

[django , 1]

Django

Django is a high-level Python web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel. It's free and open source.

<https://www.djangoproject.com>

Why Django?



Ridiculously fast.

Django was designed to help developers take applications from concept to completion as quickly as possible.

Why Django?

Fully loaded.

Django includes dozens of extras you can use to handle common web development tasks. Django takes care of user authentication, content administration, site maps, RSS feeds, and many more tasks — right out of the box.



Why Django?



Exceedingly scalable.

Some of the busiest sites on the planet use Django's ability to quickly and flexibly scale to meet the heaviest traffic demands.

Why Django?

Incredibly versatile.

Companies, organizations and governments have used Django to build all sorts of things – from content management systems to social networks to scientific computing platforms.

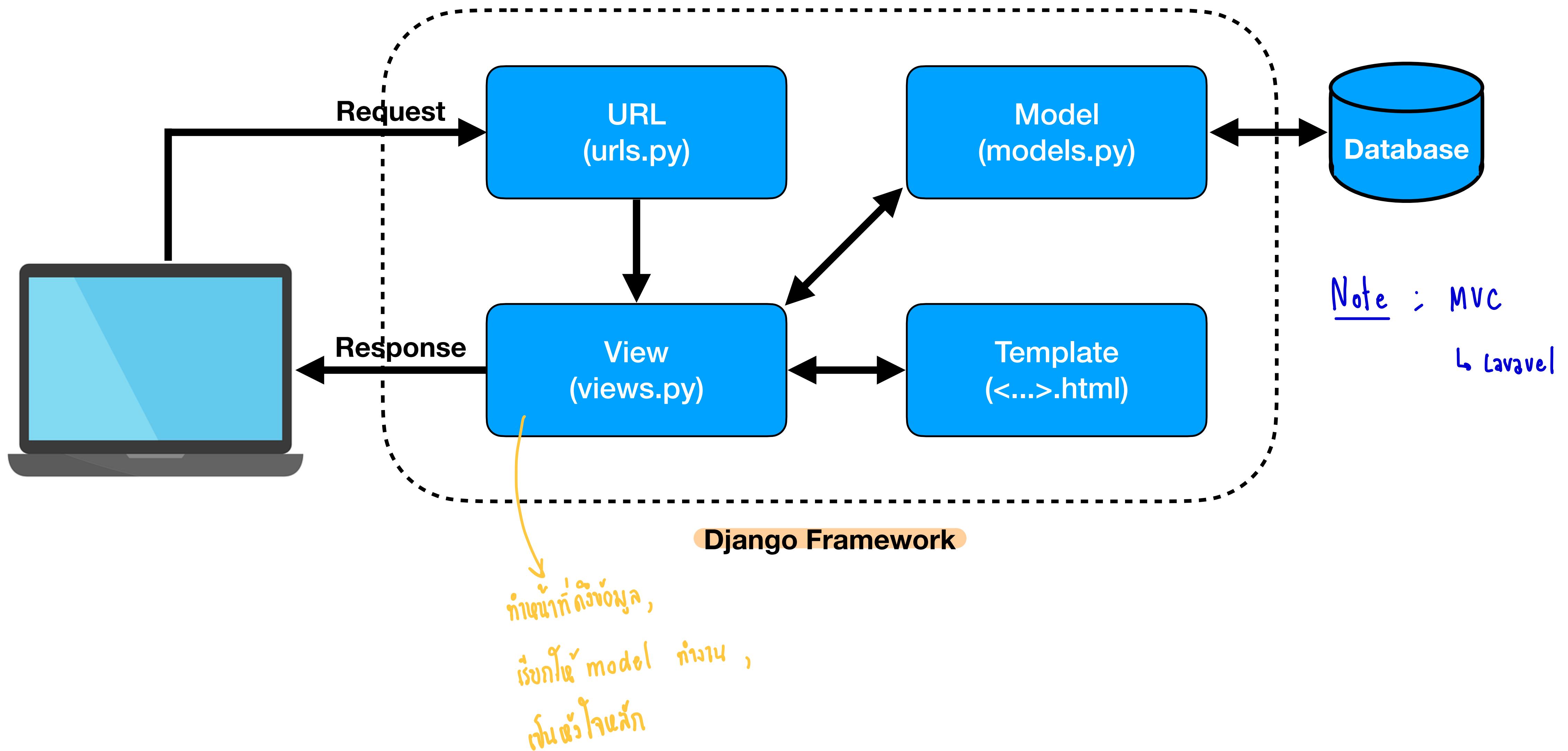


django History

- Django was created in the fall of 2003.
- Adrian Holovaty and Simon Willison.
- Version 1 was released publicly in July 2005.

Version 1 ລົງທະບຽນ ສິ້ງ 4

Model Template View (MTV)

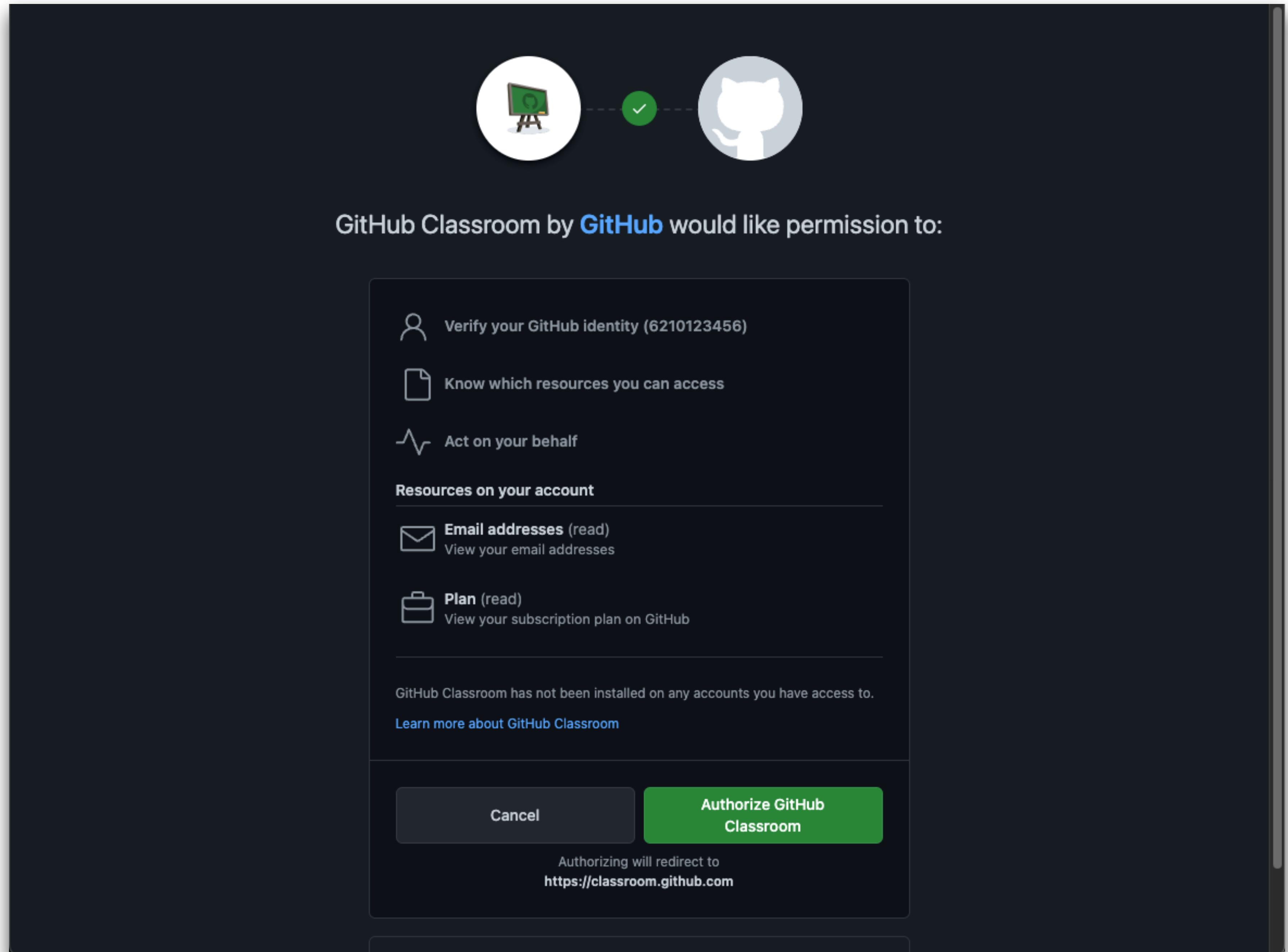


Requirements

- Python 3.x.y
 - pip (a package manager for Python packages.)
 - pipenv
- Visual Studio Code (VS Code)
 - Python extension (By Microsoft)
- Git (<https://git-scm.com>)
- github.com account

Github Classroom Assignment

- <https://classroom.github.com/a/VF5c2ap-> *Assignment*
- ใช้ GitHub account ของนักศึกษา (เช่น <เลขทะเบียน>@student.tu.ac.th) join assignment ข้างบน
- เลือก Identifiers ที่เป็นเลขทะเบียนของนักศึกษา



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6010613393
6110613004
6110613020
6110613046
6110613061
6110613087
6110613095
6110613111

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6110613285
6110680565
6210123456
6210520117
6210530017
6210612534
6210612542

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Your account is linked to 6210123456 on the roster. If this is wrong, please reach out to your instructor. X

CN334-64-2

Accept the assignment — Django Learning

Once you accept this assignment, you will be granted access to the [django-learning-6210123456](#) repository in the [CN334](#) organization on GitHub.

