

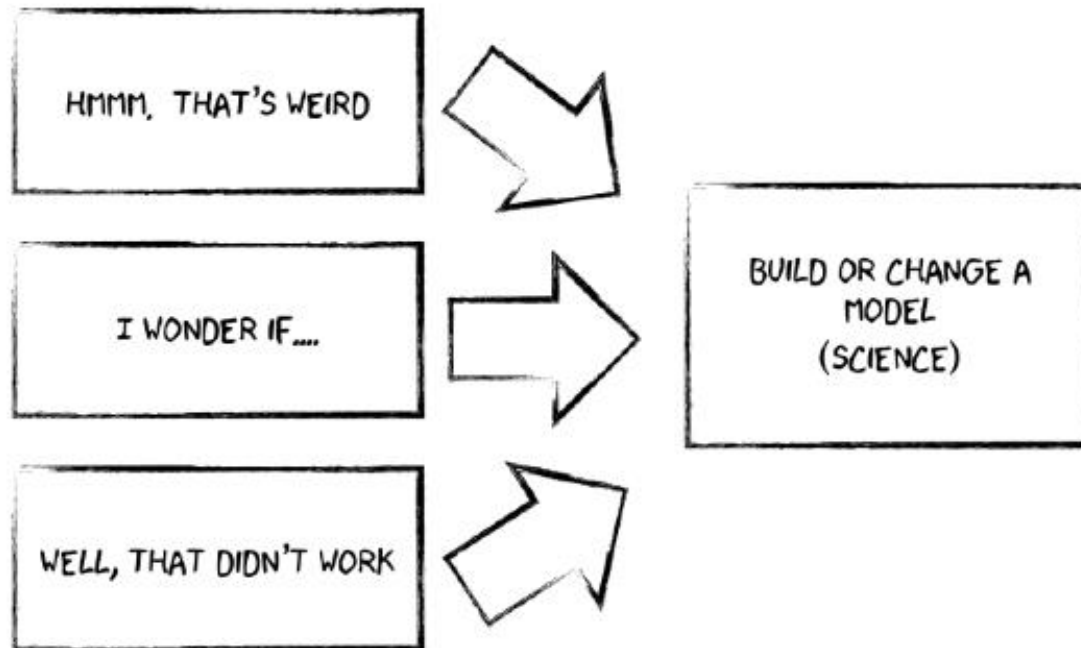
Python Library



- Python과 모듈
- Streamlit 패키지
- Flask 패키지
- replit(도커 환경 개발 툴)

빅데이터분석을 잘 하려면

데이터분석의 핵심역량은 업무와 데이터에 대한 이해와 사고력이며 Python은 Hacking skill, Technique이며 프로그래밍을 지원하는 다양한 Tool이 있다.



 OpenAI

 python™



 YouTube

<https://www.wired.com/2013/04/whats-wrong-with-the-scientific-method/>

Libraries in Python



SQLAlchemy

[home](#) [features](#) [news](#) [documentation](#) [community](#) [download](#)

The Python SQL Toolkit and **Object Relational Mapper**

SQLAlchemy is the Python SQL toolkit and Object Relational Mapper that gives application developers the full power and flexibility of SQL.

It provides a full suite of well known enterprise-level persistence patterns, designed for efficient and high-performing database access, adapted into a simple and Pythonic domain language.

Libraries in Python

BeautifulSoup

Se Selenium



Requests



SQL



python™

Google Colaboratory



Libraries in Python



Google Colaboratory



Libraries in Python



Flask

django



Streamlit

 FastAPI

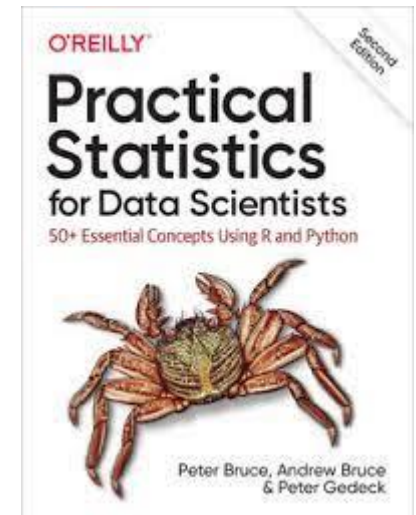
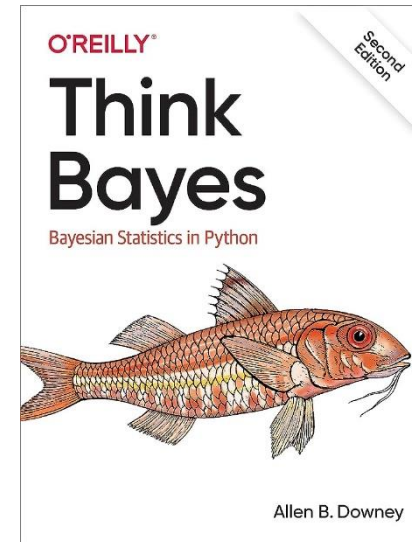
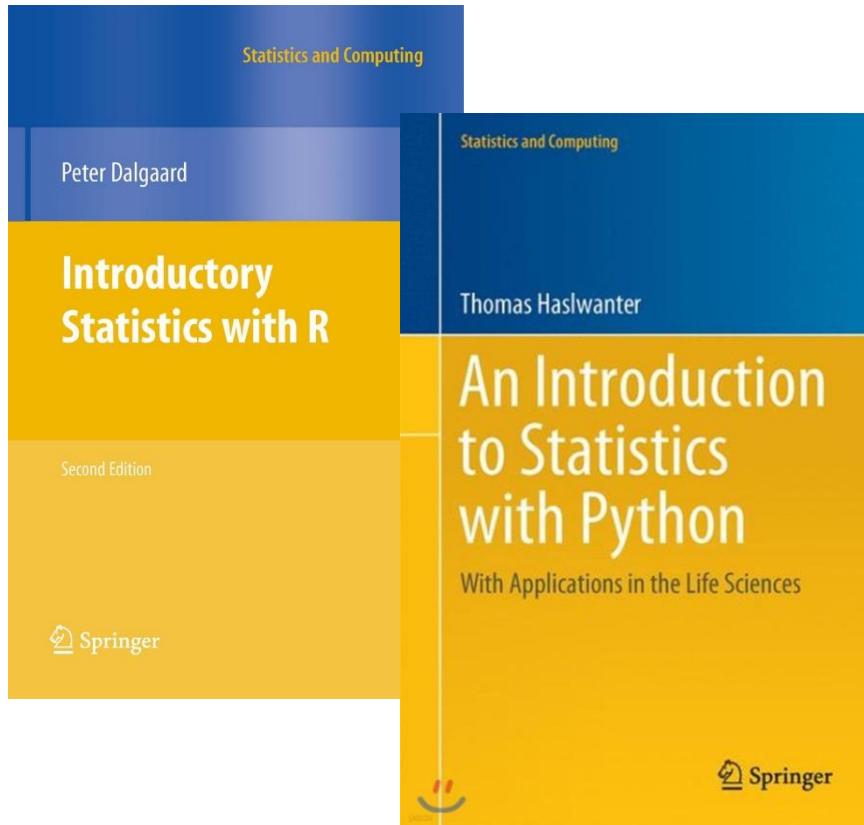


