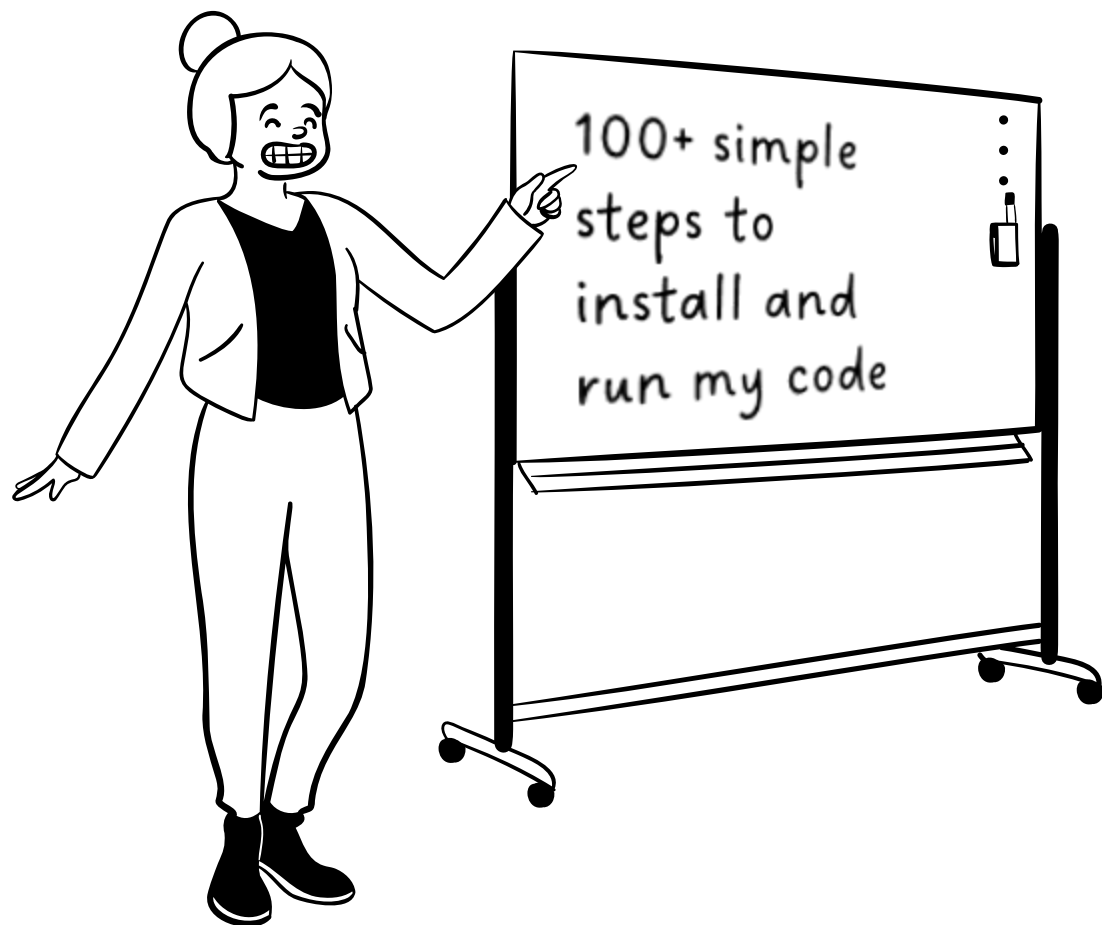




pyladies

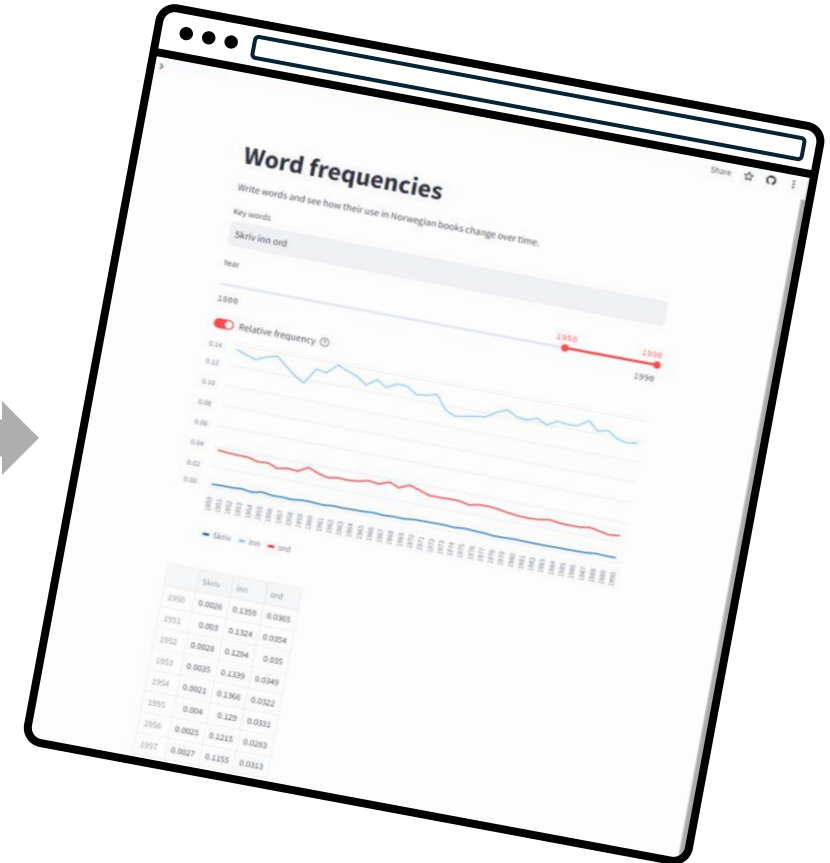
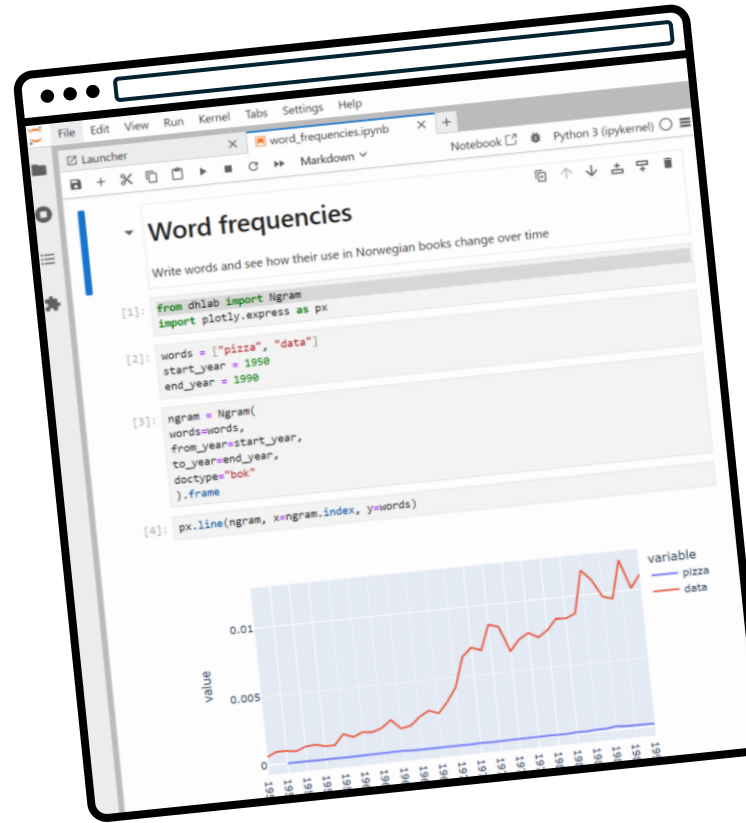
Sharing your analysis code can be challenging



Turning your Python scripts into interactive dashboards with Streamlit

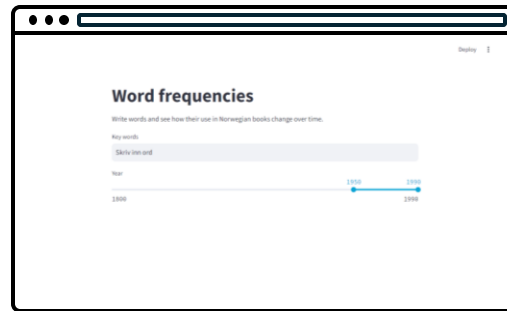
Marie Roald &
Ingerid Løyning Dale

June 12th, 2024

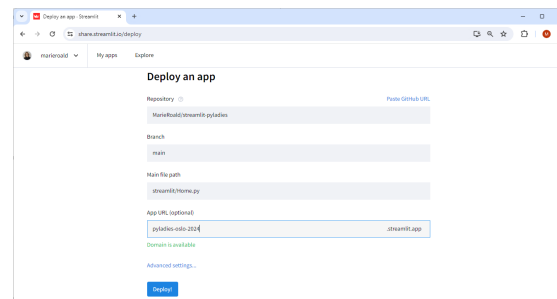




Introduction to streamlit



Example dashboard



Deployment, extra tips and examples

You can use pip to install Streamlit in your Python environment

```
$ pip install streamlit
```

```
Collecting streamlit
```

```
  Downloading streamlit-1.35.0-py2.py3-none-any.whl (8.6 MB)
```

```
      ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 8.6/8.6 MB 5.7 MB/s eta 0:00:00
```

```
[...]
```