[Accept this assignment](#)

<https://github.com/CN334/django-learning-6210123456>

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You accepted the assignment, **Django Learning**. We're configuring your repository now. This may take a few minutes to complete. Refresh this page to see updates.



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You're ready to go!

You accepted the assignment, **Django Learning**.

Your assignment repository has been created:

🔗 <https://github.com/CN334/django-learning-6210123456>

We've configured the repository associated with this assignment ([update](#)).



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Searched GitHub for "Django Learning" and found a repository named "CN334 / django-learning-6210123456". The repository is private and contains three files: .gitignore, README.md, and a commit from "github-classroom[bot]". The README.md file contains the text "This is a read me for Django leaning".

Code Issues Pull requests Actions Projects Security Insights

main 1 branch 0 tags Go to file Add file Code

About

django-learning-6210123456 created by GitHub Classroom

Readme 0 stars 0 watching 0 forks

Releases

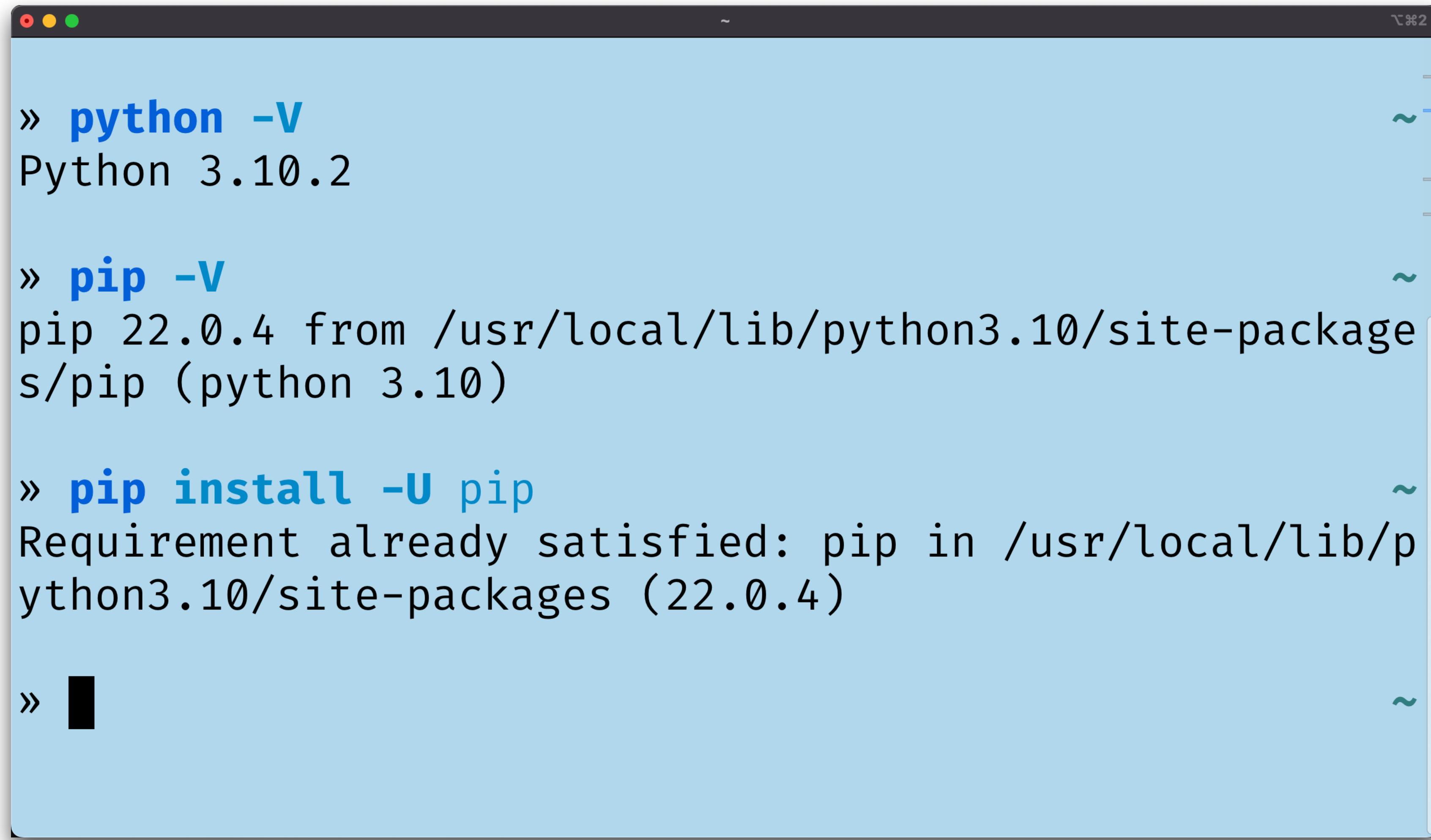
No releases published Create a new release

Packages

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python and pip



» **python -V**
Python 3.10.2

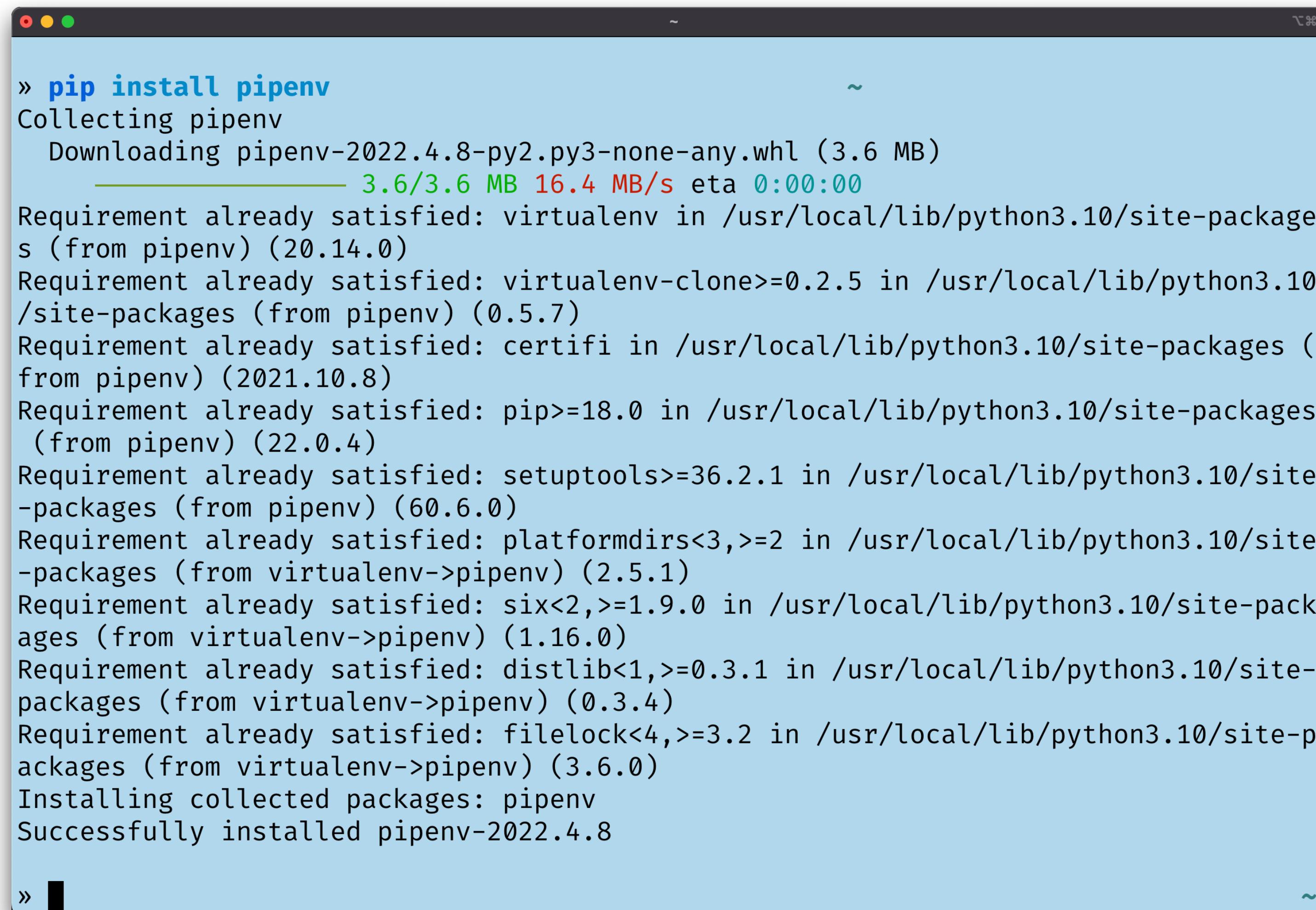
» **pip -V**
pip 22.0.4 from /usr/local/lib/python3.10/site-packages/pip (python 3.10)