Google Colaboratory

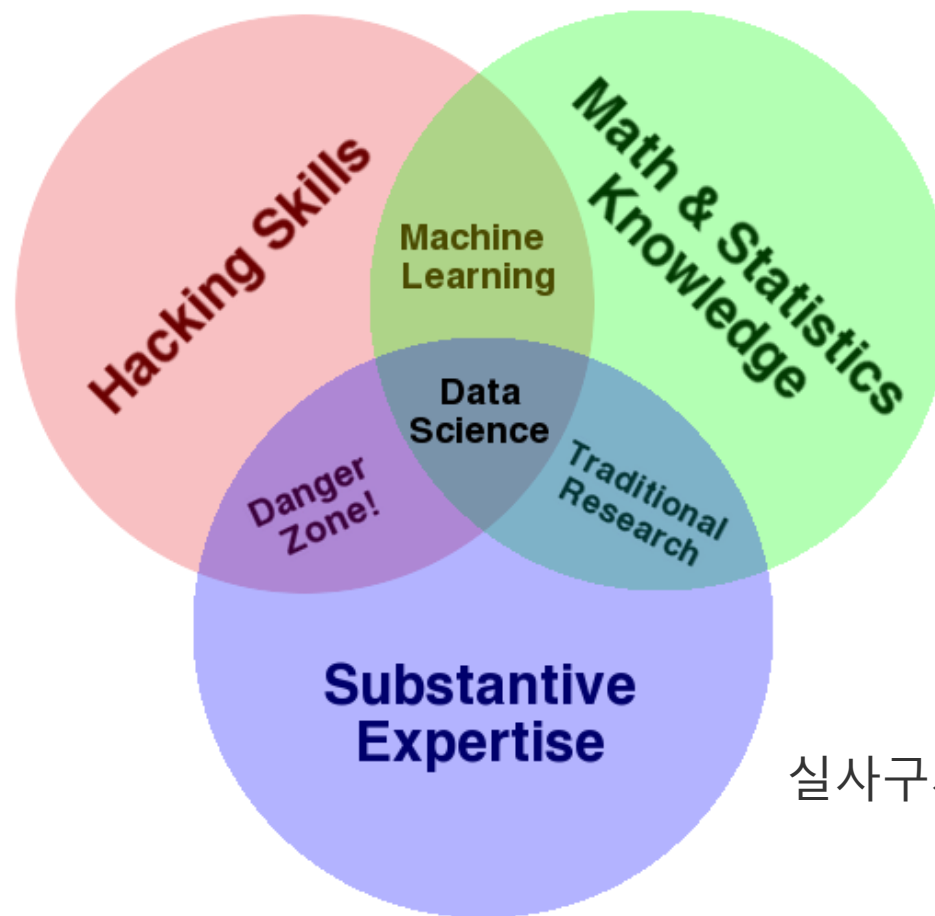


분석 역량을 위한 학문

수학 및 통계지식은 데이터분석과 모델링에 필요한 최소한의 기본지식(중학교 수준)만 배우면 데이터분석가의 역량에 충분하다.



