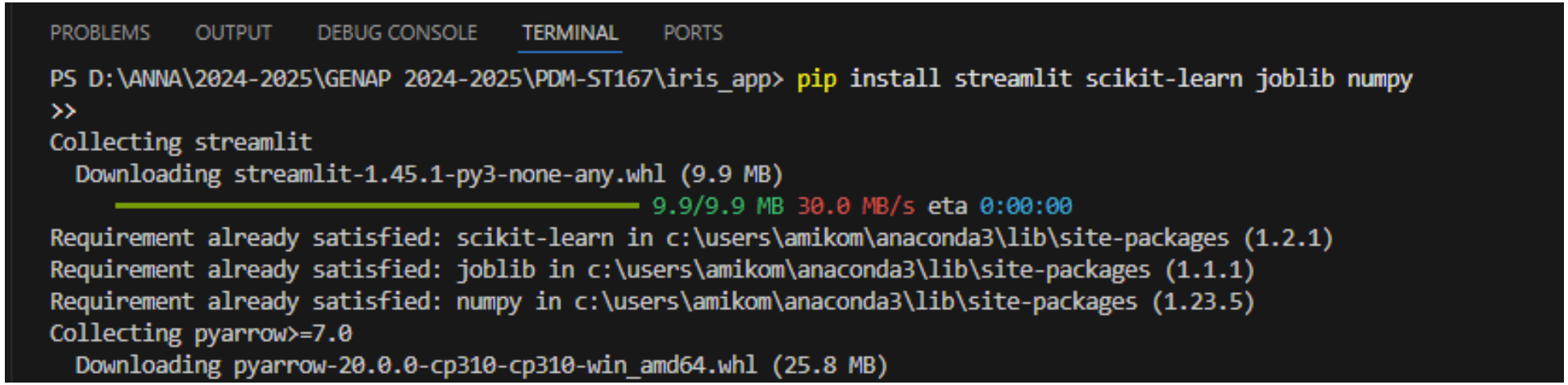
Machine Learning Deployment using Streamlit

Anna Baita

Tahapan

- 1.Siapkan environmentnya:
  - Buat Folder/ directory proyek: missal: iris_app
  - Install library yang dibutuhkan:

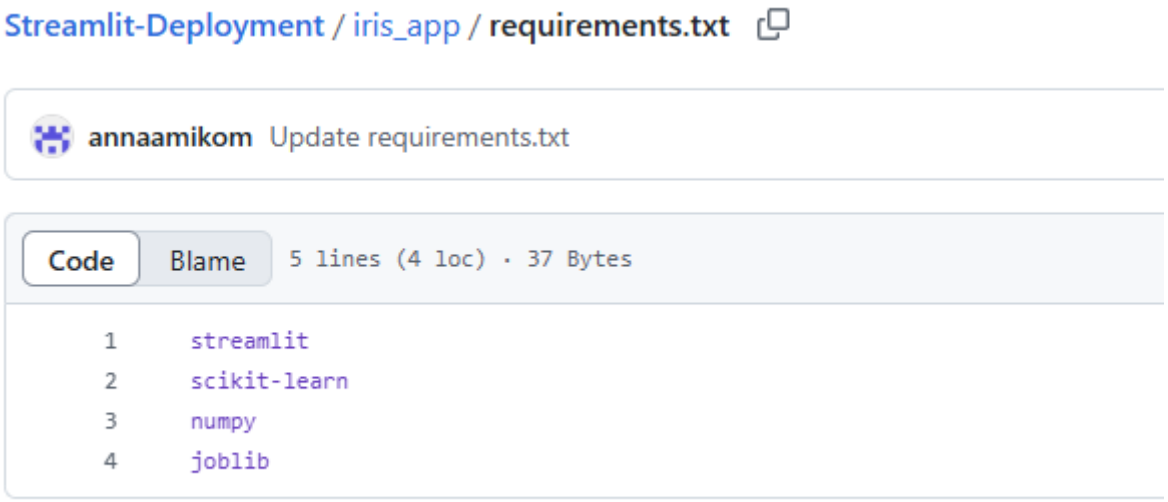
```
pip install streamlit scikit-learn joblib numpy
```