» **pip install -U pip**
Requirement already satisfied: pip in /usr/local/lib/python3.10/site-packages (22.0.4)

» █

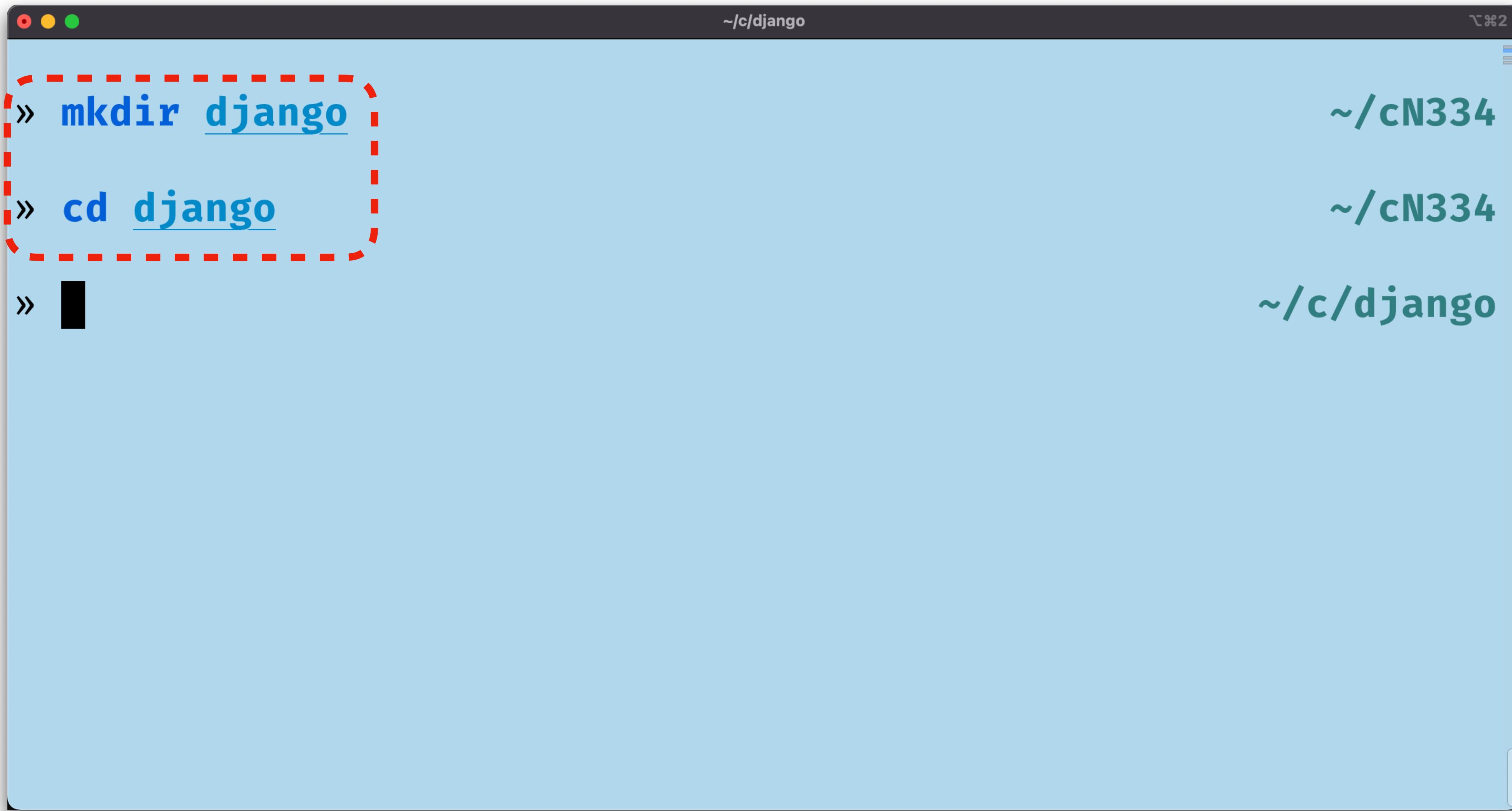
ຕິດຕັ້ງ Virtual Environment (pipenv)

» pip install pipenv



```
» pip install pipenv
Collecting pipenv
  Downloading pipenv-2022.4.8-py2.py3-none-any.whl (3.6 MB)
    ━━━━━━━━━━━━━━━━━━━━ 3.6/3.6 MB 16.4 MB/s eta 0:00:00
Requirement already satisfied: virtualenv in /usr/local/lib/python3.10/site-packages (from pipenv) (20.14.0)
Requirement already satisfied: virtualenv-clone>=0.2.5 in /usr/local/lib/python3.10/site-packages (from pipenv) (0.5.7)
Requirement already satisfied: certifi in /usr/local/lib/python3.10/site-packages (from pipenv) (2021.10.8)
Requirement already satisfied: pip>=18.0 in /usr/local/lib/python3.10/site-packages (from pipenv) (22.0.4)
Requirement already satisfied: setuptools>=36.2.1 in /usr/local/lib/python3.10/site-packages (from pipenv) (60.6.0)
Requirement already satisfied: platformdirs<3,>=2 in /usr/local/lib/python3.10/site-packages (from virtualenv->pipenv) (2.5.1)
Requirement already satisfied: six<2,>=1.9.0 in /usr/local/lib/python3.10/site-packages (from virtualenv->pipenv) (1.16.0)
Requirement already satisfied: distlib<1,>=0.3.1 in /usr/local/lib/python3.10/site-packages (from virtualenv->pipenv) (0.3.4)
Requirement already satisfied: filelock<4,>=3.2 in /usr/local/lib/python3.10/site-packages (from virtualenv->pipenv) (3.6.0)
Installing collected packages: pipenv
Successfully installed pipenv-2022.4.8
```

สร้างไดเรกทอรีสำหรับ Django



A screenshot of a macOS terminal window titled '~ /c/django'. The window shows the following command history:

- » mkdir django ~ /cN334
- » cd django ~ /cN334
- » █ ~ /c/django

The first two commands are highlighted with a red dashed rectangle. The third command has a black rectangular cursor at the beginning.