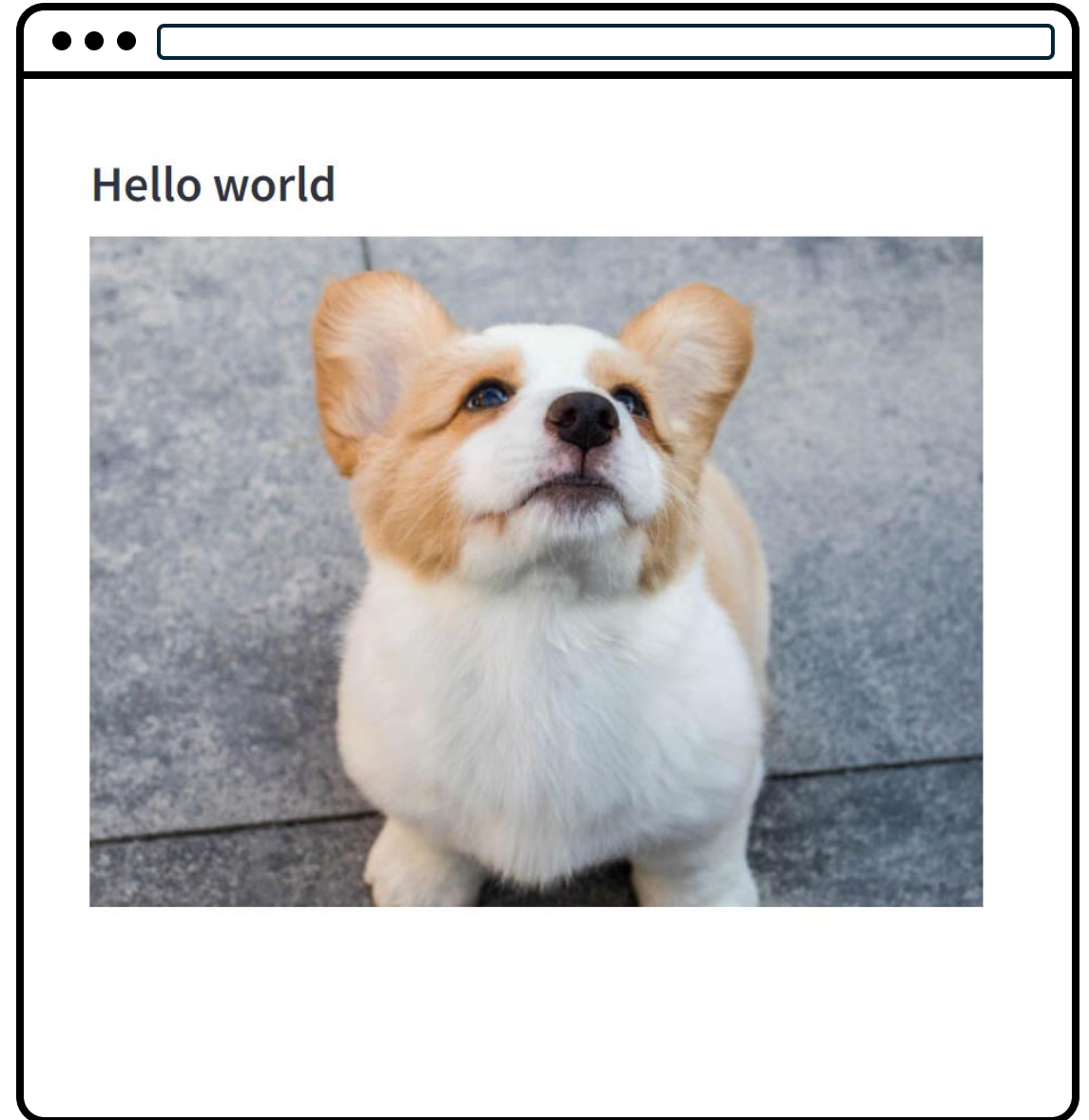
```
Installing collected packages: pytz, [...], streamlit
```

```
Successfully installed MarkupSafe-2.1.5 [...] streamlit-1.35.0 [...] watchdog-4.0.1
```

A Streamlit app looks similar to a Python script

```
import streamlit as st

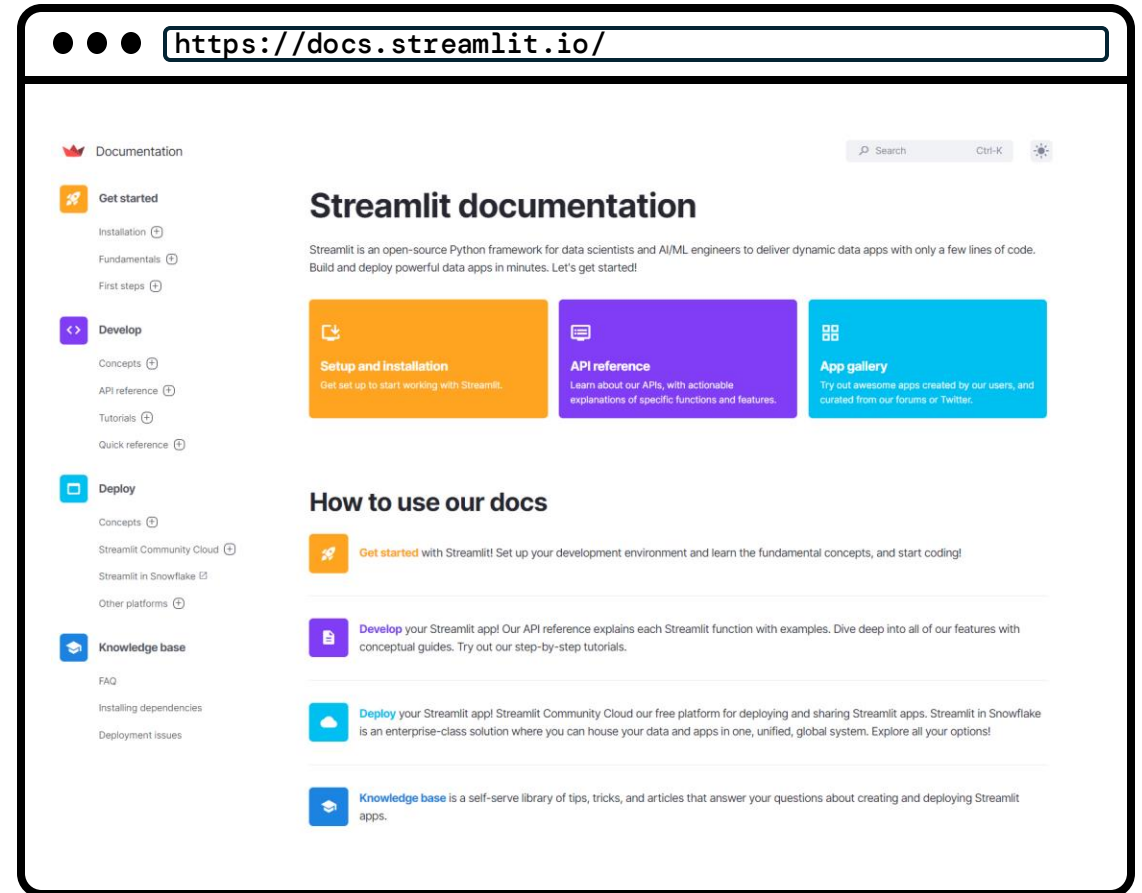
st.header("Hello world")
st.image("assets/dog.png")
```



Streamlit has extensive documentation

```
$ streamlit docs
```

<https://docs.streamlit.io/>



You run a Streamlit app similar to how you run a Python script

```
$ streamlit run hello.py
```

You can now view your Streamlit app in your browser.

