Modul Latihan Flask RESTful API

Program AI Mastery – Orbit Future Academy

Bagian I – Getting Started

1. Clone Repository
    1. Pastikan Anda sudah meng-*install git.* Untuk mengeceknya, Anda dapat menjalankan perintah berikut pada aplikasi terminal (disarankan menggunakan git bash).

        `$ git –version`

        ```
        rasyidev@home ~
        $ git --version
        git version 2.35.1.windows.2
        ```

        Apabila sudah terinstall git, maka akan muncul versi git seperti pada gambar di atas.

    2. Silahkan buka aplikasi terminal, lalu pindahkan *directory* sesuai dengan keinginan Anda menggunakan perintah `cd`.
    Anda bebas menempatkan current directory di tempat yang Anda inginkan. Dalam contoh berikut akan berpindah dari *directory* home (~) ke directory ~/Documents.

        ```
        rasyidev@home ~
        $ cd ~/Documents/
        ```

        ```
        rasyidev@home ~/Documents
        $
        ```

    3. Clone repository https://github.com/rasyidev/aim-technical.git dengan perintah berikut.

        `$ git clone https://github.com/rasyidev/aim-technical.git`

Cloning Github Repository

```
rasyidev@home ~/Documents
$ git clone https://github.com/rasyidev/aim-technical.git
Cloning into 'aim-technical'...
remote: Enumerating objects: 280, done.
remote: Counting objects: 100% (280/280), done.
remote: Compressing objects: 100% (194/194), done.
remote: Total 280 (delta 147), reused 176 (delta 64), pack-reused
0Receiving objects:  82% (230/280)
Receiving objects: 100% (280/280), 1.21 MiB | 2.97 MiB/s, done.
Resolving deltas: 100% (147/147), done.
$
```

4. Pastikan repository berhasil di-*clone* dengan perintah berikut.

   ```
   $ ls
   ```

Cek folder hasil clone

```
rasyidev@home ~/Documents
$ ls
 .../              .../        .../
 aim-technical/    .../        .../
```

Setelah menjalankan perintah `ls`, maka akan terdapat folder `aim-technical` yang menandakan proses *clone* berhasil. `../` Merepresentasikan folder lainnya di directory ~/Document, tapi kita hanya fokus pada folder `aim-technical`.

5. Pindahkan direktori ke dalam aim-technical dengan perintah berikut.

   ```
   $ cd aim-technical/
   ```

Pindah ke directory aim-mastery

```
rasyidev@home ~/Documents
$ cd aim-technical/
```

Pindah ke directory aim-mastery

```
rasyidev@home ~/Documents/aim-technical (main)
$
```

2. Instalasi Environment
    1. Pindah direktori ke M7S1 dengan perintah berikut.

```
$ cd M7S1
```

Pindah ke directory M7S1

```
rasyidev@home ~/Documents/aim-technical (main)
$ cd M7S1/
```

Pindah ke directory M7S1

```
rasyidev@home ~/Documents/aim-technical/M7S1 (main)
$
```

    2. Buat environment baru dan Install semua dependency menggunakan perintah conda berikut.

```
$ conda env create -f flask.yml
```

Pindah ke directory M7S1

```
rasyidev@home ~/Documents/aim-technical/M7S1 (main)
$ conda env create -f flask.yml
```

Instalasi environment

```
rasyidev@home ~/Documents/aim-technical/M7S1 (main)
$ conda env create -f flask.yml
WARNING: A space was detected in your requested environment path
'C:\Users\username-anda\anaconda3\envs\flask'
Spaces in paths can sometimes be problematic.
Collecting package metadata (repodata.json): done
Solving environment: done
Preparing transaction: done
Verifying transaction: done
....
# Jika ditanyakan konfirmasi y/n, ketik y lalu tekan enter
....
done
#
# To activate this environment, use
#
#     $ conda activate flask_test
#
# To deactivate an active environment, use
#
#     $ conda deactivate
```

3. Aktifkan environment flask yang baru saja Anda *install.*

```
$ conda activate flask
```

Mengaktifkan environment flask

```
rasyidev@home ~/Documents/aim-technical/M7S1 (main)
$ conda activate flask
```