Clone repository

```
git clone https://github.com/CN334/django-learning-6210123456.git .
```

```
git clone https://6210123456@github.com/CN334/django-learning-6210123456.git .
```

```
» mkdir django                                     ~/CN334  
» cd django                                     ~/CN334  
» git clone https://6210123456@github.com/CN334/django-learning-6210123456.git .  
Cloning into '.'...  
Password for 'https://6210123456@github.com':  
remote: Enumerating objects: 4, done.  
remote: Counting objects: 100% (4/4), done.  
remote: Compressing objects: 100% (3/3), done.  
remote: Total 4 (delta 0), reused 3 (delta 0), pack-reused 0  
Receiving objects: 100% (4/4), done.  
» █
```

สร้างไดเรกทอรีโปรเจกต์ (project1)

ติดตั้ง Django Framework ลงในโปรเจกต์

» pipenv install django==3.2.13

```
» pwd                                         ~/C/django
/Users/pwachira/CN334/django

» mkdir project1                            ~/C/django

» cd project1                             ~/C/django

» pipenv install django==3.2.13             ~/C/django
Creating a virtualenv for this project...
Pipfile: /Users/pwachira/CN334/django/project1/Pipfile
Using /usr/local/opt/python@3.10/bin/python3 (3.10.2) to create virtualenv...
.: Creating virtual environment...created virtual environment CPython3.10.2.final.0-64 in 264ms
    creator CPython3Posix(dest=/Users/pwachira/.local/share/virtualenvs/project1-sAfKJubY, clear=False, no_vcs_ignore=False, global=False)
```

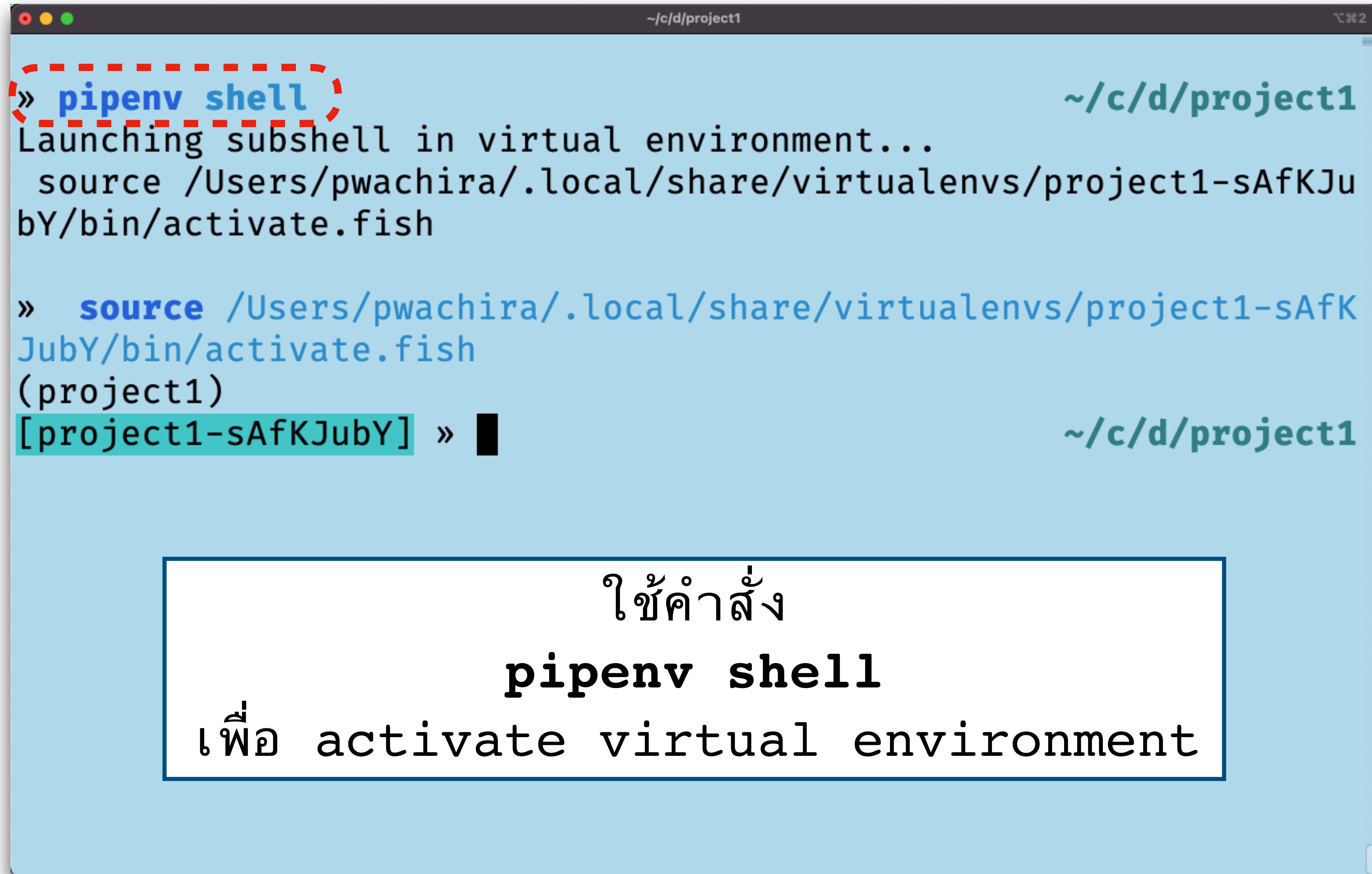
ตัวอย่างผลลัพธ์ของคำสั่งติดตั้ง Django Framework

```
» pipenv install django==3.2.13
Creating a virtualenv for this project...
Pipfile: /Users/pwachira/CN334/django/project1/Pipfile
Using /usr/local/opt/python@3.10/bin/python3 (3.10.2) to create virtualenv...
: Creating virtual environment...created virtual environment CPython3.10.2.final.0-64 in 457ms
  creator CPython3Posix(dest=/Users/pwachira/.local/share/virtualenvs/project1-sAfKJubY, clear=False, no_vcs_ignore=False, global=False)
  seeder FromAppData(download=False, pip=bundle, setuptools=bundle, wheel=bundle, via=copy, app_data_dir=/Users/pwachira/Library/Application Support/virtualenv)
  added seed packages: pip==22.0.4, setuptools==61.0.0, wheel==0.37.1
  activators BashActivator,CShellActivator,FishActivator,NushellActivator,PowerShellActivator,PythonActivator

✓ Successfully created virtual environment!
Virtualenv location: /Users/pwachira/.local/share/virtualenvs/project1-sAfKJubY
Creating a Pipfile for this project...
Installing django==3.2.13...
Adding django to Pipfile's [packages]...
✓ Installation Succeeded
Pipfile.lock not found, creating...
Locking [dev-packages] dependencies...
Locking [packages] dependencies...
Building requirements...
Resolving dependencies...
✓ Success!
Updated Pipfile.lock (cc3abf)!
Installing dependencies from Pipfile.lock (cc3abf)...
    2 █████████████████████████████████████████ 0/0 - 00:00:00
To activate this project's virtualenv, run pipenv shell.
Alternatively, run a command inside the virtualenv with pipenv run.

» █
~ /c/d/project1
```

Active Virtual Environment



```
» pipenv shell
Launching subshell in virtual environment...
source /Users/pwachira/.local/share/virtualenvs/project1-sAfKJu
bY/bin/activate.fish

» source /Users/pwachira/.local/share/virtualenvs/project1-sAfK
JubY/bin/activate.fish
(project1)
[project1-sAfKJubY] »
```

ใช้คำสั่ง **pipenv shell** เพื่อ activate virtual environment

ติดตั้ง Django framework

```
» pipenv shell                                     ~/c/d/project1
Launching subshell in virtual environment...
  source /Users/pwachira/.local/share/virtualenvs/project1-sAfKJu
bY/bin/activate.fish

» source /Users/pwachira/.local/share/virtualenvs/project1-sAfK
JubY/bin/activate.fish
(project1)
[project1-sAfKJubY] » django-admin startproject project1 .
(project1)
[project1-sAfKJubY] » 
```

~/c/d/project1

django-admin startproject project1 .

project1 คือ ชื่อโปรเจกต์
• เป็นการสั่งให้ติดตั้งไฟล์ลงในไดเรกทอรีปัจจุบัน

Django Project Structure

```
» source /Users/pwachira/.local/share/virtualenvs/project1-sAfKJubY/bin/activate.fish
(project1)
[project1-sAfKJubY] » django-admin startproject project1 . ກຳນົດ
(project1)
[project1-sAfKJubY] » tree ~/c/d/project1
.
├── Pipfile
├── Pipfile.lock
├── manage.py
└── project1
    ├── __init__.py
    ├── asgi.py
    ├── settings.py
    ├── urls.py
    └── wsgi.py

1 directory, 8 files
(project1)
[project1-sAfKJubY] » ~/c/d/project1
```

For Windows:
tree /f

สรุปคำสั่ง

- ▶ mkdir django
- ▶ cd django
- ▶ mkdir project1
- ▶ cd project1
- ▶ pipenv install django==3.2.13
- ▶ pipenv shell
- ▶ django-admin startproject project1 .