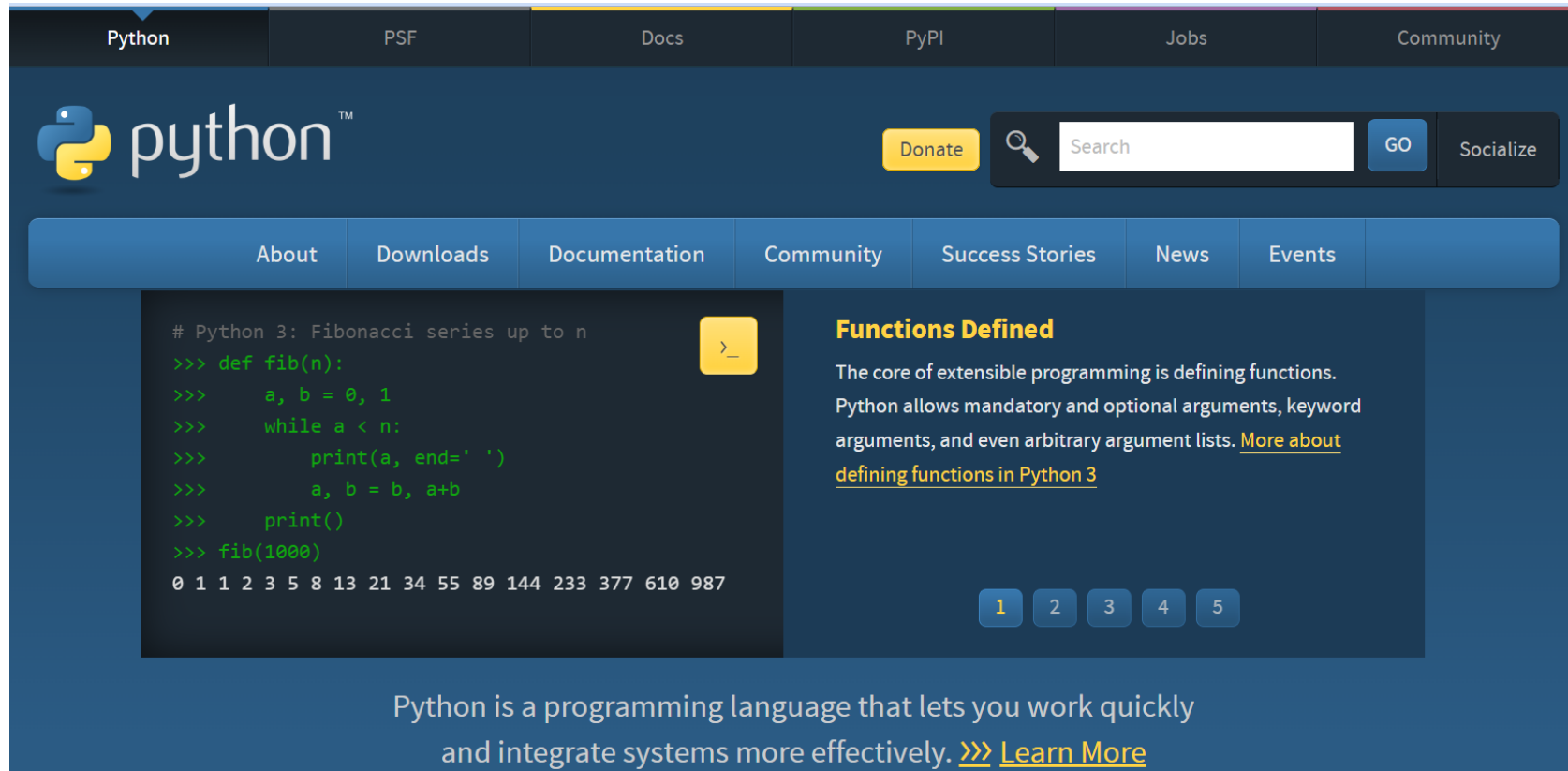
데이터분석 역량



실사구시(實事求是)

<http://drewconway.com/zia/2013/3/26/the-data-science-venn-diagram>

Python 설치하기



The screenshot shows the Python.org homepage. At the top, there's a navigation bar with links: Python, PSF, Docs, PyPI, Jobs, and Community. Below this is the Python logo and a search bar with a 'GO' button and a 'Socialize' button. A 'Donate' button is also visible. The main content area features a grid of links: About, Downloads, Documentation, Community, Success Stories, News, and Events. Below these links, there's a code editor showing a Fibonacci function definition and its output. To the right of the code editor, there's a section titled 'Functions Defined' with a description of Python's extensibility and a link to 'More about defining functions in Python 3'. At the bottom of the page, there's a statement: 'Python is a programming language that lets you work quickly and integrate systems more effectively. >>> [Learn More](#)'.

```
# Python 3: Fibonacci series up to n
>>> def fib(n):
>>>     a, b = 0, 1
>>>     while a < n:
>>>         print(a, end=' ')
>>>         a, b = b, a+b
>>>     print()
>>> fib(1000)
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987
```

Functions Defined

The core of extensible programming is defining functions. Python allows mandatory and optional arguments, keyword arguments, and even arbitrary argument lists. [More about defining functions in Python 3](#)

1 2 3 4 5

Python is a programming language that lets you work quickly and integrate systems more effectively. >>> [Learn More](#)

```
> cd myproject
> py -3 -m venv .venv

> .venv\Scripts\activate
```

<https://www.youtube.com/watch?v=RxGQVeipdjg&t=862s>

Python Library

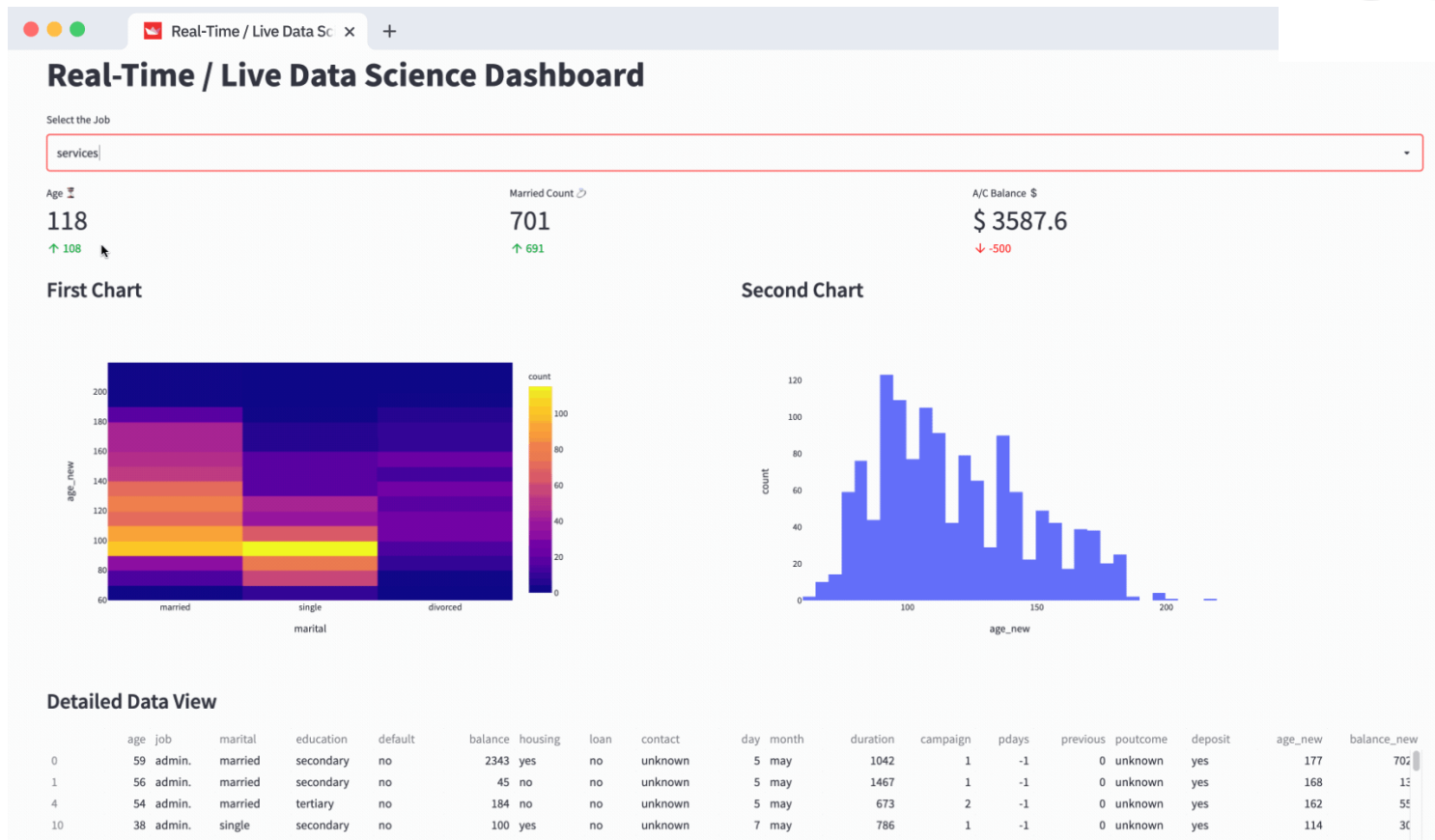


- Python
- Streamlit 패키지
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Streamlit 소개



Streamlit



<https://blog.streamlit.io/how-to-build-a-real-time-live-dashboard-with-streamlit/>

Streamlit 소개


Streamlit is an open-source app framework for Machine Learning and Data Science projects <https://omdena.com/blog/streamlit-web-app-examples/>


 Documentation

 Search

Ctrl-K



 **Streamlit library**

Get started 


Installation

● **Main concepts**


Create an app

Multipage apps 

API reference 

Advanced features 

Components 

Roadmap 

Changelog

Home / Streamlit library / Get started / **Main concepts**

Main concepts

Working with Streamlit is simple. First you sprinkle a few Streamlit commands into a normal Python script, then you run it with

```
streamlit run :
```

```
streamlit run your_script.py [-- script args]
```



As soon as you run the script as shown above, a local Streamlit server will spin up and your app will open in a new tab in your default web browser. The app is your canvas, where you'll draw charts, text, widgets, tables, and more.