Mengaktifkan environment flask

```
(flask)
rasyidev@home ~/Documents/aim-technical/M7S1 (main)
$ conda activate flask
```

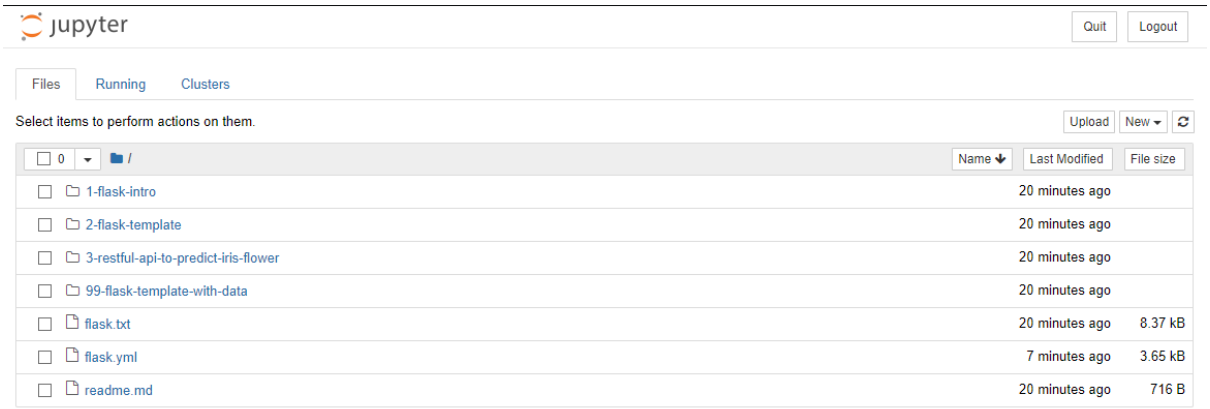
4. Jalankan Jupyter Notebook dengan perintah berikut.

```
$ jupyter notebook
```

Menjalankan Jupyter Notebook

```
(flask)
rasyidev@home ~/Documents/aim-technical/M7S1 (main)
$ jupyter notebook
[I 14:40:48.314 NotebookApp] [nb_conda_kernels] enabled, 8 kernels
found
[I 14:40:49.067 NotebookApp] Serving notebooks from local directory:
C:\Users\Habib Abdurrasyid\Documents\aim-technical\M7S1
[I 14:40:49.067 NotebookApp] Jupyter Notebook 6.4.8 is running at:
[I 14:40:49.067 NotebookApp] http://localhost:8888/?token=e1t5-in1-
b3d4-b3d4-t14p-0r4n9-y4-g41s
```

Setelah menjalankan jupyter notebook, Anda akan langsung diarahkan ke browser dengan tampilan berikut.