ทดสอบการทำงานของ project1

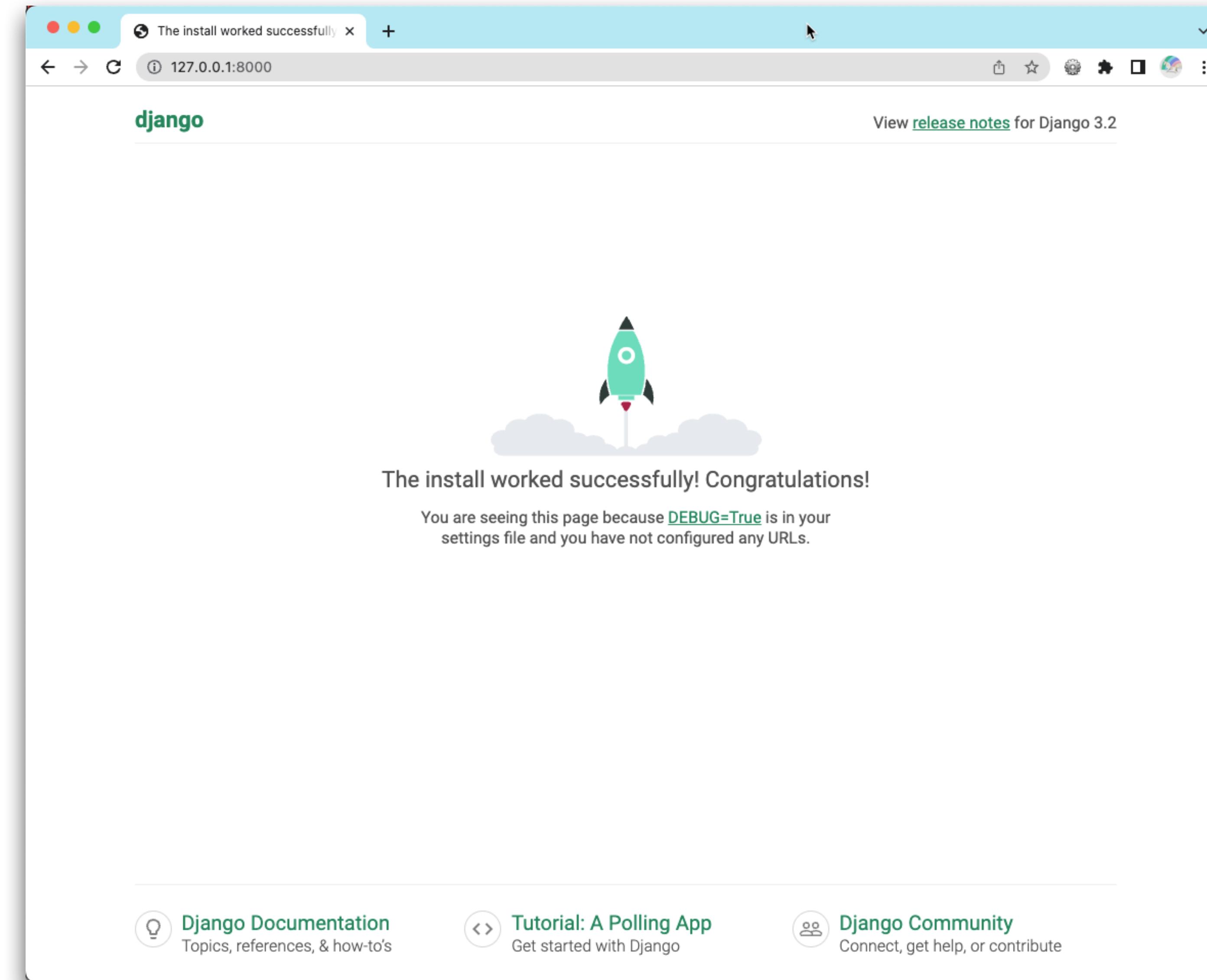
» python manage.py runserver

```
(project1)
[project1-sAfKJubY] » python manage.py runserver
Watching for file changes with StatReloader
Performing system checks...

System check identified no issues (0 silenced).

You have 18 unapplied migration(s). Your project may not work pr
operly until you apply the migrations for app(s): admin, auth, c
ontenttypes, sessions.
Run 'python manage.py migrate' to apply them.
April 18, 2022 - 10:43:09
Django version 3.2.13, using settings 'project1.settings'
Starting development server at http://127.0.0.1:8000/
Quit the server with CONTROL-C.
```

http://127.0.0.1:8000



Request status

```
Django version 3.2.13, using settings 'project1.settings'  
Starting development server at http://127.0.0.1:8000/  
Quit the server with CONTROL-C.  
  
[18/Apr/2022 10:46:23] "GET / HTTP/1.1" 200 10697  
[18/Apr/2022 10:46:24] "GET /static/admin/css/fonts.css HTTP/1.1  
" 304 0  
[18/Apr/2022 10:46:24] "GET /static/admin/fonts/Roboto-Light-web  
font.woff HTTP/1.1" 304 0  
[18/Apr/2022 10:46:24] "GET /static/admin/fonts/Roboto-Regular-w  
ebfont.woff HTTP/1.1" 304 0  
[18/Apr/2022 10:46:24] "GET /static/admin/fonts/Roboto-Bold-webf  
ont.woff HTTP/1.1" 304 0  
[18/Apr/2022 10:47:20] "GET / HTTP/1.1" 200 10697  
[18/Apr/2022 10:47:20] "GET /static/admin/css/fonts.css HTTP/1.1  
" 200 423  
[18/Apr/2022 10:47:20] "GET /static/admin/fonts/Roboto-Bold-webf  
ont.woff HTTP/1.1" 200 86184  
[18/Apr/2022 10:47:20] "GET /static/admin/fonts/Roboto-Light-web  
font.woff HTTP/1.1" 200 85692
```

Stop web server and exit

- CTRL -C
- ▶ Exit

```
[18/Apr/2022 10:46:24] "GET /static/admin/fonts/Roboto-Regular-w  
ebfont.woff HTTP/1.1" 304 0  
[18/Apr/2022 10:46:24] "GET /static/admin/fonts/Roboto-Bold-webf  
ont.woff HTTP/1.1" 304 0  
[18/Apr/2022 10:47:20] "GET / HTTP/1.1" 200 10697  
[18/Apr/2022 10:47:20] "GET /static/admin/css/fonts.css HTTP/1.1  
" 200 423  
[18/Apr/2022 10:47:20] "GET /static/admin/fonts/Roboto-Bold-webf  
ont.woff HTTP/1.1" 200 86184  
[18/Apr/2022 10:47:20] "GET /static/admin/fonts/Roboto-Light-web  
font.woff HTTP/1.1" 200 85692  
[18/Apr/2022 10:47:20] "GET /static/admin/fonts/Roboto-Regular-w  
ebfont.woff HTTP/1.1" 200 85876  
Not Found: /favicon.ico  
[18/Apr/2022 10:47:20] "GET /favicon.ico HTTP/1.1" 404 2112  
^C  
(project1)  
[project1-sAfKJubY] » exit ~c/d/project1  
» ~c/d/project1
```

Our working directory

```
» pwd ~c/django  
/Users/pwachira/cN334/django  
  
» tree ~c/django  
.  
└── project1  
    ├── Pipfile  
    ├── Pipfile.lock  
    ├── db.sqlite3  
    ├── manage.py  
    └── project1  
        ├── __init__.py  
        ├── asgi.py  
        ├── settings.py  
        ├── urls.py  
        └── wsgi.py  
  
2 directories, 9 files  
  
» █ ~c/django
```

Add and Commit project1

- ▶ git status
- ▶ git add project1

```
» git status                                     ~/C/django
On branch main
Your branch is up to date with 'origin/main'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    project1/

nothing added to commit but untracked files present (use "git add"
  to track)

» git add project1                           ~/C/django
```

Add and Commit project1 (ព័ត៌មាន)

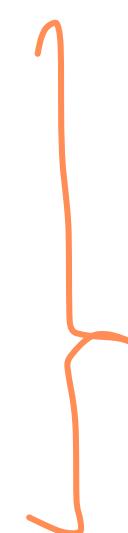
- ▶ git commit -m "Project1 first commit"

```
» git commit -m "Project1 first commit" ~/C/django
[main 609d20d] Project1 first commit
 8 files changed, 264 insertions(+)
  create mode 100644 project1/Pipfile
  create mode 100644 project1/Pipfile.lock
  create mode 100755 project1/manage.py
  create mode 100644 project1/project1/__init__.py
  create mode 100644 project1/project1/asgi.py
  create mode 100644 project1/project1/settings.py
  create mode 100644 project1/project1/urls.py
  create mode 100644 project1/project1/wsgi.py
```