Local URL: <http://localhost:8501>

Network URL: <http://10.0.0.179:8501>

Streamlit has native support for most common Python data libraries

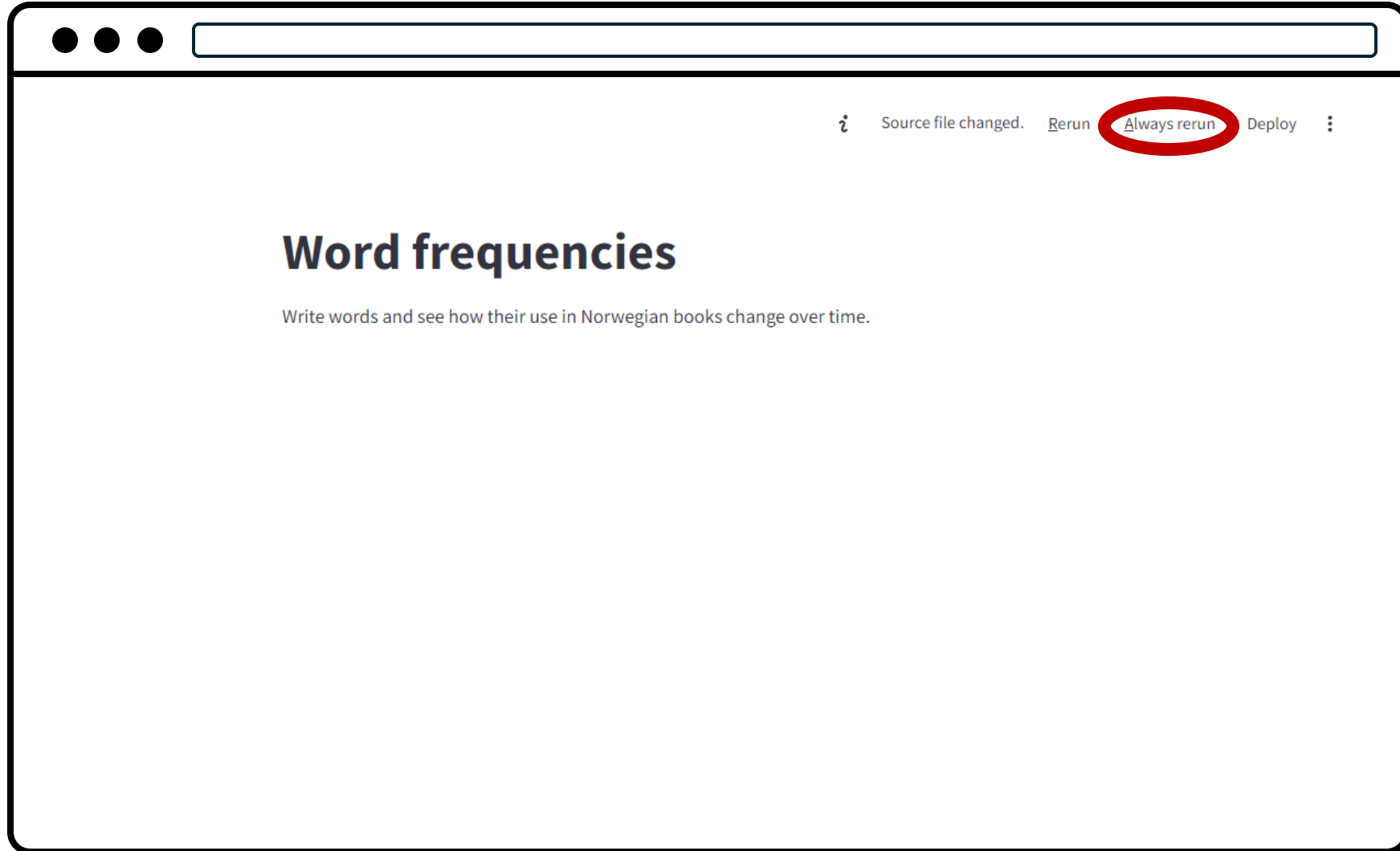
```
import streamlit as st
import pandas as pd
import plotly.express as px

df = pd.read_csv("data.csv")

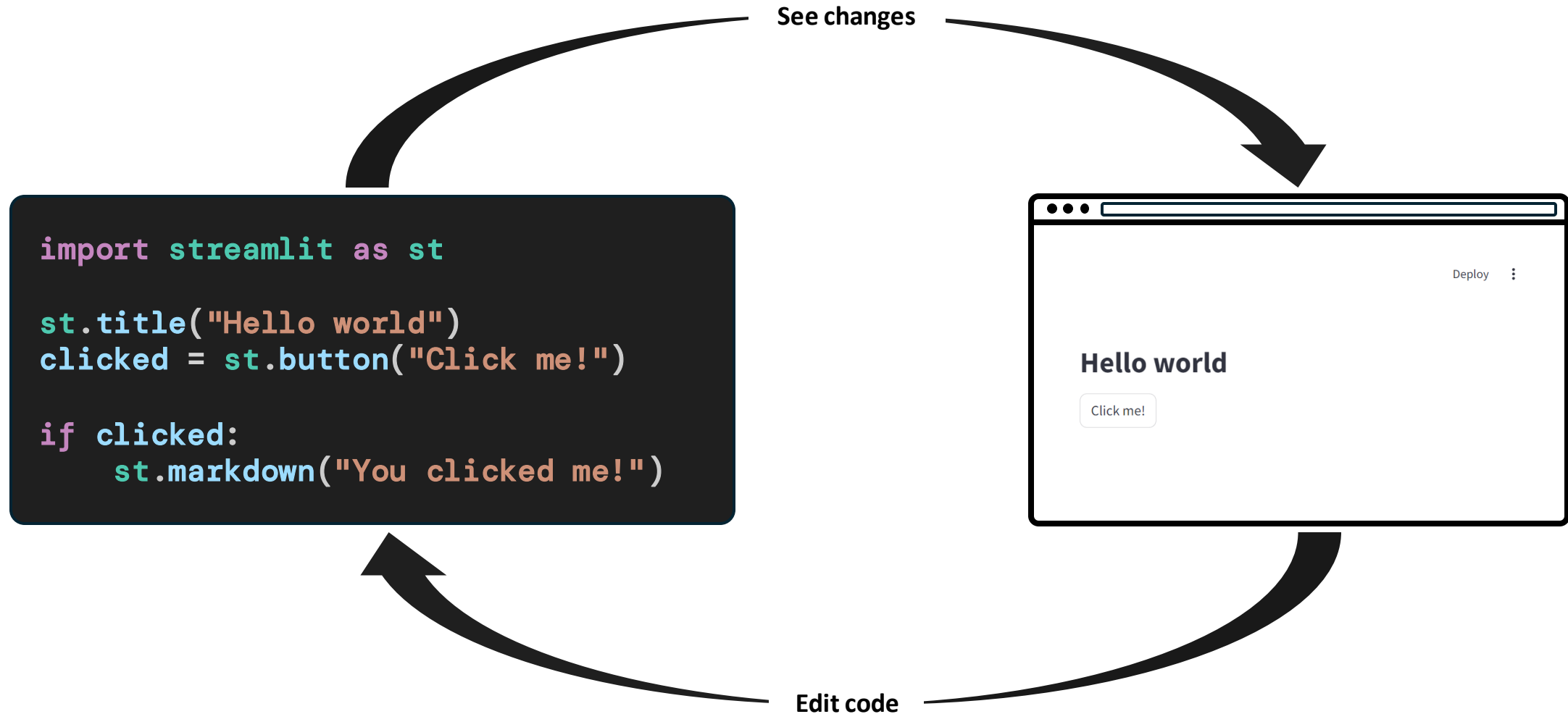
fig = px.line(df, x="x", y="y")
st.plotly_chart(fig)
```



Streamlit can rerun apps whenever you update your scripts, allowing for quick iteration



Streamlit can rerun apps whenever you update your scripts, allowing for quick iteration



Streamlit re-runs the entire script from top to bottom when you update something on the screen

```
import streamlit as st
import pandas as pd
import plotly.express as px

df = pd.read_csv("data.csv")

fig = px.line(df, x="x", y="y")
st.plotly_chart(fig)
```



Read like a normal script

Streamlit re-runs the entire script from top to bottom when you update something on the screen

```
import streamlit as st
import pandas as pd
import plotly.express as px

df = pd.read_csv("data.csv")

fig = px.line(df, x="x", y="y")
st.plotly_chart(fig)
```