Bagian II – Menjalankan Aplikasi Flask

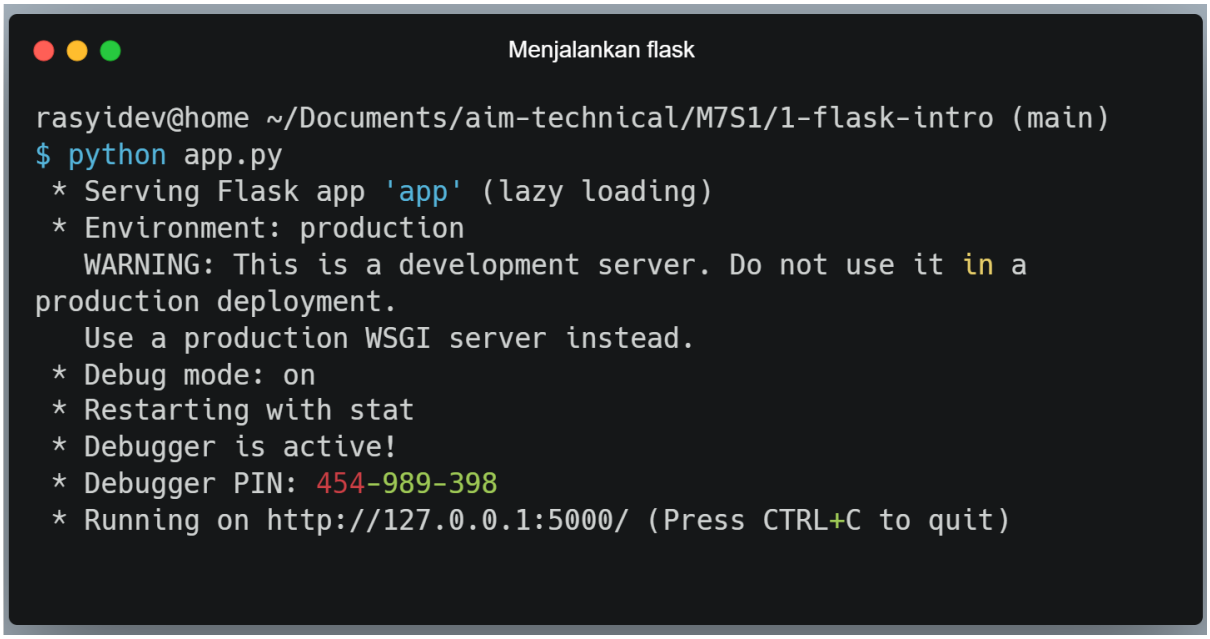
A. Flask Intro

1. Pindah directory ke 1-flask-intro menggunakan perintah berikut

```
$ cd 1-flask-intro
```

2. Jalankan program app.py dengan menggunakan perintah berikut.

```
$ python app.py
```



Perintah tersebut akan menjalankan server flask. Untuk mengeceknya Anda dapat mengunjungi http://localhost:5000/ pada aplikasi Browser Anda.

3. Buka direktori jupyter notebook pada Browser Anda, masuk ke dalam folder 1-flask-intro, lalu jalankan file 1-flask-intro.ipynb pada juptyter notebook.

Jalankan setiap cell dan perhatikan outputnya.

4. Matikan server flask dengan menenekan CTRL + C.

Mematikan flask

```
 * Serving Flask app 'app' (lazy loading)
 * Environment: production
   WARNING: This is a development server. Do not use it in a
production deployment.
   Use a production WSGI server instead.
 * Debug mode: on
 * Restarting with stat
 * Debugger is active!
 * Debugger PIN: 454-989-398
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)

(flask)
rasyidev@home ~/Documents/aim-technical/M7S1/1-flask-intro (main)
```

5. Jalankan server flask dengan file app-returns-json.py dan jalankan ulang notebook 1-flask-intro.ipynb. Perhatikan perbedaannya.

B. Flask Template

1. Pindah directory ke 2-flask-template dengan menjalankan perintah berikut.

```
$ cd ../2-flask-template
```

Pindah directory ke 2-flask-template

```
(flask)
rasyidev@home ~/Documents/aim-technical/M7S1/1-flask-intro (main)
$ cd ../2-flask-template/
```

Pindah directory ke 2-flask-template

```
(flask)
rasyidev@home ~/Documents/aim-technical/M7S1/2-flask-template (main)
$
```