CW: Create "project2"

At "django" directory

- ▶ `mkdir project2`
- ▶ `cd project2`
- ▶ `pipenv install django==3.2.13`
- ▶ `pipenv shell`
- ▶ `django-admin startproject project2 .`
- ▶ `python manage.py runserver`
- ▶ Git: Add and commit project2



Project2 result

```
(project2)
[project2-P0-maG1l] » pwd                                ~/c/d/project2
/Users/pwachira/cN334/django/project2
(project2)
[project2-P0-maG1l] » tree                               ~/c/d/project2
.
├── Pipfile
├── Pipfile.lock
├── db.sqlite3
└── manage.py
└── project2
    ├── __init__.py
    ├── asgi.py
    ├── settings.py
    ├── urls.py
    └── wsgi.py

1 directory, 9 files
(project2)
[project2-P0-maG1l] » █                                ~/c/d/project2
```

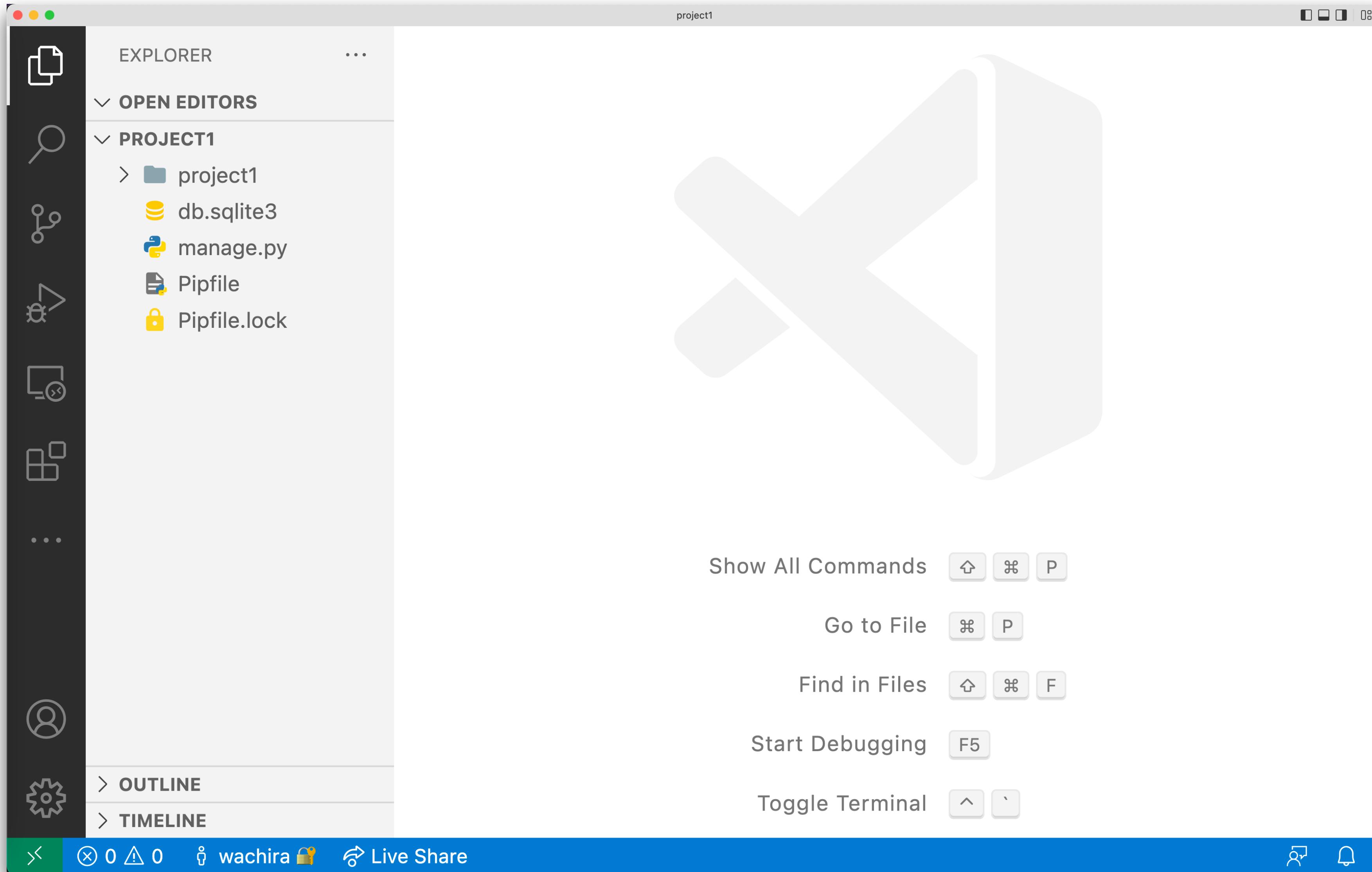
Git push

► git push

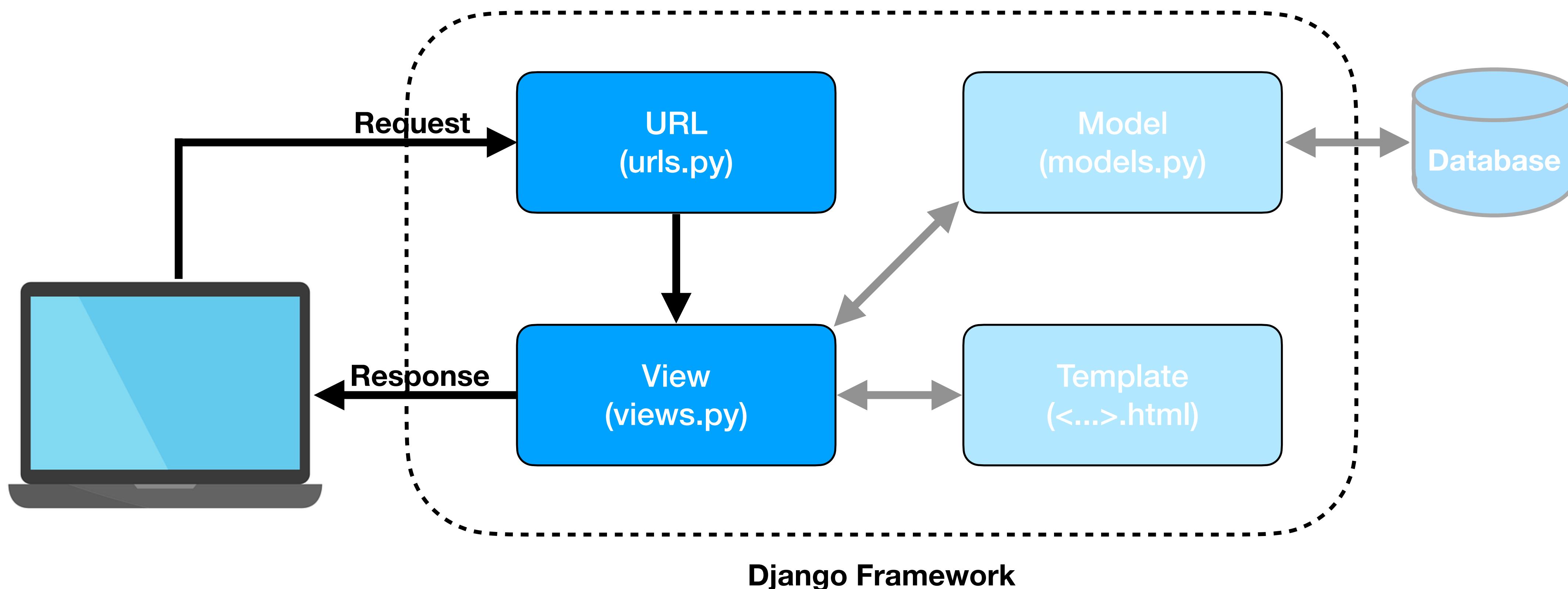
```
» git push                                ~/C/django
Enumerating objects: 22, done.
Counting objects: 100% (22/22), done.
Delta compression using up to 16 threads
Compressing objects: 100% (20/20), done.
Writing objects: 100% (21/21), 4.42 KiB | 4.42 MiB/s, done.
Total 21 (delta 7), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (7/7), done.
To https://github.com/CN334/django-learning-6210123456.git
  f9671e4..07db5a9  main -> main
```

```
» █                                ~/C/django
```