What gets drawn in the app is up to you. For example `st.text` writes raw text to your app, and `st.line_chart` draws — you guessed it — a line chart. Refer to our [API documentation](#) to see all commands that are available to you.

Jupyter Notebook

```
import pandas as pd
# URL of the CSV file
url = "https://raw.githubusercontent.com/dataprofessor/data/master/penguins_size.csv"
# Read the CSV file into a DataFrame
df = pd.read_csv(url)
df
```

	species	island	culmen_length_mm	culmen_depth_mm	flipper_length_mm	body_mass_g	sex
0	Adelie	Torgersen	39.1	18.7	181.0	3750.0	MALE
1	Adelie	Torgersen	39.5	17.4	186.0	3800.0	FEMALE
2	Adelie	Torgersen	40.3	18.0	195.0	3250.0	FEMALE
3	Adelie	Torgersen	NaN	NaN	NaN	NaN	NaN
4	Adelie	Torgersen	36.7	19.3	193.0	3450.0	FEMALE
...
339	Gentoo	Biscoe	NaN	NaN	NaN	NaN	NaN
340	Gentoo	Biscoe	46.8	14.3	215.0	4850.0	FEMALE
341	Gentoo	Biscoe	50.4	15.7	222.0	5750.0	MALE
342	Gentoo	Biscoe	45.2	14.8	212.0	5200.0	FEMALE
343	Gentoo	Biscoe	49.9	16.1	213.0	5400.0	MALE

344 rows × 7 columns

python with streamlit library

편집기나 주피터노트북 등을 이용하여 streamlit_app.py파이썬 파일만들기

```
streamlit_app
× +
파일 편집 보기

import streamlit as st
import pandas as pd

st.title('🐼 Pandas - An EDA example')

df = pd.read_csv('https://raw.githubusercontent.com/dataprofessor/data/master/penguins_size.csv')
st.write(df)

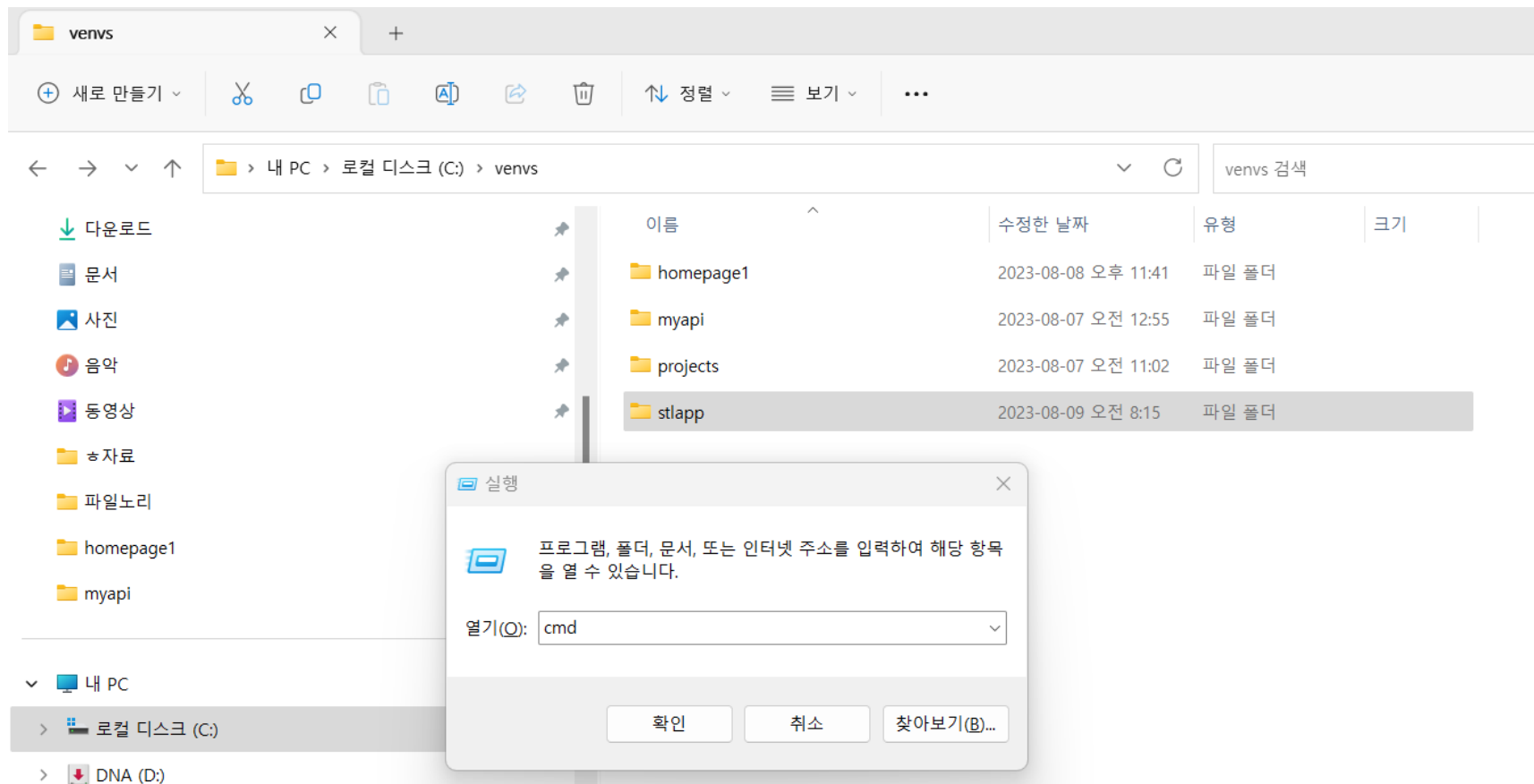
if st.button('Show descriptive statistics analysis'):
    st.write(df.describe())
else:
    st.info('👉 Click on the button ')
```

```
%%writefile streamlit_app.py # 주피터노트북에서(or 구글 colab) 파이썬 파일 만들기
import streamlit as st
import pandas as pd
st.title('🐼 Pandas - An EDA example')
df = pd.read_csv('https://raw.githubusercontent.com/dataprofessor/data/master/penguins_size.csv')
st.write(df)
if st.button('Show descriptive statistics analysis'):
    st.write(df.describe())
else:
    st.info('👉 Click on the button ')
```