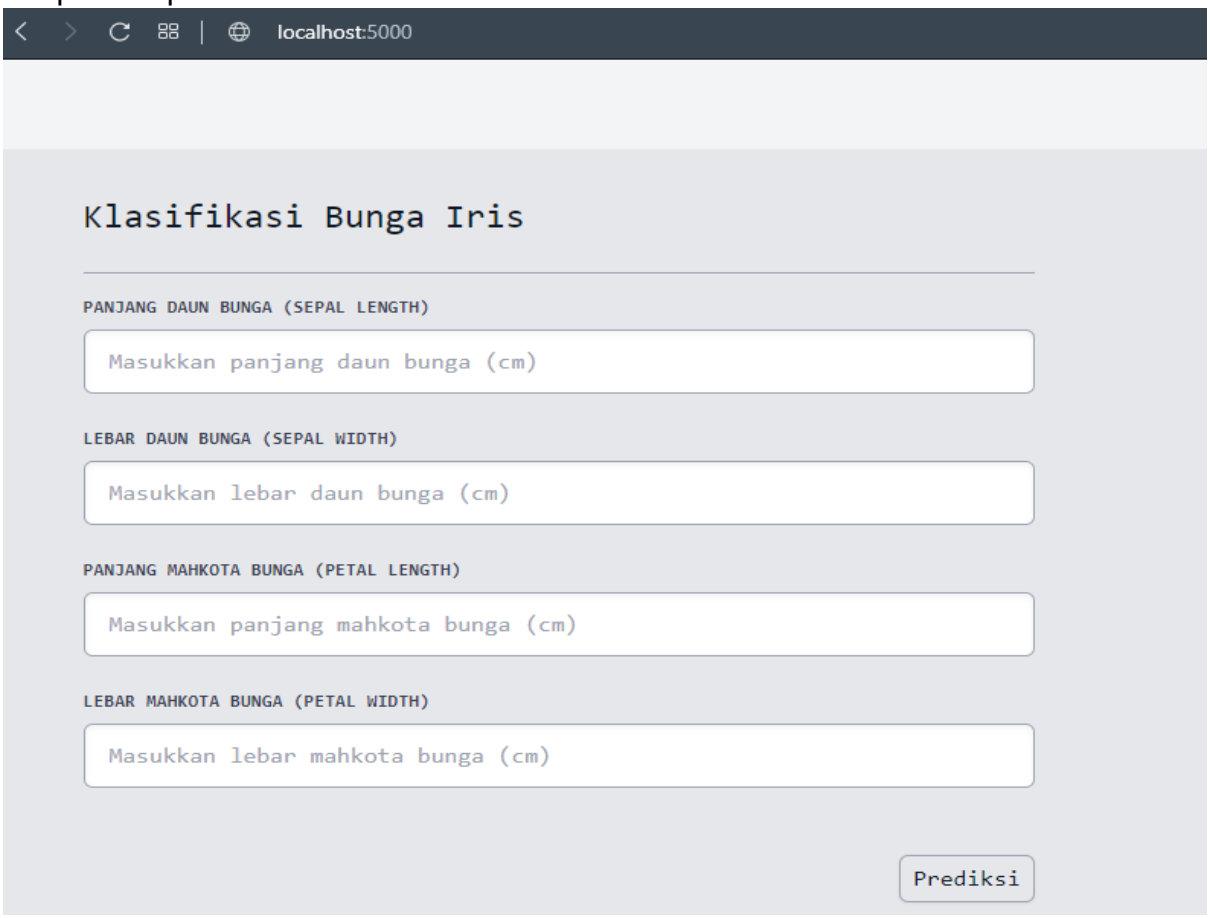
2. Jalankan server flask dengan nama file app.py

```
$ python app.py
```