There are experimental ways to rerun only parts of a script

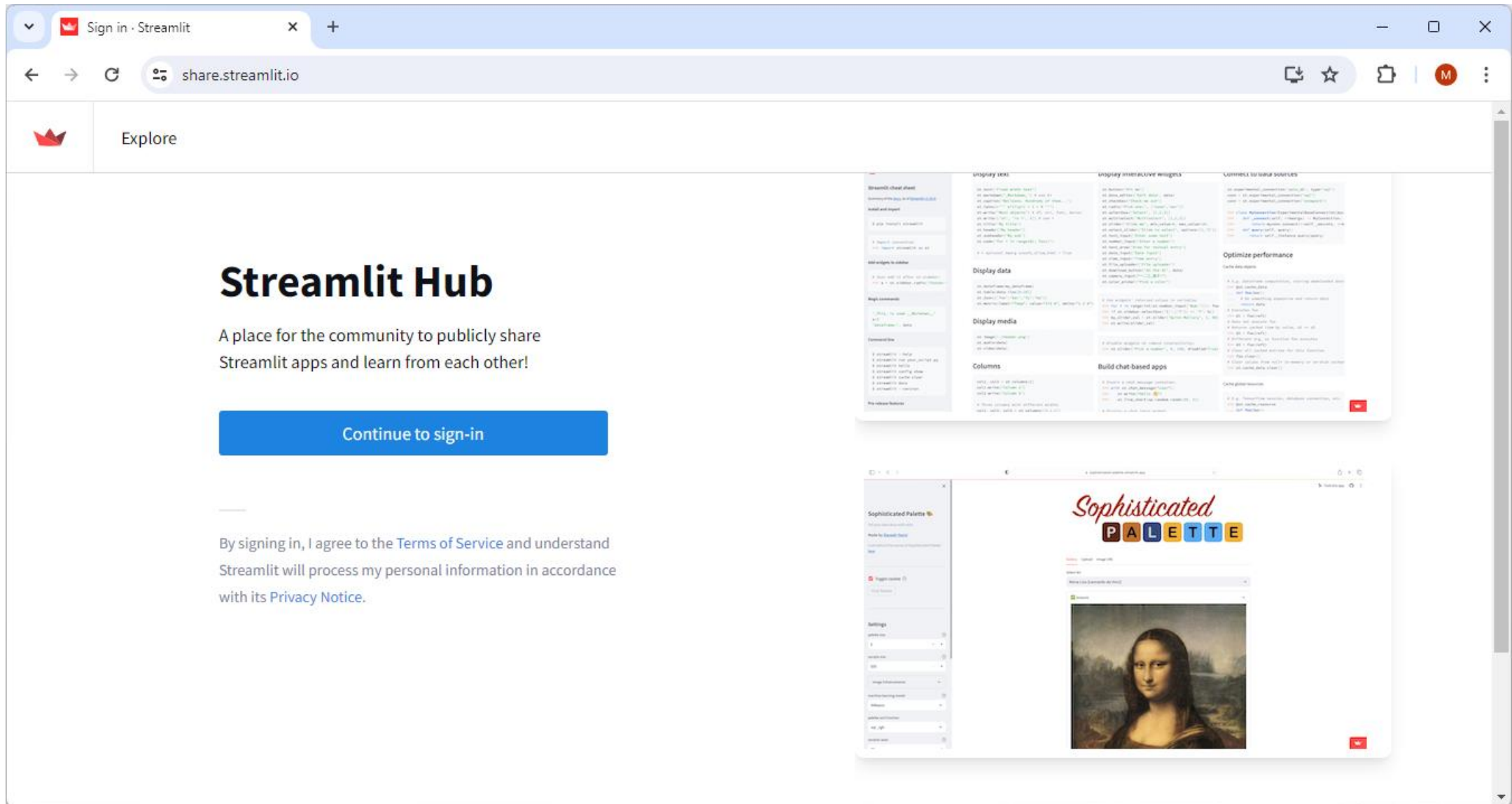


<https://docs.streamlit.io/develop/api-reference/execution-flow/st.fragment>

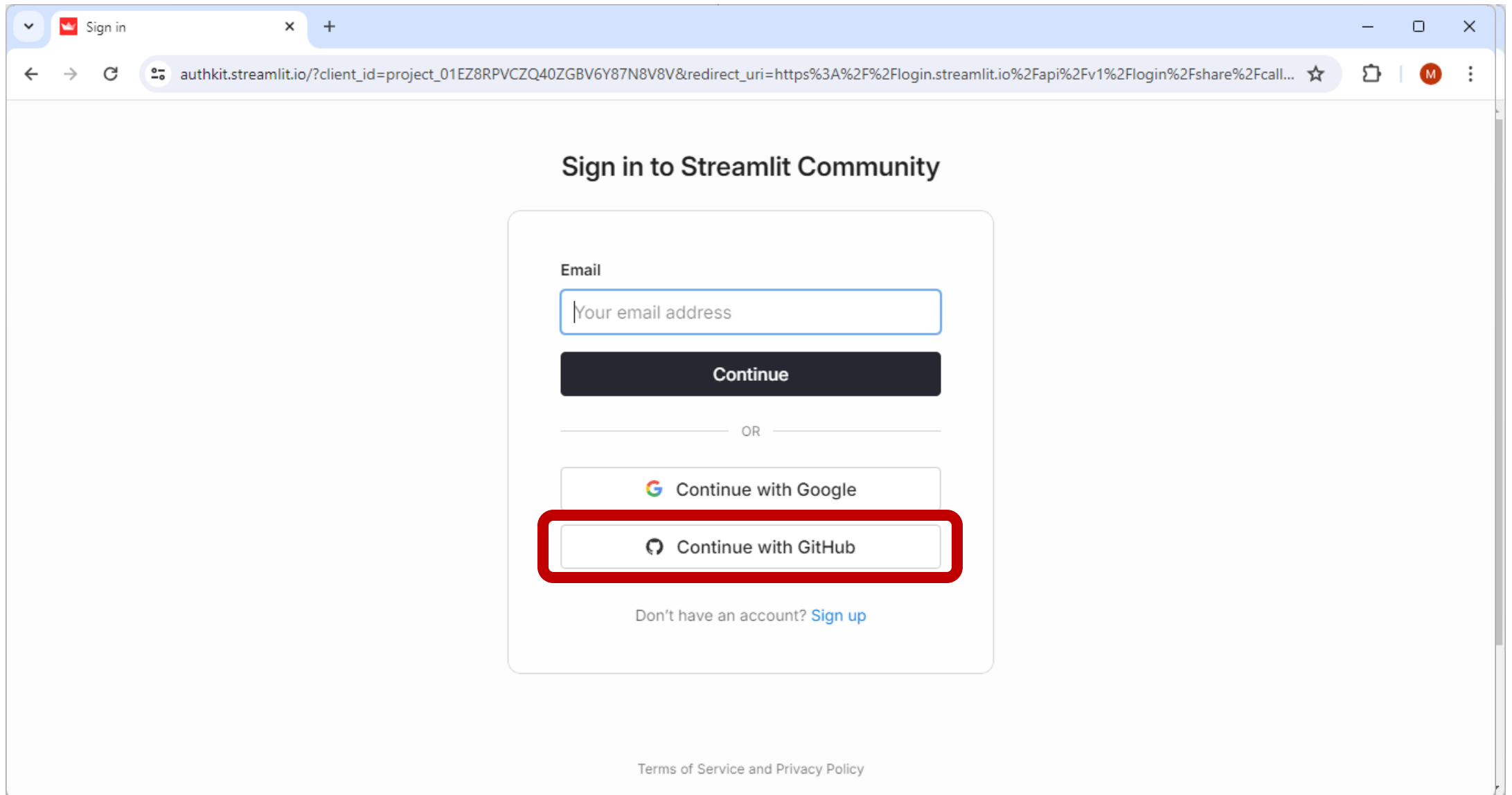
Time for a demo!

<http://pyladies-oslo-2024.streamlit.app/>

You can share your apps at <https://share.streamlit.io/>



You can share your apps at <https://share.streamlit.io/>





Sign in to Streamlit Community

Email

Continue

OR

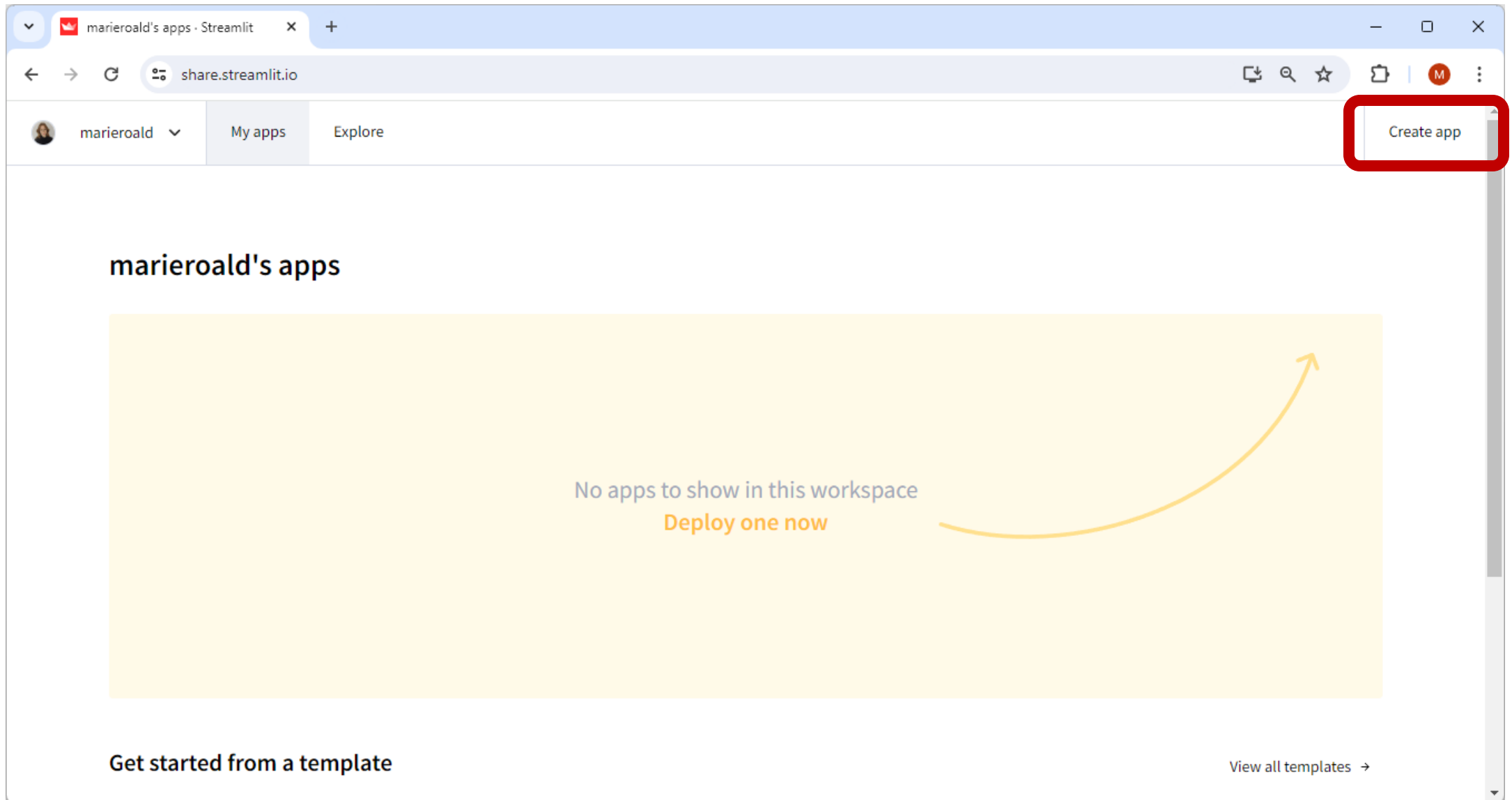
 Continue with Google

 Continue with GitHub

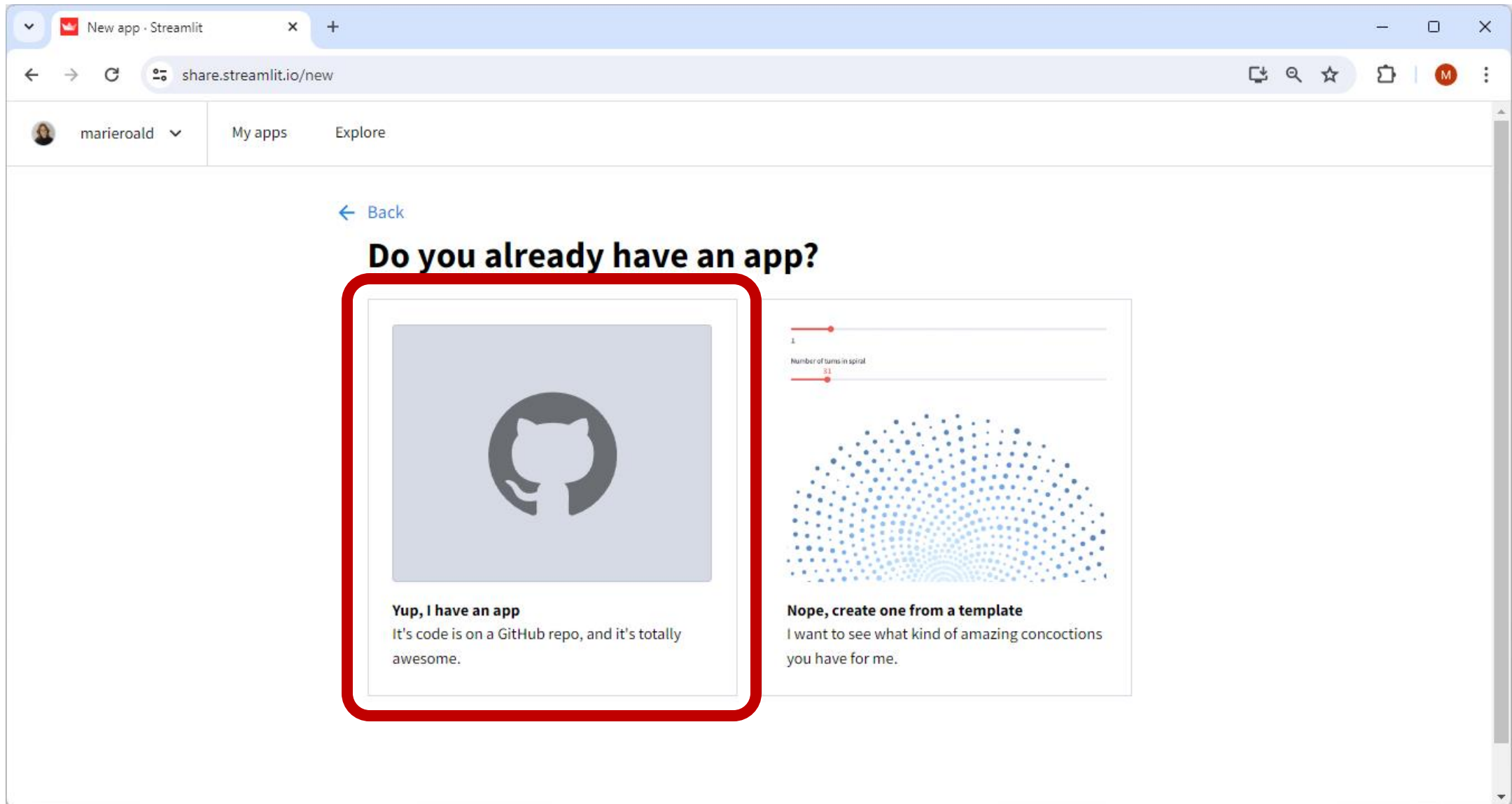
Don't have an account? [Sign up](#)

