Installing StorageClass [OK] ...
  ✓ Installing StorageClass [OK]
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
c0c82a69fbcb   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-p
lane
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> |
```