Menjalankan flask

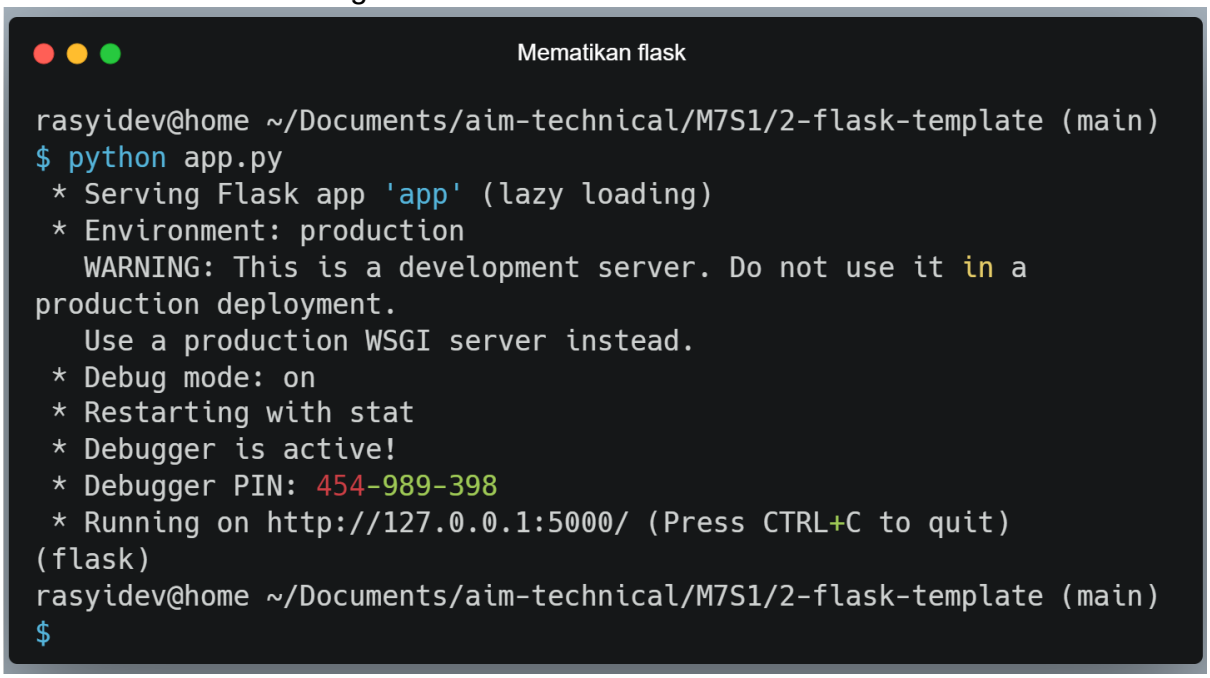
```
rasyidev@home ~/Documents/aim-technical/M7S1/2-flask-template (main)
$ python app.py
 * Serving Flask app 'app' (lazy loading)
 * Environment: production
   WARNING: This is a development server. Do not use it in a
production deployment.
   Use a production WSGI server instead.
 * Debug mode: on
 * Restarting with stat
 * Debugger is active!
 * Debugger PIN: 454-989-398
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
```

3. Buka browser Anda dan kunjungi http://localhost:5000, maka akan muncul tampilan seperti berikut ini.



Tampilan tersebut merupakan tampilan hasil render file html yang dijalankan menggunakan server flask.