- 2. Training dan Simpan Model
  - File Note book: model-iris.ipynb
  - Pakai model yang kemaren→ model_numpy.pkl
- 3. Buat Aplikasi streamlit
  - Buat sebuah file dengan nama app.py
  - Struktur folder:

```
iris_app/
 |— model/
        |— model_numpy.py
 |— model-iris.ipynb
 |— app.py
 |— requirements.txt
```

Isi requirements.txt



Semua instalasi yang dibutuhkan

app.py

```python
# app.py
import streamlit as st
import numpy as np
import joblib

# Load model
model = joblib.load("model/model_numpy.pkl")
class_names = ["Setosa", "Versicolor", "Virginica"]

# Halaman utama
st.set_page_config(page_title=" Prediksi Bunga Iris", layout="wide")
st.markdown("<h1 style='text-align: center; color: #6C63FF;'> Prediksi Bunga Iris dengan Machine Learning</h1>", unsafe_allow_html=True)
st.write("---")

# Sidebar
st.sidebar.header("Input Fitur")
sepal_length = st.sidebar.slider("Panjang Sepal (cm)", 0.0, 10.0, 5.1)
sepal_width = st.sidebar.slider("Lebar Sepal (cm)", 0.0, 10.0, 3.5)
petal_length = st.sidebar.slider("Panjang Petal (cm)", 0.0, 10.0, 1.4)
petal_width = st.sidebar.slider("Lebar Petal (cm)", 0.0, 10.0, 0.2)

# Layout 2 kolom
col1, col2 = st.columns(2)

with col1:
    st.image("https://upload.wikimedia.org/wikipedia/commons/4/41/Iris_versicolor_3.jpg", caption="Contoh Bunga Iris",  use_container_width=True)

with col2:
    st.subheader("Hasil Prediksi")
    input_data = np.array([[sepal_length, sepal_width, petal_length, petal_width]])
    prediction = model.predict(input_data)[0]
    st.success(f"Hasil prediksi model: **{class_names[prediction]}** ")

    st.markdown("---")
    st.markdown("**Fitur yang dimasukkan:**")
    st.json({
        "Sepal Length": sepal_length,
        "Sepal Width": sepal_width,
        "Petal Length": petal_length,
        "Petal Width": petal_width
    })

st.caption("Aplikasi ML dengan Streamlit & Scikit-learn ")

```

- Referensi pengaturan layout di streamlit: https://docs.streamlit.io/develop/api-reference

- 4. Jalankan Aplikasi secara local:

```
streamlit run app.py
```

localhost:8501

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Input Fitur

Panjang Sepal (cm)

2.92

0.00 10.00

Lebar Sepal (cm)

3.78

0.00 10.00

Panjang Petal (cm)

4.10

0.00 10.00

Lebar Petal (cm)

0.20

0.00 10.00

Prediksi Bunga Iris dengan Machine Learning

Contoh Bunga Iris

Hasil Prediksi

Hasil prediksi model: **Setosa**

Fitur yang dimasukkan:


```
{
  "Sepal Length" : 2.92
  "Sepal Width" : 3.78
  "Petal Length" : 4.1
  "Petal Width" : 0.2
}
```


Aplikasi ML dengan Streamlit & Scikit-learn

- 5. Deploy ke Cloud (Akses IP Publik Langsung)
  - Push project ke GitHub:
    - https://github.com/annaamikom/Streamlit-Deployment
  - Daftar dan login ke https://streamlit.io

share.streamlit.io

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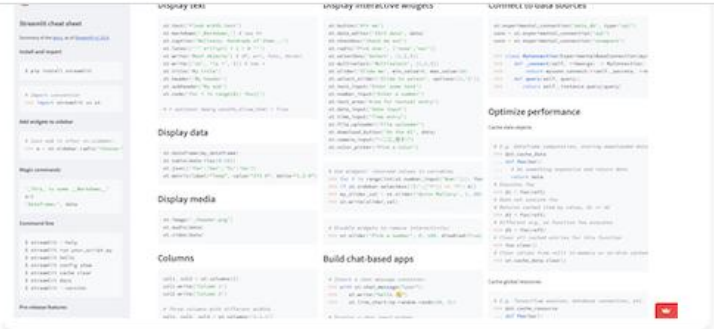