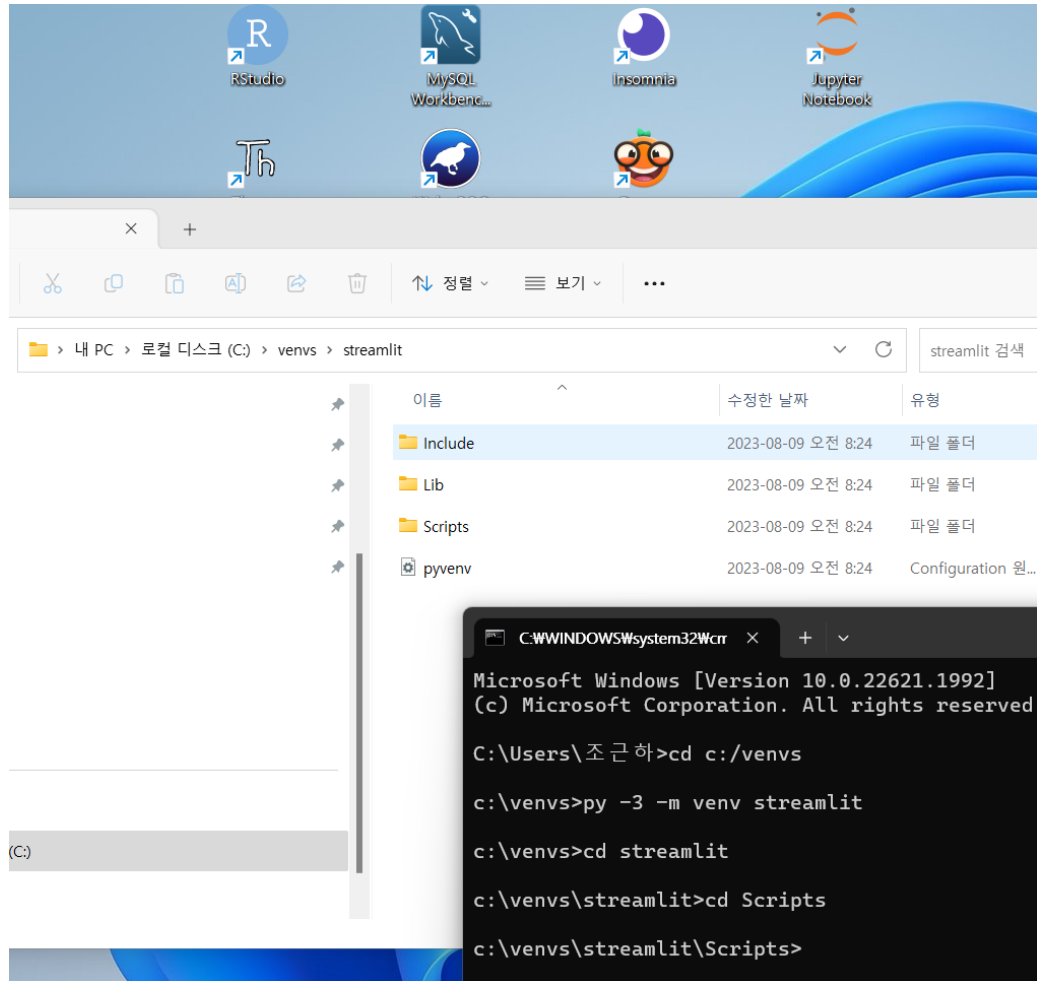
python 가상환경 만들기



+ r : 동시에 누르고 층 입력하면 아래



python 가상환경 만들기



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.22621.1992]
(c) Microsoft Corporation. All rights reserved.

C:\Users\조근하>cd c:/venvs

c:\venvs>py -3 -m venv streamlit

c:\venvs>cd streamlit

c:\venvs\streamlit>cd Scripts

c:\venvs\streamlit\Scripts>
```

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.22621.1992]
(c) Microsoft Corporation. All rights reserved.

C:\Users\조근하>cd c:/venvs

c:\venvs>py -3 -m venv streamlit

c:\venvs>cd streamlit

c:\venvs\streamlit>cd Scripts

c:\venvs\streamlit\Scripts>
```

파일 실행하기

📁 > 내 PC > 로컬 디스크 (C:) > venvs > streamlit					streamlit 검색	
(C:)	이름	수정한 날짜	유형	크기		
수업자료개발(배포용)	Include	2023-08-09 오전 8:24	파일 폴더			
	Lib	2023-08-09 오전 8:24	파일 폴더			
	Scripts	2023-08-09 오전 8:24	파일 폴더			
load-20230326T063221Z-001	pyenv	2023-08-09 오전 8:24	Configuration 원...	1KB		
	streamlit_app	2023-08-09 오전 8:12	PY 파일	1KB		
invergence						

python with streamlit library

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.22621.1992]
(c) Microsoft Corporation. All rights reserved.

C:\Users\조근하>cd c:/venvs

c:\venvs>py -3 -m venv streamlit

c:\venvs>cd streamlit

c:\venvs\streamlit>cd Scripts

c:\venvs\streamlit\Scripts>activate
```

python with streamlit library

```
C:\WINDOWS\system32\cmd.exe X + v
(streamlit) c:\venvs\streamlit\Scripts>pip install streamlit
Collecting streamlit
  Using cached streamlit-1.25.0-py2.py3-none-any.whl (8.1 MB)
Collecting altair<6,>=4.0 (from streamlit)
  Using cached altair-5.0.1-py3-none-any.whl (471 kB)
Collecting blinker<2,>=1.0.0 (from streamlit)
  Using cached blinker-1.6.2-py3-none-any.whl (13 kB)
Collecting cachetools<6,>=4.0 (from streamlit)
  Using cached cachetools-5.3.1-py3-none-any.whl (9.3 kB)
Collecting click<9,>=7.0 (from streamlit)
  Using cached click-8.1.6-py3-none-any.whl (97 kB)
Collecting importlib-metadata<7,>=1.4 (from streamlit)
  Using cached importlib_metadata-6.8.0-py3-none-any.whl (22 kB)
Collecting numpy<2,>=1.19.3 (from streamlit)
  Downloading numpy-1.25.2-cp311-cp311-win_amd64.whl (15.5 MB)
  15.5/15.5 MB 36.4 MB/s eta 0:00:00
Collecting packaging<24,>=16.8 (from streamlit)
  Using cached packaging-23.1-py3-none-any.whl (48 kB)
```

python with streamlit library