[Terms of Service and Privacy Policy](#)

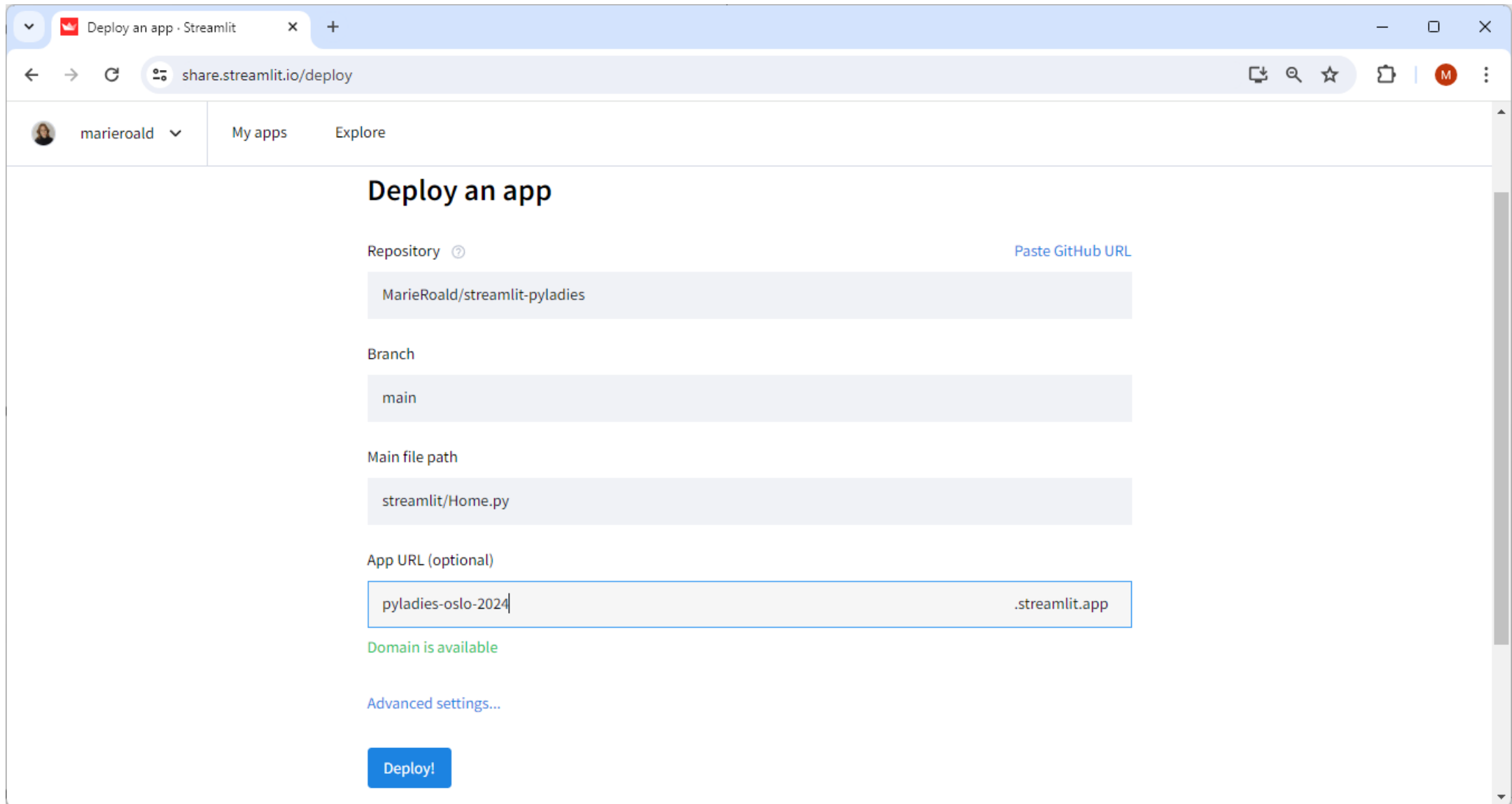
You can share your apps at <https://share.streamlit.io/>



You can share your apps at <https://share.streamlit.io/>



You can share your apps at <https://share.streamlit.io/>



The screenshot shows a web browser window with the title 'Deploy an app · Streamlit'. The address bar shows the URL 'share.streamlit.io/deploy'. The user profile 'marieroald' is visible in the top left. The main heading is 'Deploy an app'. Below it, there are four input fields: 'Repository' (containing 'MarieRoald/streamlit-pyladies'), 'Branch' (containing 'main'), 'Main file path' (containing 'streamlit/Home.py'), and 'App URL (optional)' (containing 'pyladies-oslo-2024'). A 'Paste GitHub URL' link is next to the repository field. A '.streamlit.app' suffix is shown next to the App URL field. Below the App URL field, a green message says 'Domain is available'. At the bottom, there is a blue 'Deploy!' button and a link for 'Advanced settings...'.

Deploy an app

Repository [?](#) [Paste GitHub URL](#)

MarieRoald/streamlit-pyladies

Branch

main

Main file path

streamlit/Home.py

App URL (optional)