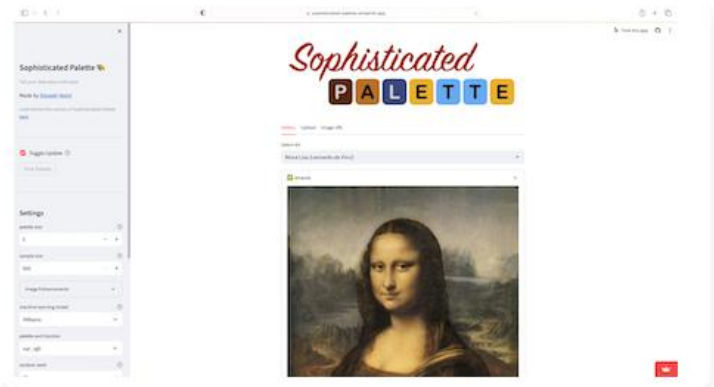

nt_id=project_01EZ8RPVCZQ40ZGBV6Y87N8V8V&redirect_uri=https%3A%2F%2Flogin.streamlit.io%2Fapi%2Fv1%2Flogin%2Fshare%2Fcallback&response_type=code&state=2uVPdTFAnjTmvKWYT...

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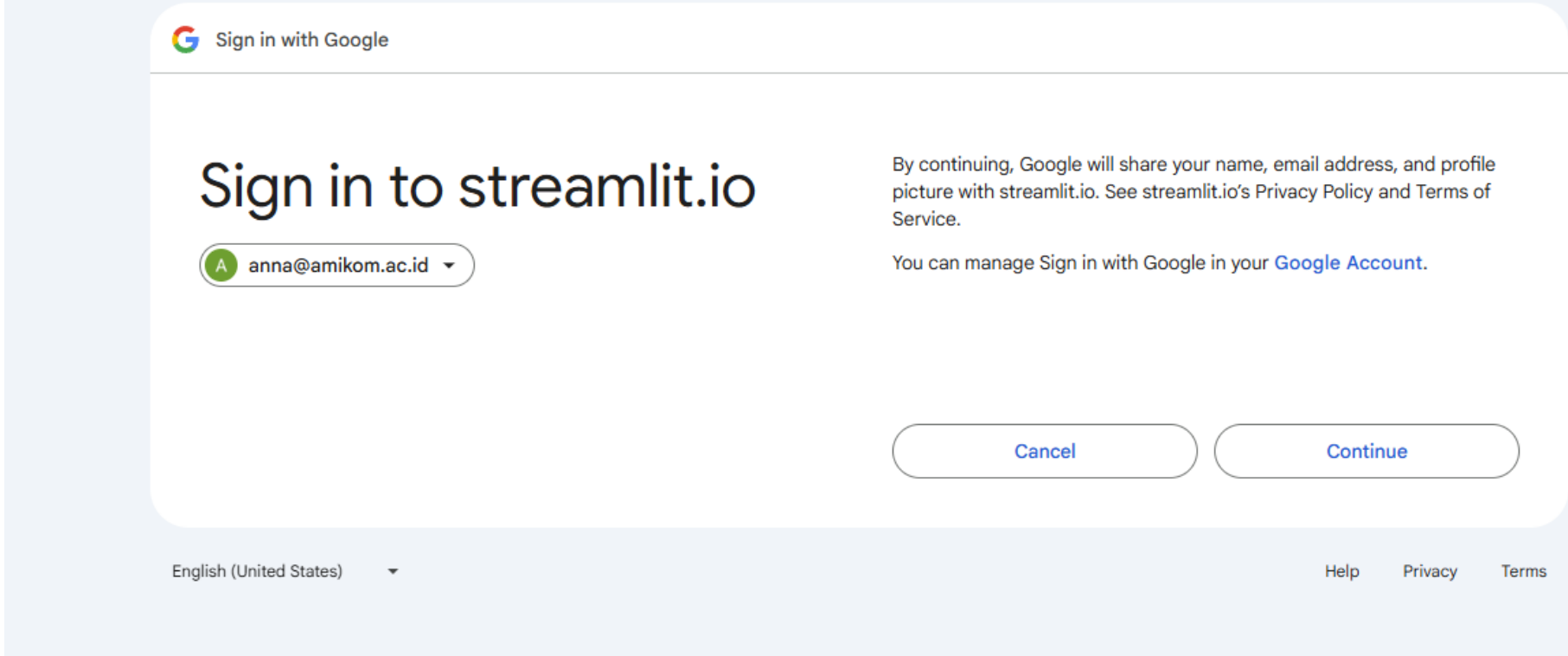
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anna@amikom.ac.id
By continuing, Google will share your name, email address, and profile picture with streamlit.io. See streamlit.io's Privacy Policy and Terms of Service.
You can manage Sign in with Google in your Google Account.
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Continue
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Privacy
Terms