```
C:\WINDOWS\system32\cmd.exe
-6.8.0 jinja2-3.1.2 jsonschema-4.19.0 jsonschema-specifications-2023.7.1 markdown-it-py-3.0.0 mdurl-0.1.2 numpy-1.25.2 packaging-23.1 pandas-2.0.3 pillow-9.5.0 protobuf-4.24.0 pyarrow-12.0.1 pydeck-0.8.0 pygments-2.16.1 pympler-1.0.1 python-dateutil-2.8.2 pytz-2023.3 pytz-deprecation-shim-0.1.0.post0 referencing-0.30.2 requests-2.31.0 rich-13.5.2 rpds-py-0.9.2 six-1.16.0 smmap-5.0.0 streamlit-1.25.0 tenacity-8.2.2 toml-0.10.2 toolz-0.12.0 tornado-6.3.2 typing-extensions-4.7.1 tzdata-2023.3 tzlocal-4.3.1 urllib3-2.0.4 validators-0.20.0 watchdog-3.0.0 zipp-3.16.2

[notice] A new release of pip is available: 23.1.2 -> 23.2.1
[notice] To update, run: python.exe -m pip install --upgrade pip

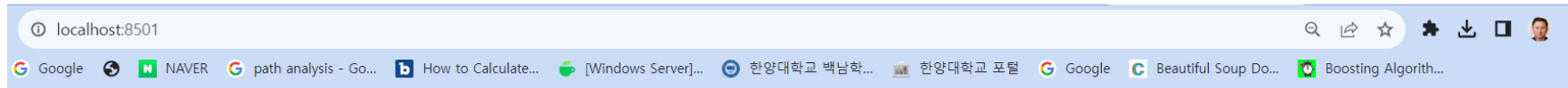
(streamlit) c:\venvs\streamlit\Scripts>cd..

(streamlit) c:\venvs\streamlit>streamlit run streamlit_app.py

You can now view your Streamlit app in your browser.

Local URL: http://localhost:8501
Network URL: http://172.30.1.33:8501
```

python with streamlit library



Pandas - An EDA example

	species	island	culmen_length_mm	culmen_depth_mm	flipper_length_mm	body_mass_g	sex
0	Adelie	Torgersen	39.1	18.7	181	3,750	M
1	Adelie	Torgersen	39.5	17.4	186	3,800	FI
2	Adelie	Torgersen	40.3	18	195	3,250	FI
3	Adelie	Torgersen	None	None	None	None	N
4	Adelie	Torgersen	36.7	19.3	193	3,450	FI
5	Adelie	Torgersen	39.3	20.6	190	3,650	M
6	Adelie	Torgersen	38.9	17.8	181	3,625	FI
7	Adelie	Torgersen	39.2	19.6	195	4,675	M
8	Adelie	Torgersen	34.1	18.1	193	3,475	N
9	Adelie	Torgersen	42	20.2	190	4,250	N

Show descriptive statistics analysis

	culmen_length_mm	culmen_depth_mm	flipper_length_mm	body_mass_g
count	342	342	342	342
mean	43.9219	17.1512	200.9152	4,201.7544
std	5.4596	1.9748	14.0617	801.9545
min	32.1	13.1	172	2,700

Python Library



- Python
- Streamlit 패키지
- Flask 패키지
- FastAPI 패키지
- replit(도커 환경 개발 툴)

Flask 소개

Project Links

[Donate](#)
[PyPI Releases](#)
[Source Code](#)
[Issue Tracker](#)
[Chat](#)

Contents

[Welcome to Flask](#)
[User's Guide](#)
[API Reference](#)
[Additional Notes](#)

Quick search



Flask

Welcome to Flask's documentation. Get started with [Installation](#) and then get an overview with the [Quickstart](#). There is also a more detailed [Tutorial](#) that shows how to create a small but complete application with Flask. Common patterns are described in the [Patterns for Flask](#) section. The rest of the docs describe each component of Flask in detail, with a full reference in the [API](#) section.

Flask depends on the [Werkzeug](#) WSGI toolkit, the [Jinja](#) template engine, and the [Click](#) CLI toolkit. Be sure to check their documentation as well as Flask's when looking for information.

Flask 소개

Virtual environments

Use a virtual environment to manage the dependencies for your project, both in development and in production.

What problem does a virtual environment solve? The more Python projects you have, the more likely it is that you need to work with different versions of Python libraries, or even Python itself. Newer versions of libraries for one project can break compatibility in another project.

Virtual environments are independent groups of Python libraries, one for each project. Packages installed for one project will not affect other projects or the operating system's packages.

Python comes bundled with the `venv` module to create virtual environments.

Create an environment

Create a project folder and a `.venv` folder within:

macOS/Linux

Windows

```
> mkdir myproject
> cd myproject
> py -3 -m venv .venv
```

Python 가상환경(Virtual Environment) 만들기

```
> mkdir myproject  
> cd myproject  
> py -3 -m venv .venv  
  
> .venv\Scripts\activate
```

<https://flask.palletsprojects.com/en/2.3.x/installation/#virtual-environments>

```
C:\WINDOWS\system32\cmd.exe X + v  
Microsoft Windows [Version 10.0.22621.1992]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\Users\조근하>cd C:\venvs\myapi  
  
C:\venvs\myapi>activate  
  
(homepage1) C:\venvs\homepage1\Scripts>pip install flask  
Collecting flask  
  Downloading Flask-2.3.2-py3-none-any.whl (96 kB)  
    _____ 96.9/96.9 kB ? eta 0:00:00  
Collecting Werkzeug>=2.3.3 (from flask)  
  Downloading Werkzeug-2.3.6-py3-none-any.whl (242 kB)  
    _____ 242.5/242.5 kB ? eta 0:00:00  
Collecting Jinja2>=3.1.2 (from flask)  
  Using cached Jinja2-3.1.2-py3-none-any.whl (133 kB)  
Collecting itsdangerous>=2.1.2 (from flask)  
  Downloading itsdangerous-2.1.2-py3-none-any.whl (15 kB)  
Collecting click>=8.1.3 (from flask)  
  Using cached click-8.1.6-py3-none-any.whl (97 kB)  
Collecting blinker>=1.6.2 (from flask)  
  Using cached blinker-1.6.2-py3-none-any.whl (13 kB)  
Collecting colorama (from click>=8.1.3->flask)  
  Using cached colorama-0.4.6-py2.py3-none-any.whl (25 kB)  
Collecting MarkupSafe>=2.0 (from Jinja2>=3.1.2->flask)  
  Downloading MarkupSafe-2.1.3-cp311-cp311-win_amd64.whl (17 kB)  
Installing collected packages: MarkupSafe, itsdangerous, colorama, blinker, Werkzeug, Jinja2, click, flask  
Successfully installed Jinja2-3.1.2 MarkupSafe-2.1.3 Werkzeug-2.3.6 blinker-1.6.2 click-8.1.6 colorama-0.4.6 flask-2.3.2
```

homepage1 가상환경 만들고 flask 설치