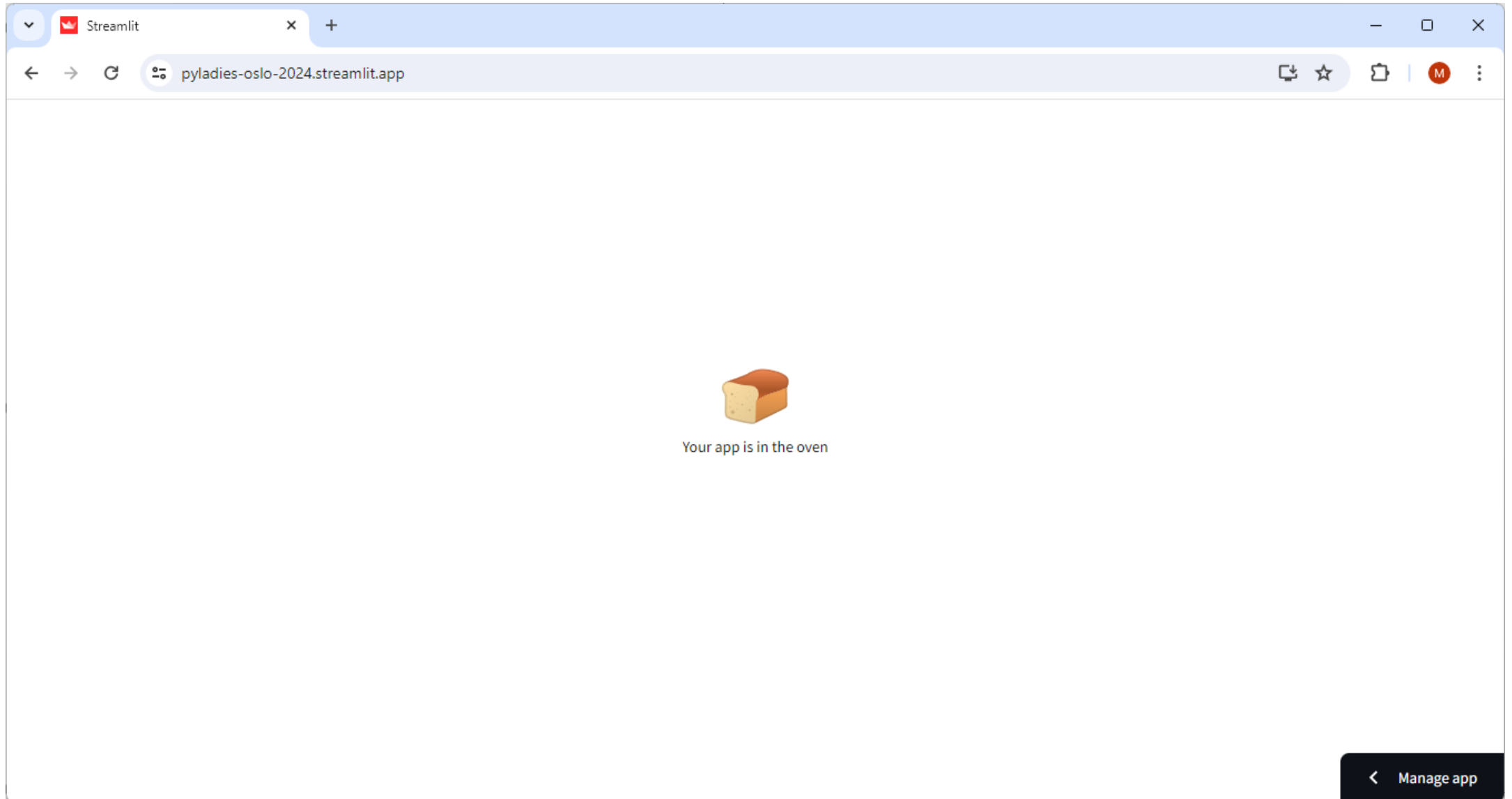
pyladies-oslo-2024 .streamlit.app

Domain is available

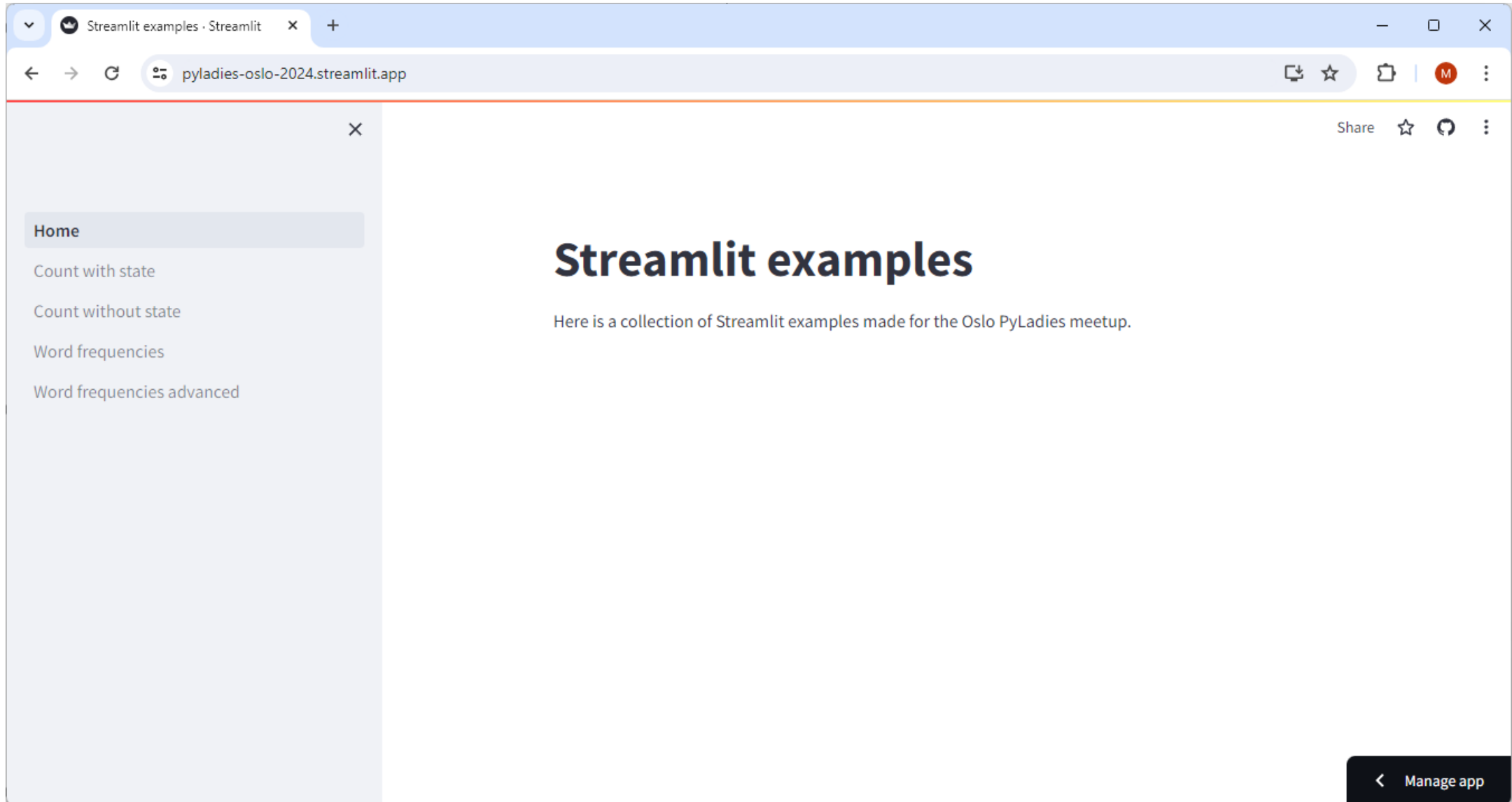
[Advanced settings...](#)

Deploy!

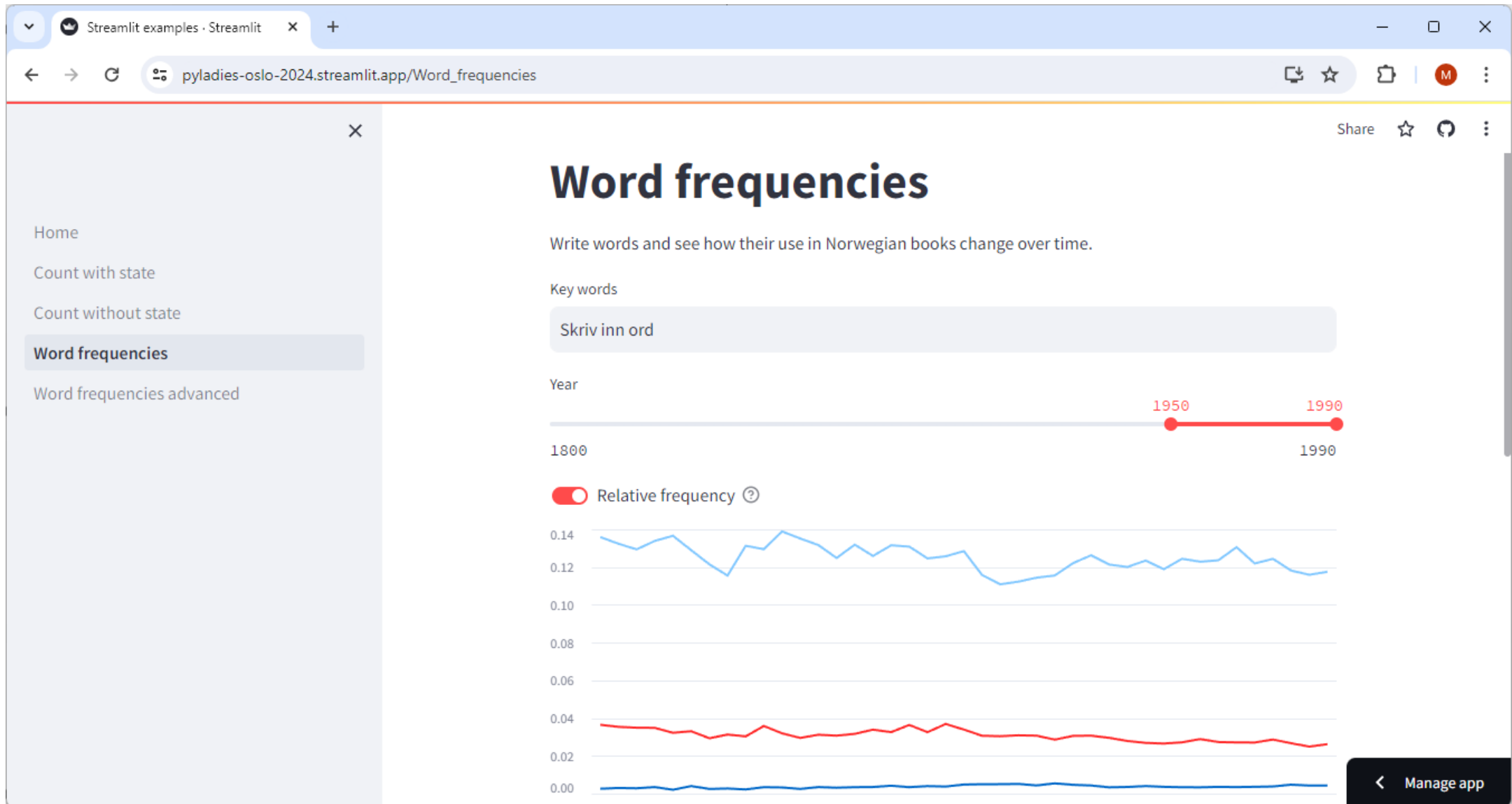
You can share your apps at <https://share.streamlit.io/>