4. Matikan server flask dengan menenekan CTRL + C.



C. RESTful API untuk Klasifikasi Bunga Iris

1. Pindah directory ke 2-flask-template dengan menjalankan perintah berikut.

```
$ cd ../3-restful-api-to-predict-iris-flower
```

Pindah directory

```
(flask)
rasyidev@home ~/Documents/aim-technical/M7S1/2-flask-template (main)
$ cd ../3-restful-api-to-predict-iris-flower
```

Pindah directory

```
(flask)
rasyidev@home ~/Documents/aim-technical/M7S1/3-restful-api-to-
predict-iris-flower (main)
$
```

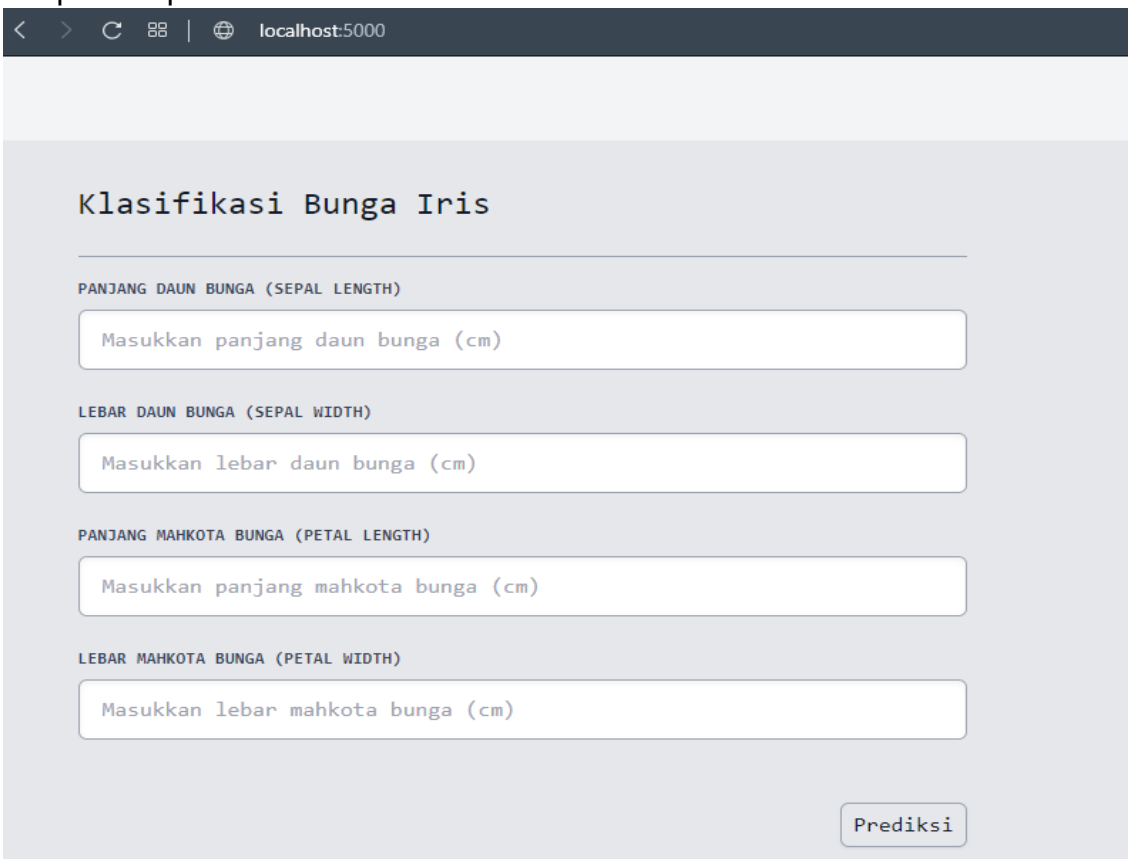
2. Jalankan server flask dengan perintah berikut

```
$ python app.py
```