share.streamlit.io/?aliId=eyJpIjoieEhQcSs4SWVTM202RGZhMiIsInQiOiJIUERmTDYzZ3FtYlRUcFwvTnhxNWtzdz09In0%253D

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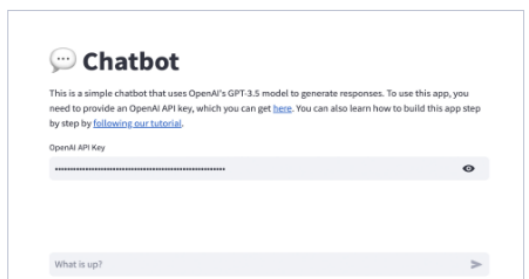
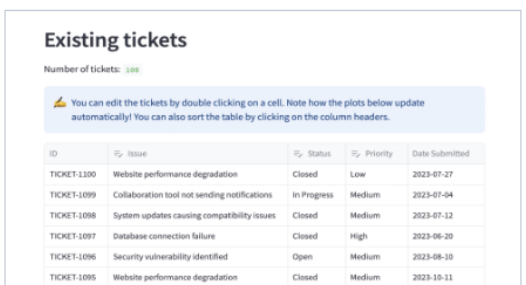
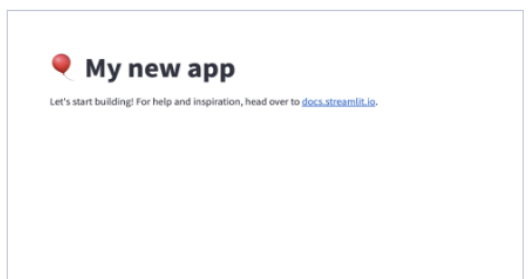
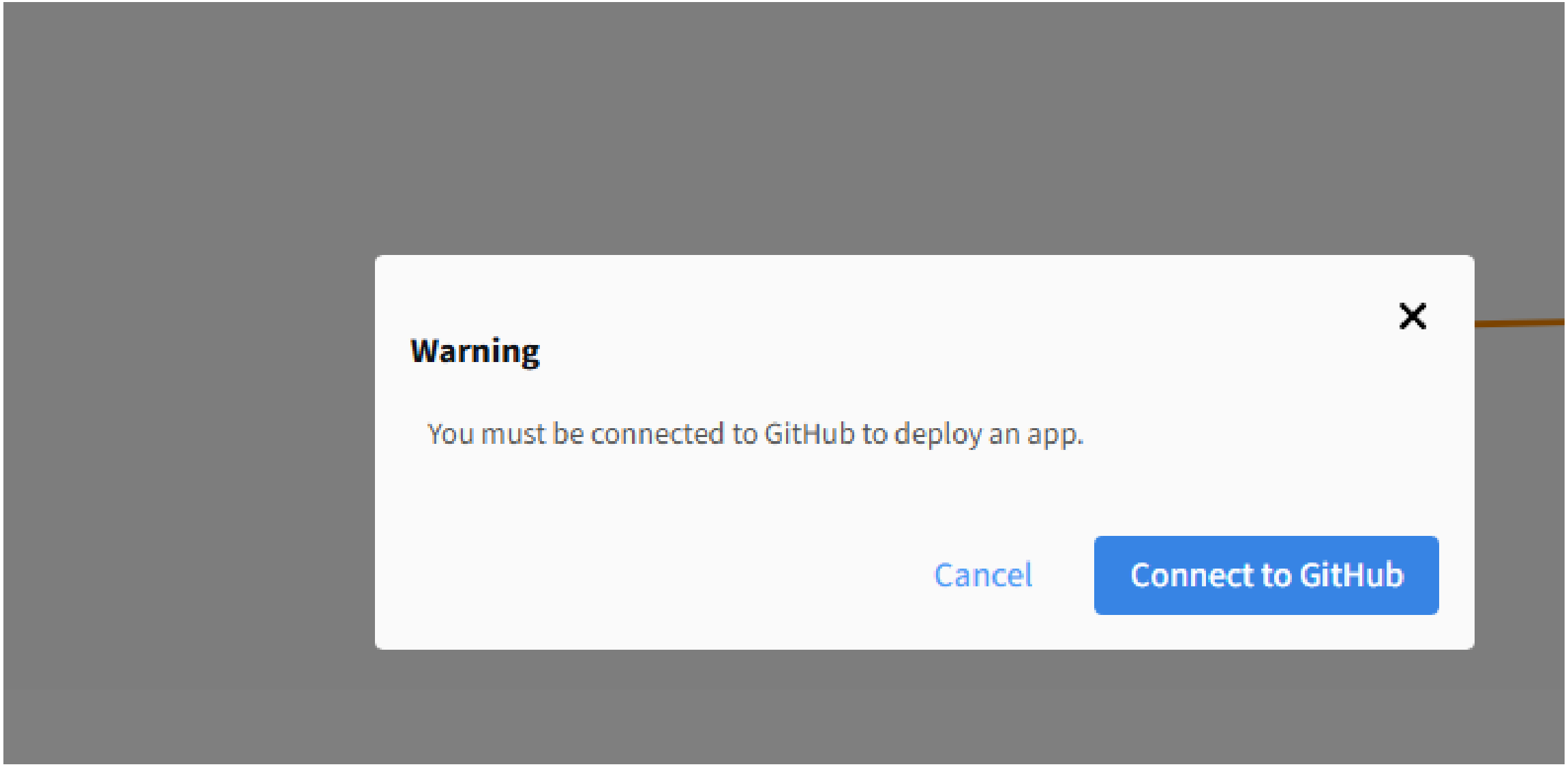
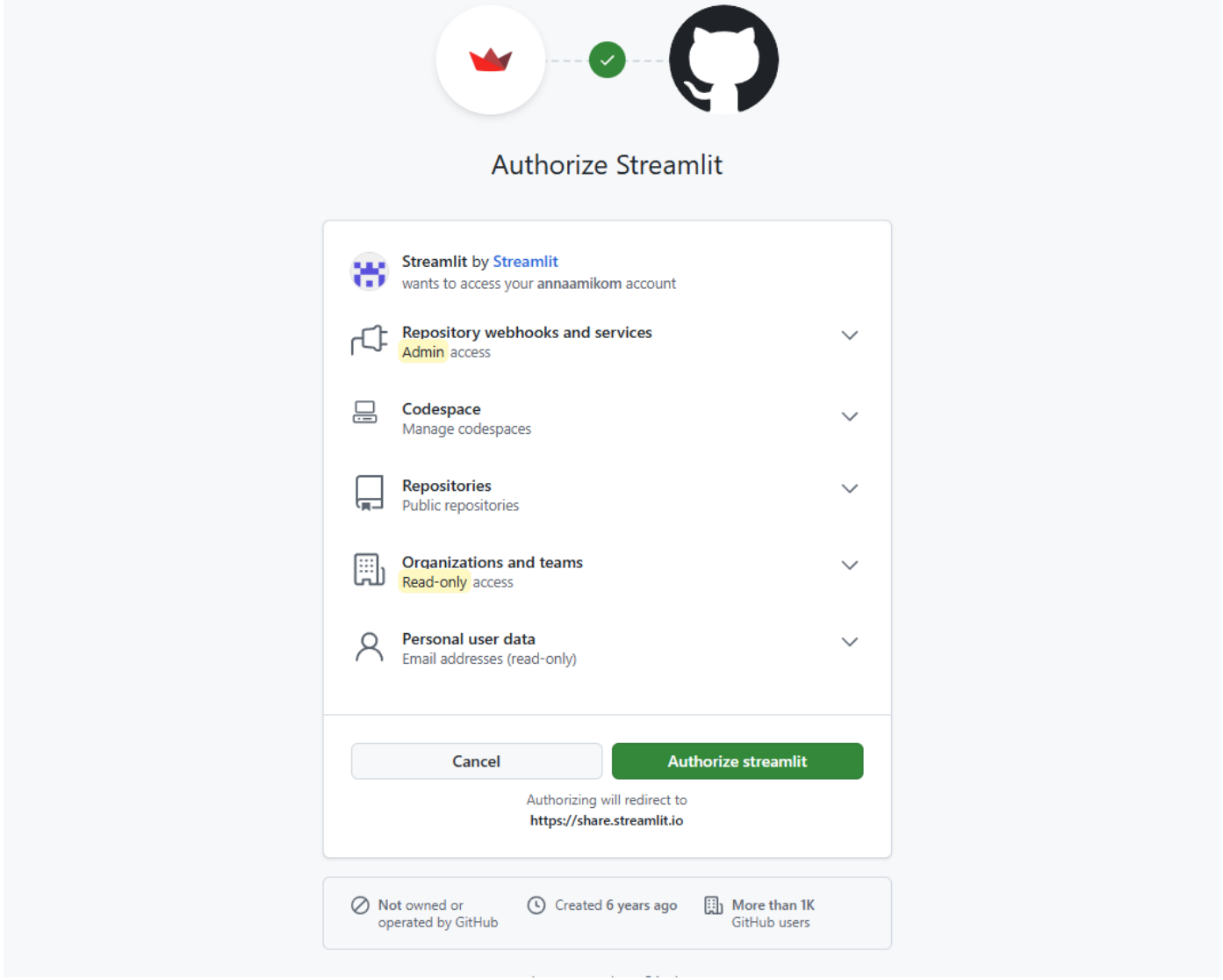