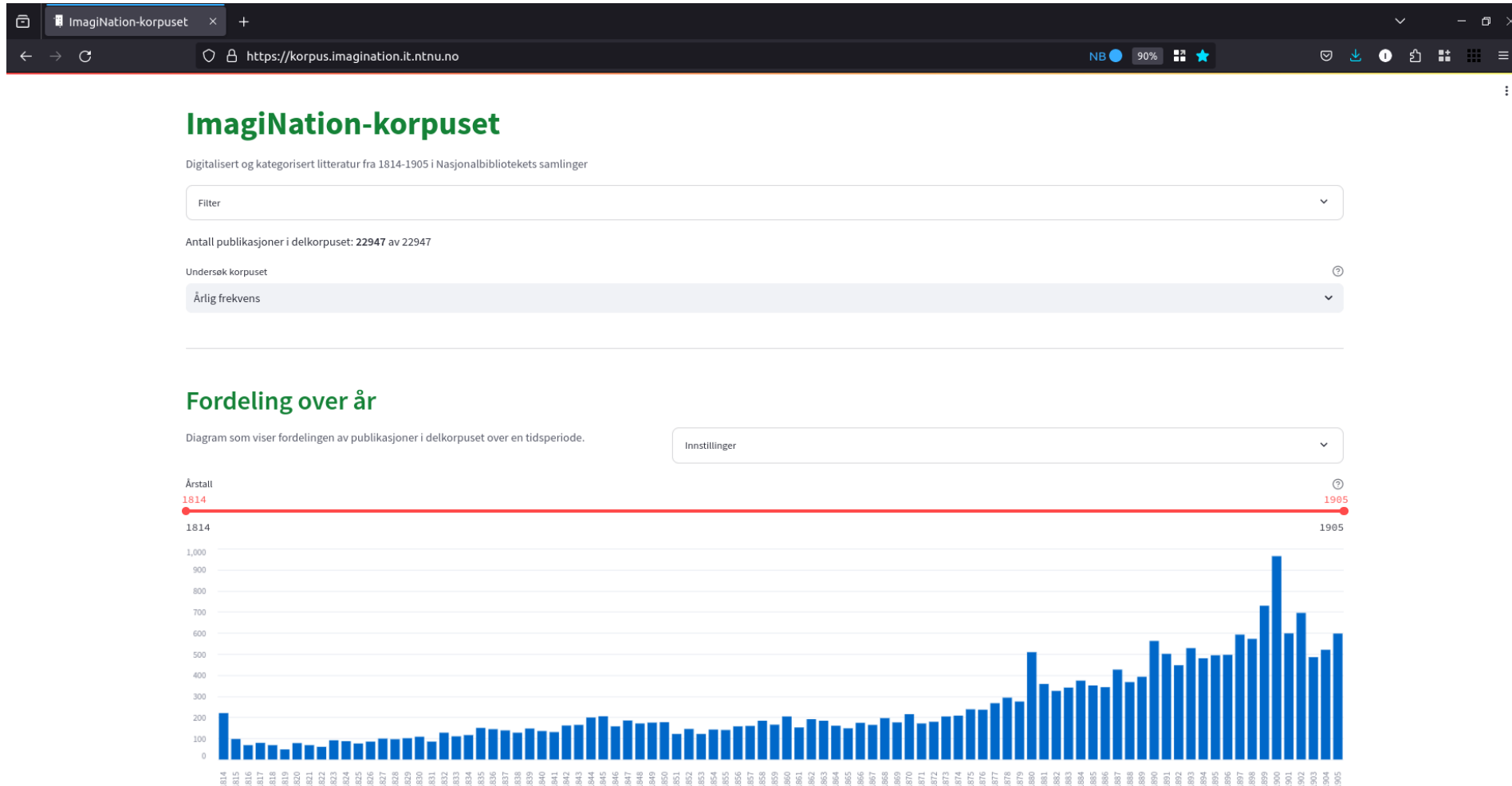
You can share your apps at <https://share.streamlit.io/>



You can share your apps at <https://share.streamlit.io/>

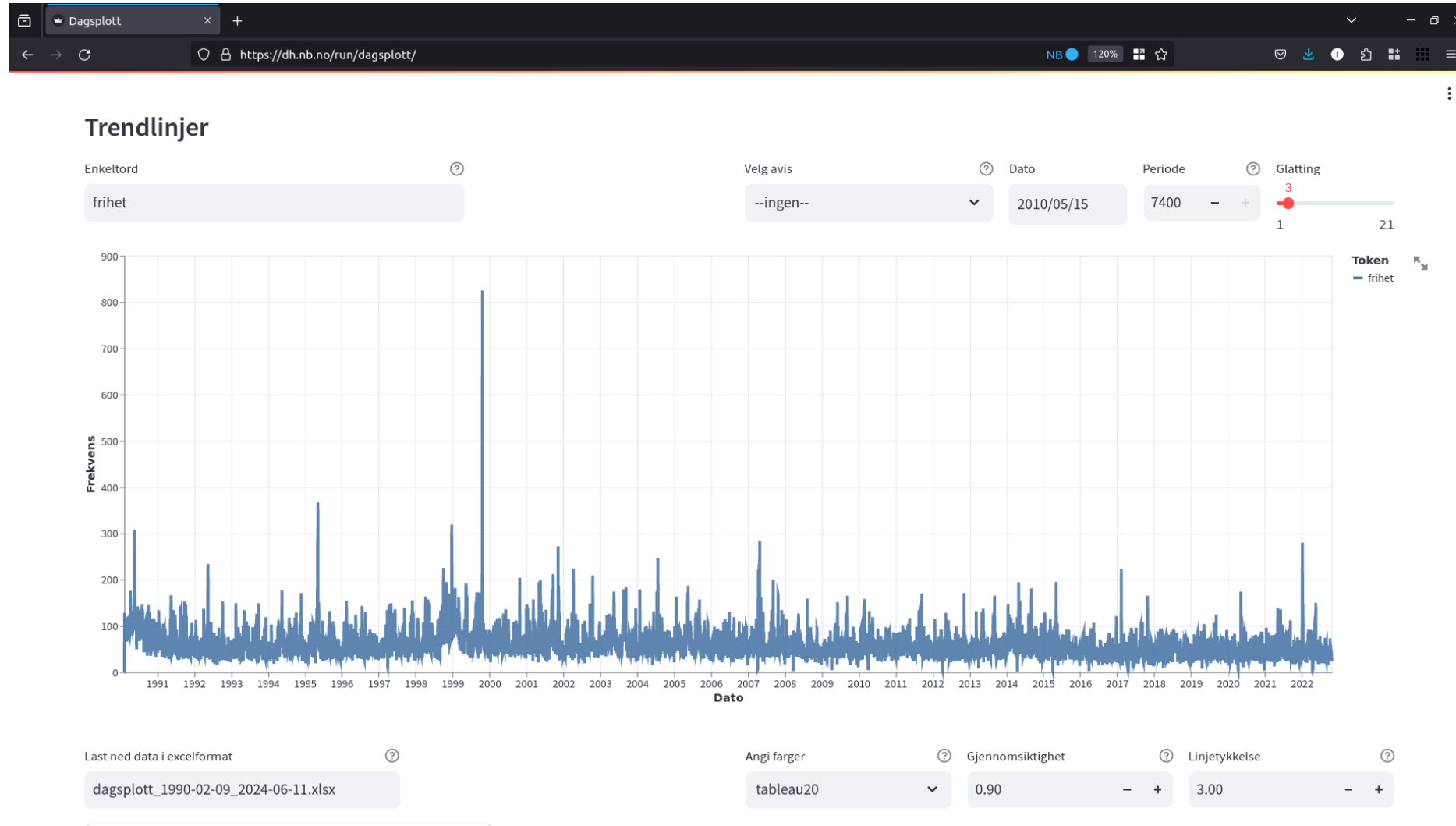


You can see more examples of streamlit functionalities in web apps from the DH lab




<https://korpus.imagination.it.ntnu.no/>

You can see more examples of streamlit functionalities in web apps from the DH lab



<https://dh.nb.no/run/dagsplott/>

You can see more examples of streamlit functionalities in web apps from the DH lab



Nasjonalbiblioteket

Last opp korpusdefinisjon som Excel-ark

Drag and drop file here

Limit 200MB per file • XLSX

Browse files

Korpus

Velg dokumenttype

Bøker

Som inneholder fulltekst (kan stå tomt)

Jakt AND fiske

Fra år

1990

Til år

2023

Metadata (kan stå tomt)

ddc:"641.5"

Antall dokumenter i sample

5000

Kollokasjoner

Appen gir deg kollokasjoner fra [DH-LAB](#) ved Nasjonalbiblioteket. Andre apper fra oss finner du [her](#).


Søk

pizza

Korpusstørrelse: 5000 dokumenter. Eksporter [korpusdefinisjon](#).

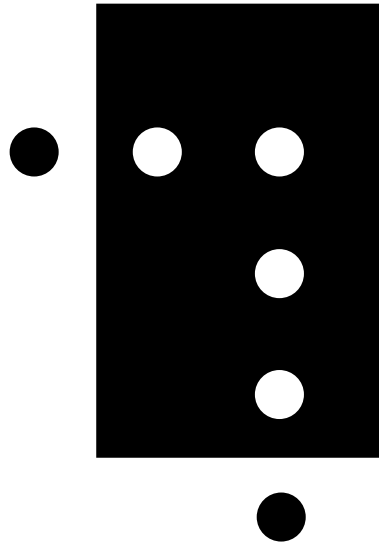
Eksporter [kollokasjonstabell](#).

Kollokat	Råfrekvens	Relevans
taco	25	14120.52
Pizza	18	2542.41
lasagne	7	2212.43
mozzarella	7	2146.33
Rosita	6	1385.06
hamburgere	6	940.15
hamburger	6	861.35
innbakt	7	852.11
pizzaen	6	828.35
pizza	20	720.71
pasta	16	565.18
pannekaker	7	432.88
hjemmelaget	7	407.82
cola	7	349.41