```
> cd venv  
> py -3 -m venv homepage1
```

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.22621.1992]
(c) Microsoft Corporation. All rights reserved.

C:\Users\조근하>cd C:\venvs\myapi

C:\venvs\myapi>activate

(homepage1) C:\venvs\homepage1\Scripts>pip install flask
Collecting flask
  Downloading Flask-2.3.2-py3-none-any.whl (96 kB)
    96.9/96.9 kB ? eta 0:00:00
```

HTML, CSS template 다운로드하고 복사하기



bootstrap free template



이미지

React

Vue

동영상

도서

지도

쇼핑

뉴스

항공편

검색결과 약 95,000,000개 (0.35초)



startbootstrap.com

<https://startbootstrap.com> > themes

Free Bootstrap Themes & Templates - Start Bootstrap

Free themes for **Bootstrap** 5 that are open source, MIT licensed, and **free** to download - these pre-designed **themes** are easy to customize and ready to publish.

Freelancer · Agency · Personal · Creative



Start Bootstrap

Themes >

Templates >

Bundles >

Forms

Resources >

Bootstrap Templates & Themes

Free Bootstrap themes that are ready to customize and publish. All of our themes are built with Bootstrap 5, MIT licensed, and updated regularly!

HTML, CSS template 다운로드하고 복사하기

Start Bootstrap Themes > Templates > Bundles > Forms Resources > Blog Log In

Showcase your app beautifully.
Launch your mobile app landing page faster with this free, open source theme from Start Bootstrap!

Google Play App Store

"An intuitive solution to a common problem that we all face, wrapped up in a single app!"

New Age
A clean and modern mobile app landing page template built with Bootstrap

클립펀도 비즈하우스
샘플디자인 무료
더 넓어진 인세면, 더 강해진 홍보력 클립펀, 비즈하우스에서는 1개부터 제작가능!
bizhows.com

Free Download

homepage1 검색

이름 수정한 날짜 유형 크기

__pycache__	2023-08-09 오전 12:00	파일 폴더	
html	2023-08-08 오후 11:41	파일 폴더	
Include	2023-08-08 오후 11:23	파일 폴더	
Lib	2023-08-08 오후 11:23	파일 폴더	
Scripts			
pyenv			
start			

html 검색

이름 수정한 날짜 유형 크기

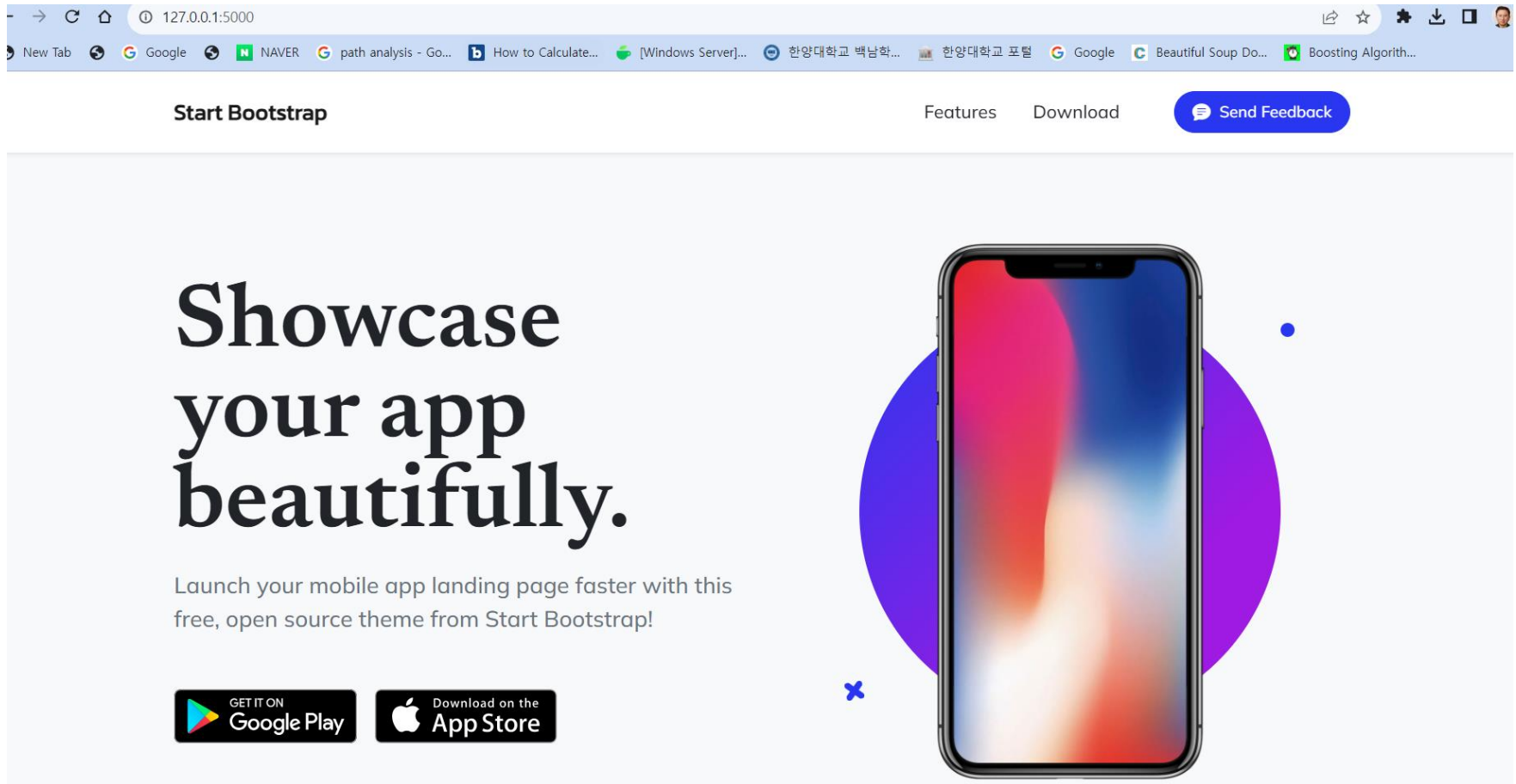
assets	2023-08-08 오후 11:41	파일 폴더	
css	2023-08-08 오후 11:41	파일 폴더	
js	2023-08-08 오후 11:41	파일 폴더	
index	2023-08-08 오후 11:40	Chrome HTML Do...	20KB