Warning
You must be connected to GitHub to deploy an app.
Cancel
Connect to GitHub


Authorize Streamlit
Streamlit by Streamlit
wants to access your annaamikom account
Repository webhooks and services
Admin access
Codespace
Manage codespaces
Repositories
Public repositories
Organizations and teams
Read-only access
Personal user data
Email addresses (read-only)
Cancel
Authorize streamlit
Authorizing will redirect to
https://share.streamlit.io
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Deploy an app

Repository Paste GitHub URL

annaamikom/Streamlit-Deployment

Branch

main

Main file path

iris_app/app.py

App URL (optional)

app-deployment-2ss2qzfhmuxlb3dsqogxhn .streamlit.app

Domain is available

Advanced settings

Deploy

- ubah path-nya jadi relatif penuh(di repositori githubnya)

Code | Blame | 61 lines (49 loc) · 1.88 KB

```python
# app.py
import streamlit as st
import numpy as np
import joblib
import os
# Load model

MODEL_PATH = os.path.join(os.path.dirname(__file__), "model", "model_numpy.pkl")
model = joblib.load(MODEL_PATH)
#model = joblib.load("model/model_numpy.pkl")
class_names = ["Setosa", "Versicolor", "Virginica"]

# Halaman utama
st.set_page_config(page_title=" Prediksi Bunga Iris", layout="wide")
st.markdown("<h1 style='text-align: center; color: #6C63FF;'> Prediksi Bunga Iris dengan Machine Learning</h1>", unsafe_allow_html=True)
st.write("---")

# Sidebar
```

- Simpan
- **Rebuild** atau **Rerun** pada streamlit
- https://app-deployment-2ss2qzfhmuxlb3dsqogxhn.streamlit.app/

app-deployment-2ss2qzfhmuxlb3dsqogxhn.streamlit.app

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Input Fitur

Panjang Sepal (cm)

5.1

Lebar Sepal (cm)

3.5

Panjang Petal (cm)

1.4

Lebar Petal (cm)

0.2

Prediksi Bunga Iris dengan Machine Learning

Contoh Bunga Iris

Hasil Prediksi

Hasil prediksi model: **Setosa**

Fitur yang dimasukkan:


```
{
  "Sepal Length" : "5.1"
  "Sepal Width" : "3.5"
  "Petal Length" : "1.4"
  "Petal Width" : "0.2"
}
```


Aplikasi ML dengan Streamlit & Scikit-learn

Manage app