<https://dh.nb.no/run/kollokasjon/>

**You can see more examples of streamlit functionalities
in web apps from the DH lab**



<https://www.nb.no/dh-lab/apper/>

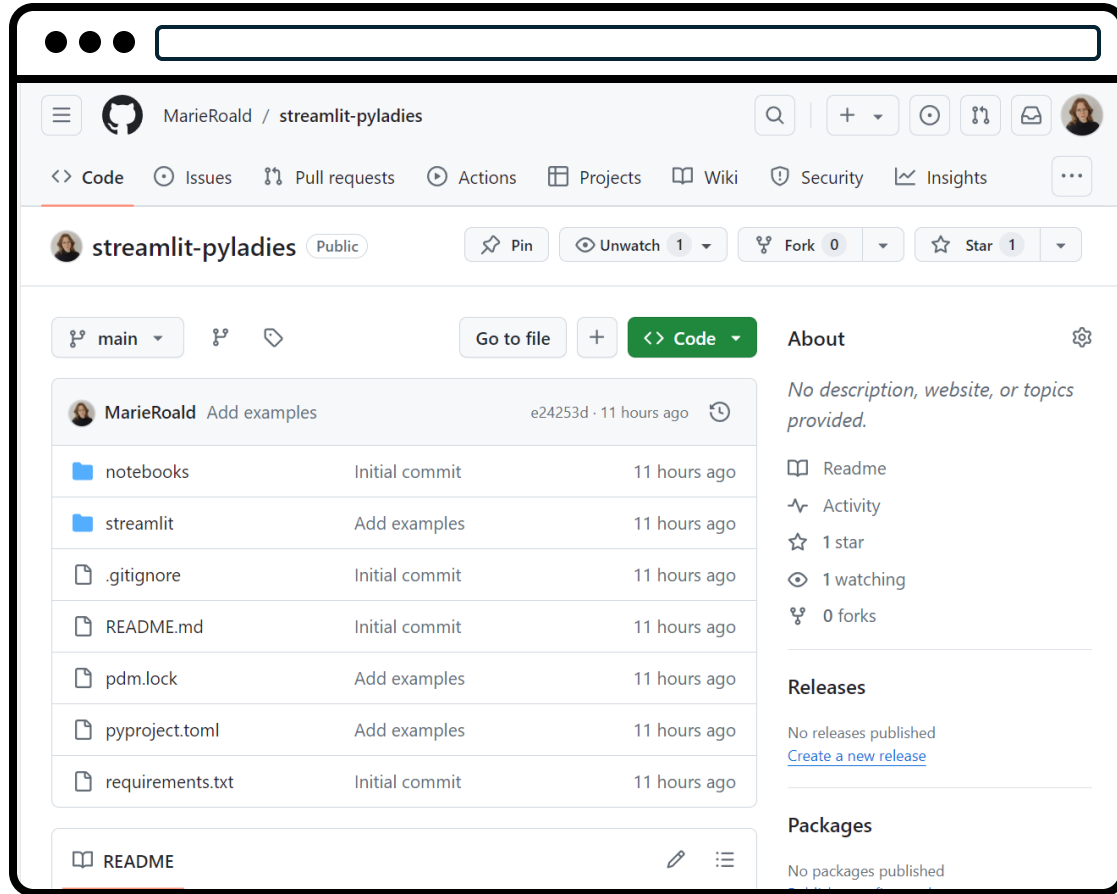
Main takeaways

- Streamlit lets you craft apps similar to how you would write a Python script
- Streamlit apps are stateless by default: user input invokes a complete re-run of the app
- <https://streamlit.app/> lets you deploy apps from a GitHub repository

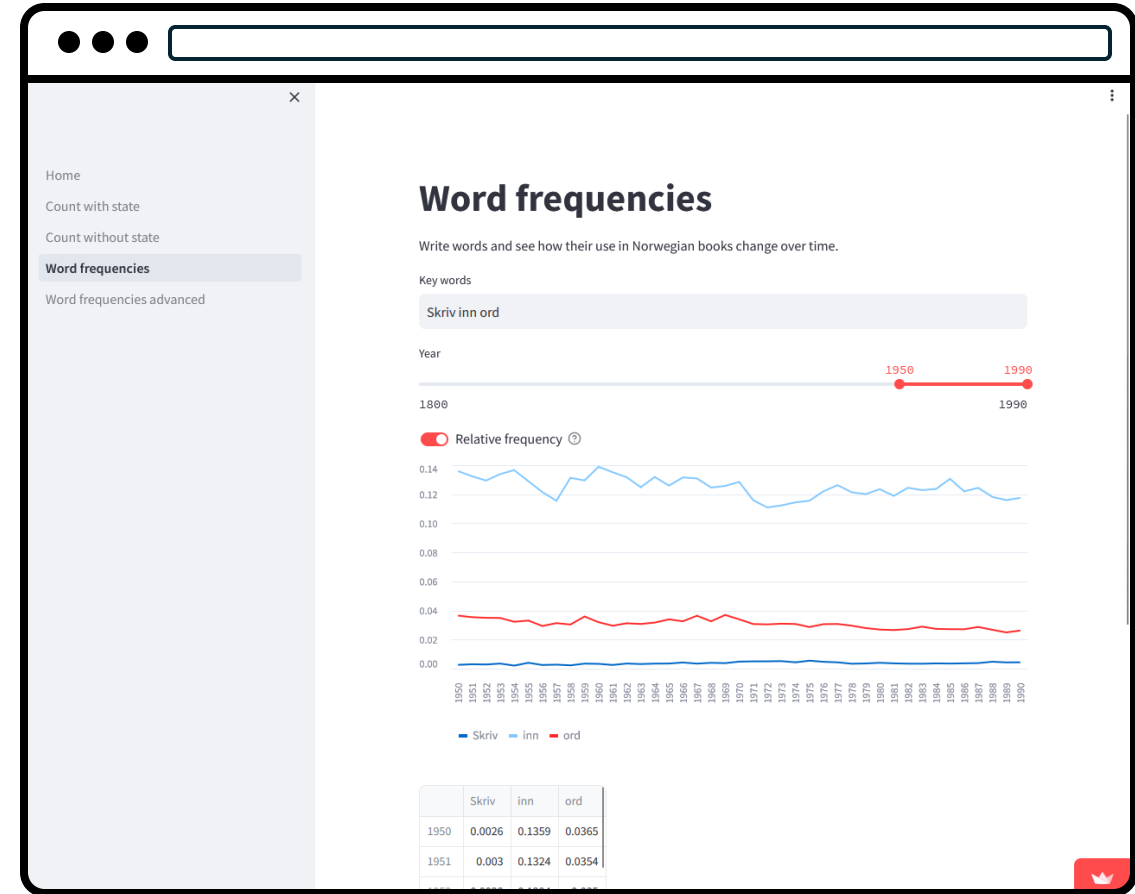
There are many great resources for learning Streamlit available online

- The documentation: <https://docs.streamlit.io/>
- The Streamlit app gallery: <https://streamlit.io/gallery>
- Streamlit tutorial at PyCon US 2023: https://youtu.be/cw44529_OU8
- Streamlit cheat sheet: <https://cheat-sheet.streamlit.app>

The code for this tutorial is also available on GitHub



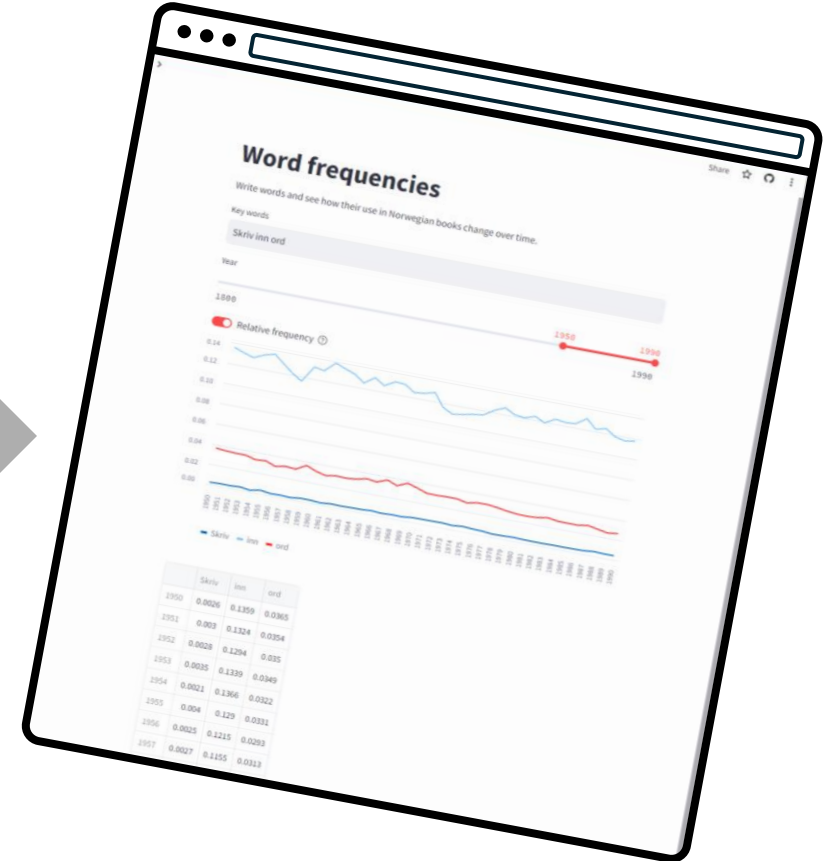
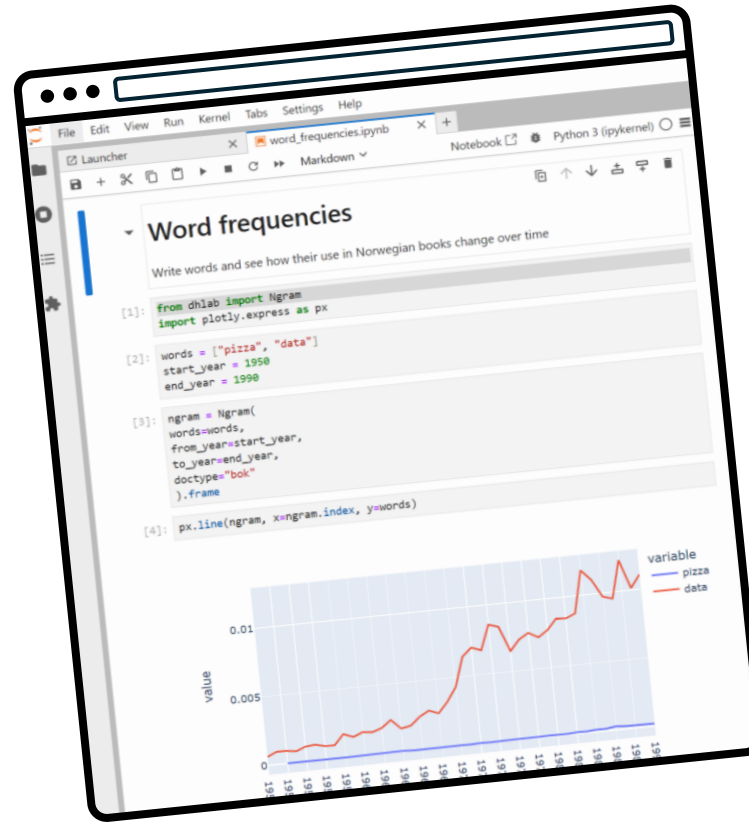
<https://github.com/MarieRoald/streamlit-pyladies>



<http://pyladies-oslo-2024.streamlit.app/>

In summary, Streamlit makes it easy to turn your Python scripts into interactive web applications

Thank
you!



And thanks to the PSF for sponsoring!