Python 코드 만들고 실행하기

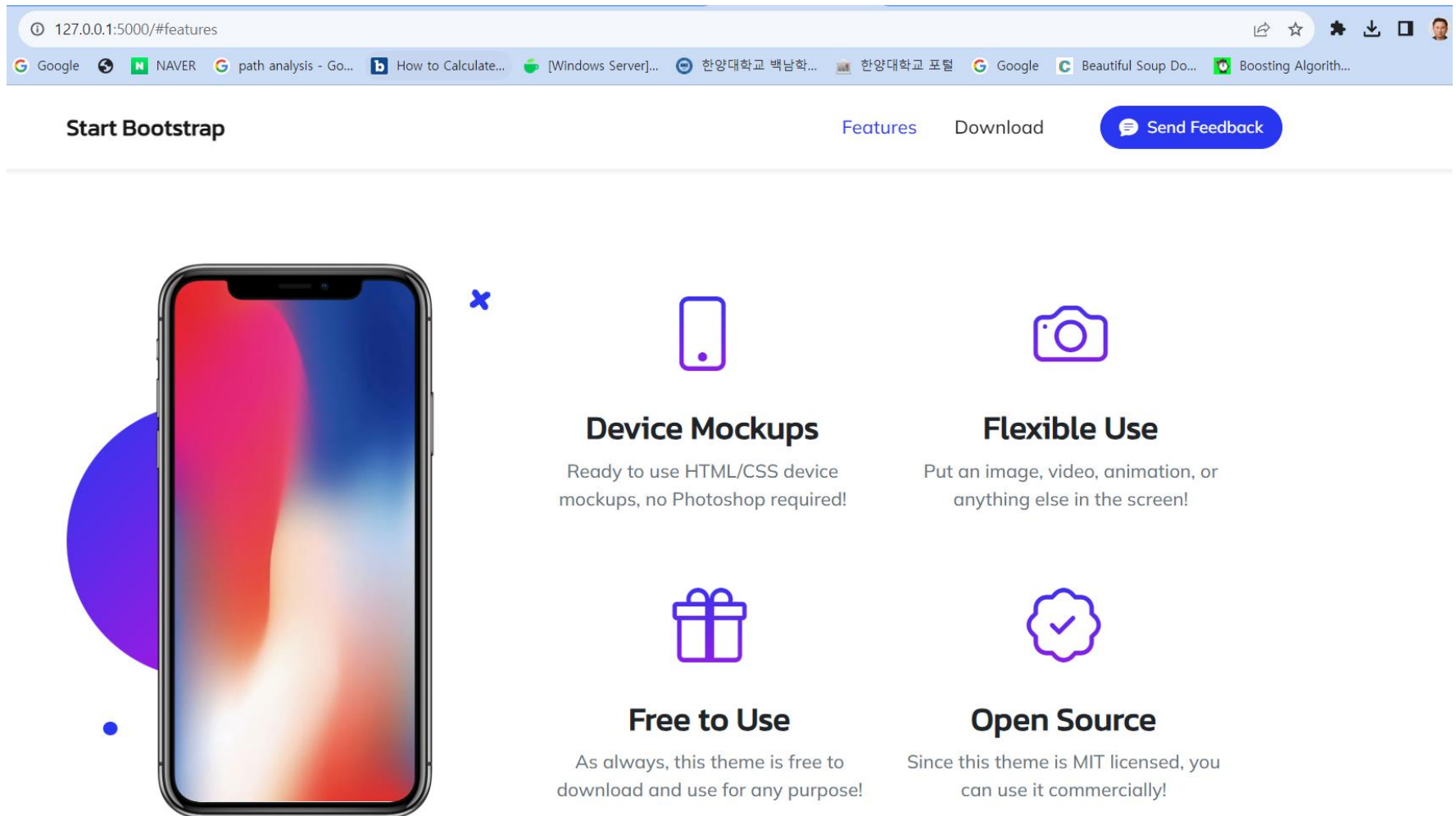
```
from flask import Flask, send_from_directory
app = Flask(__name__)
@app.route("/hello")                # 127.0.0.1
def hello_world():
    return "<p>Hello, World!</p>"
@app.route("/")                    # 127.0.0.1
def index():
    return send_from_directory('html', 'index.html')
@app.route("/<path:name>")         # 127.0.0.1/name/
def start(name):
    return send_from_directory('html', name)
```

```
(homepage1) C:\venvs\homepage1>flask --app start run
* Serving Flask app 'start'
* 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 - - [09/Aug/2023 00:00:39] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [09/Aug/2023 00:00:40] "GET /css/styles.css HTTP/1.1" 200 -
127.0.0.1 - - [09/Aug/2023 00:00:40] "GET /js/scripts.js HTTP/1.1" 200 -
127.0.0.1 - - [09/Aug/2023 00:00:40] "GET /assets/img/google-play-badge.svg HTTP/1.1" 200 -
127.0.0.1 - - [09/Aug/2023 00:00:40] "GET /assets/img/app-store-badge.svg HTTP/1.1" 200 -
127.0.0.1 - - [09/Aug/2023 00:00:40] "GET /assets/img/tnw-logo.svg HTTP/1.1" 200 -
127.0.0.1 - - [09/Aug/2023 00:00:40] "GET /assets/img/portrait_black.png HTTP/1.1" 200 -
```


로컬사이트 포트 확인하기



로컬사이트 포트 확인하기



127.0.0.1:5000/#features

Google NAVER path analysis - Go... How to Calculate... [Windows Server]... 한양대학교 백남학... 한양대학교 포털 Google Beautiful Soup Do... Boosting Algorith...

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Device Mockups
Ready to use HTML/CSS device mockups, no Photoshop required!

Flexible Use
Put an image, video, animation, or anything else in the screen!

Free to Use
As always, this theme is free to download and use for any purpose!

Open Source
Since this theme is MIT licensed, you can use it commercially!

Python Library



- Python
- Streamlit 패키지
- Flask 패키지
- FastAPI 패키지
- replit(도커 환경 개발 툴)

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