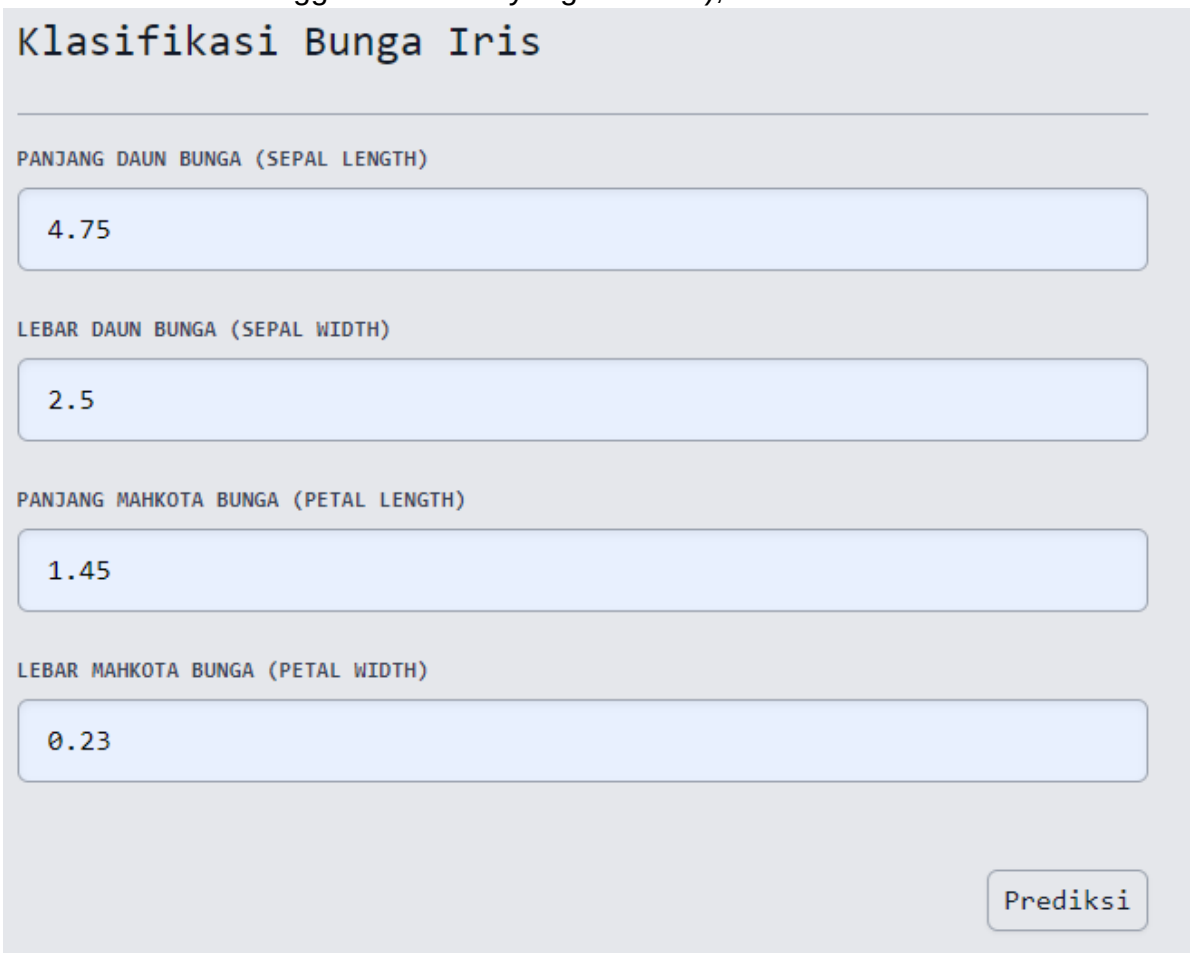
Menjalankan flask

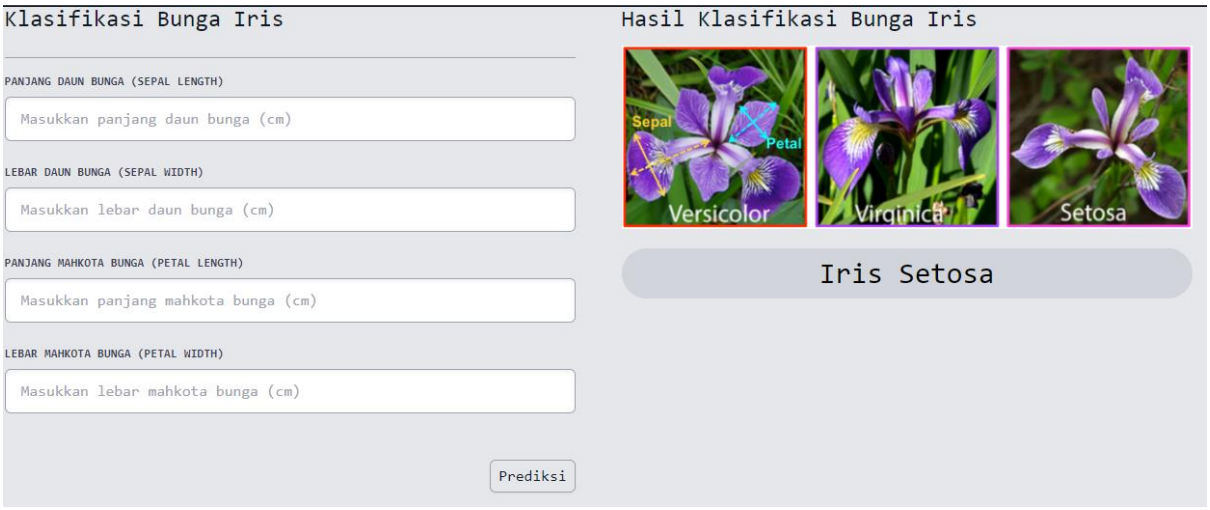
```
(flask)
rasyidev@home ~/Documents/aim-technical/M7S1/3-restful-api-to-
predict-iris-flower (main)
$ python app.py
 * Serving Flask app 'app' (lazy loading)
 * Environment: production
   WARNING: This is a development server. Do not use it in a
production deployment.
   Use a production WSGI server instead.
 * Debug mode: on
 * Restarting with stat
 * Debugger is active!
 * Debugger PIN: 454-989-398
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
```

3. Buka browser Anda dan kunjungi http://localhost:5000, maka akan muncul tampilan seperti berikut ini.



4. Isi form dengan nilai seperti tampak pada gambar berikut (Anda boleh mencoba untuk menggunakan nilai yang berbeda), lalu tekan tombol Prediksi.





Terima kasih