VS Code: Open project1 folder



การทำงานของ URL และ View



`http://www.domain.com/path`

สร้าง views.py

สร้างไฟล์ views.py และพิมพ์คำสั่งดังรูป

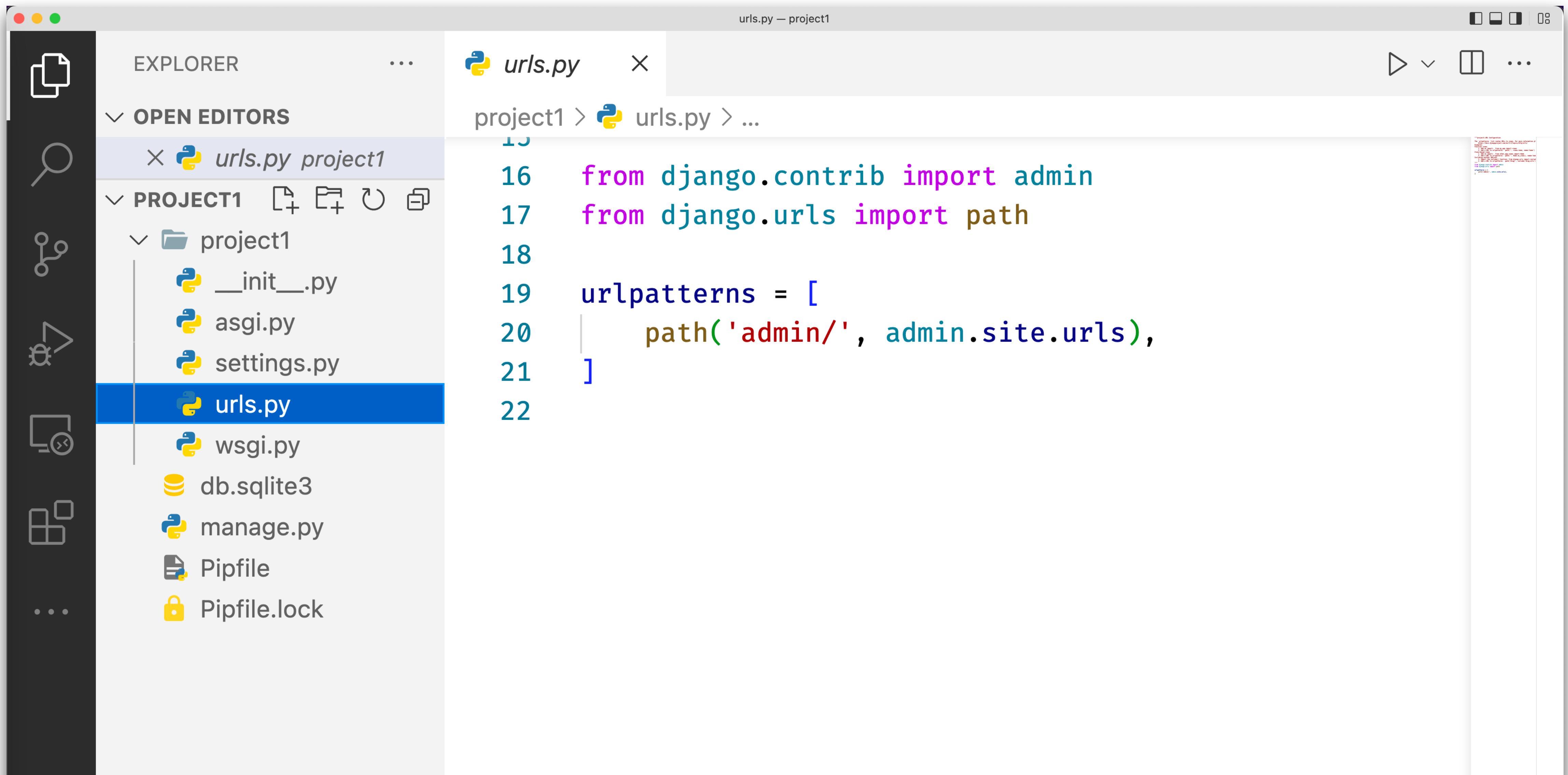
▶ `from django.http import HttpResponseRedirect`

The screenshot shows the Visual Studio Code interface with a Python project named 'PROJECT1'. The 'views.py' file is open in the editor. The code contains the following lines:

```
1 from django.http import HttpResponseRedirect
```

The 'OPEN EDITORS' section in the Explorer sidebar shows 'views.py' is the active file. The 'PROJECT1' folder contains several files: __init__.py, asgi.py, settings.py, urls.py, views.py (which is also selected in the sidebar), wsgi.py, db.sqlite3, and manage.py.

urls.py file



The screenshot shows the Visual Studio Code interface with a Django project named "project1". The Explorer sidebar on the left lists files and folders within the project structure. The "urls.py" file is selected and open in the main editor area. The code in the editor is:

```
from django.contrib import admin
from django.urls import path

urlpatterns = [
    path('admin/', admin.site.urls),
]
```

ทดลองสร้างหน้า home

แก้ไขไฟล์ urls.py

- comment ส่วนของ admin (ยังไม่ได้ใช้งาน)
- เพิ่มคำสั่ง
from . import views
- เพิ่ม path '' ใน urlpatterns list
path('', views.index),

ทดลองสร้างหน้า home (ต่อ)

The screenshot shows the Visual Studio Code interface with a Django project named 'project1'. The left sidebar displays the project structure and files:

- OPEN EDITORS: views.py (project1), urls.py (project1)
- PROJECT1: project1 (folder) containing __init__.py, asgi.py, settings.py, urls.py (highlighted), views.py, wsgi.py, db.sqlite3, manage.py, Pipfile, and Pipfile.lock.

The main editor window shows the contents of urls.py:

```
urls.py — project1
views.py urls.py ...
project1 > urls.py > ...

15 """
16 #from django.contrib import admin
17 from django.urls import path
18 from . import views
19
20 urlpatterns = [
21     #path('admin/', admin.site.urls),
22     path('', views.index),
23 ]
24
```

Lines 16, 17, and 18 are highlighted with a red dashed box, indicating they are the focus of the current step in the tutorial.

แก้ไขไฟล์ views.py

- เพิ่มฟังก์ชัน index() ดังรูปภาพ

The screenshot shows the Visual Studio Code interface with a Django project named 'project1'. The left sidebar displays the project structure under 'PROJECT1' and the files in the current editor ('views.py'). The code editor shows the following Python code:

```
from django.http import HttpResponse
def index(request):
    return HttpResponse("Hello World")
```

The code is numbered 1 through 6. Lines 3 and 4 are highlighted in red, indicating they are new or have been modified. A red dashed box surrounds the entire function definition from line 3 to line 5. Below the code, a URL link is provided:

<https://docs.djangoproject.com/en/4.0/topics/http/views/>

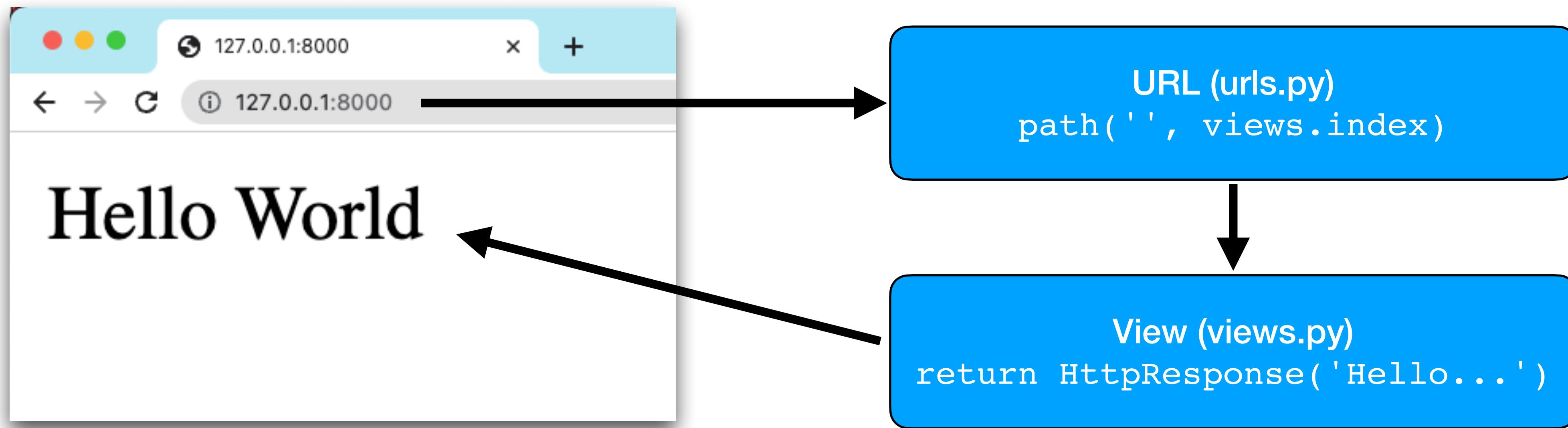
เปิด http://127.0.0.1:8000

- หากใน terminal ยังอยู่ที่ project2 ให้กด CTRL-C และพิมพ์ exit
- เข้าไปในไดเรกทอรีของ project1, activate virtual environment และรัน web server โดยใช้คำสั่ง
 - ▶ cd project1
 - ▶ pipenv shell
 - ▶ python manange.py runserver
- เปิด URL http://127.0.0.1:8000

ເປີດ http://127.0.0.1:8000 (ຕ້ອ)

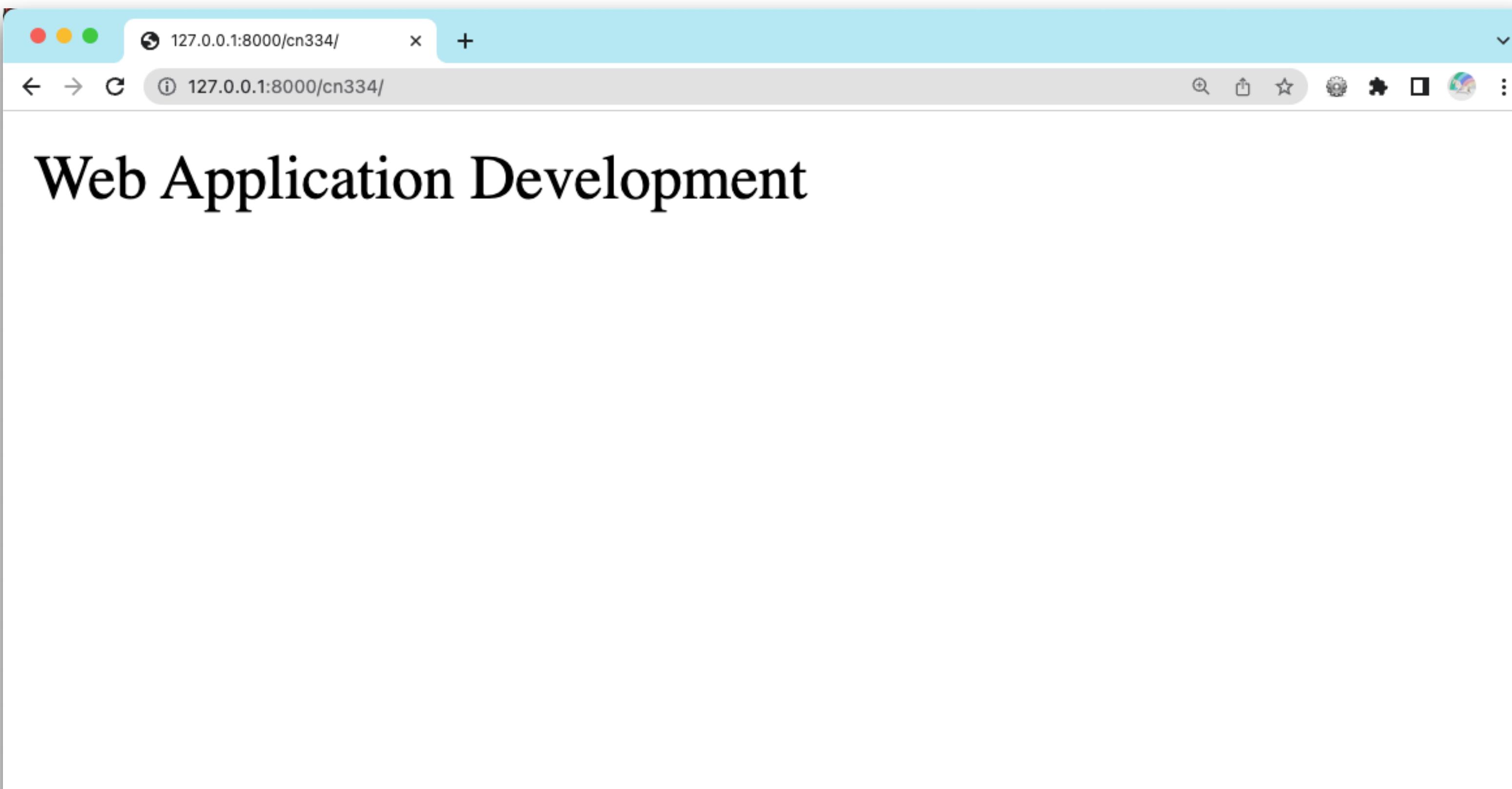


การทำงานของ urls.py และ views.py



CW: ทดลองสร้าง path เพิ่ม

- ให้ทดลองสร้าง path เพิ่มเติม โดยเมื่อเรียก URL
`http://127.0.0.1:8000/cn334`
จะปรากฏเป็นชื่อวิชาดังรูปด้านล่าง



Static Path

- http://127.0.0.1:8000/
- http://127.0.0.1:8000/ece/cn334/

```
urlpatterns = [                                urls.py
    #path('admin/', admin.site.urls),
    path('', views.index),
    path('ece/cn334/', views.ece)
]
```

```
def ece(request):
    return HttpResponse("Web Application Development")      views.py
```

Path Parameter

- URL - `http://127.0.0.1:8000/articles/2022/04/13`
- Path converters: `<converter:parameter_name>`
 - **int** - Matches zero or any positive integer. Returns an int.
 - **str** - Matches any non-empty string, excluding the path separator, '/'. This is the default if a converter isn't included in the expression.
 - **path** - Matches any non-empty string, including the path separator, '/'. This allows you to match against a complete URL path rather than a segment of a URL path as with str.
 - **slug** - Matches any slug string consisting of ASCII letters or numbers, plus the hyphen and underscore characters. For example, *building-your-1st-django-site*.

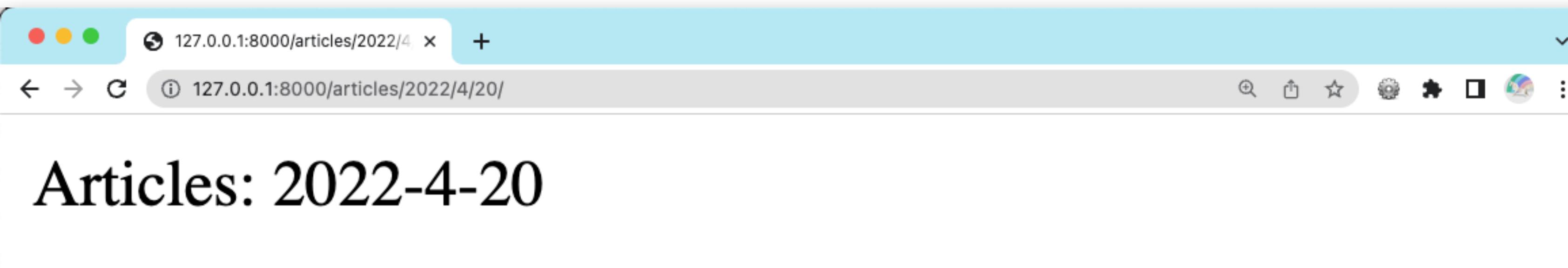
- URL - <http://127.0.0.1:8000/articles/2022/04/13>

```
urlpatterns = [  
    #path('admin/', admin.site.urls),  
    path('', views.index),  
    path('ece/cn334/', views.ece),  
    path('articles/<int:year>/<int:month>/<int:day>/', views.articles),  
]
```

urls.py

```
def articles(request, year, month, day):  
    return HttpResponse(f"Articles: {year}-{month}-{day}")
```

views.py



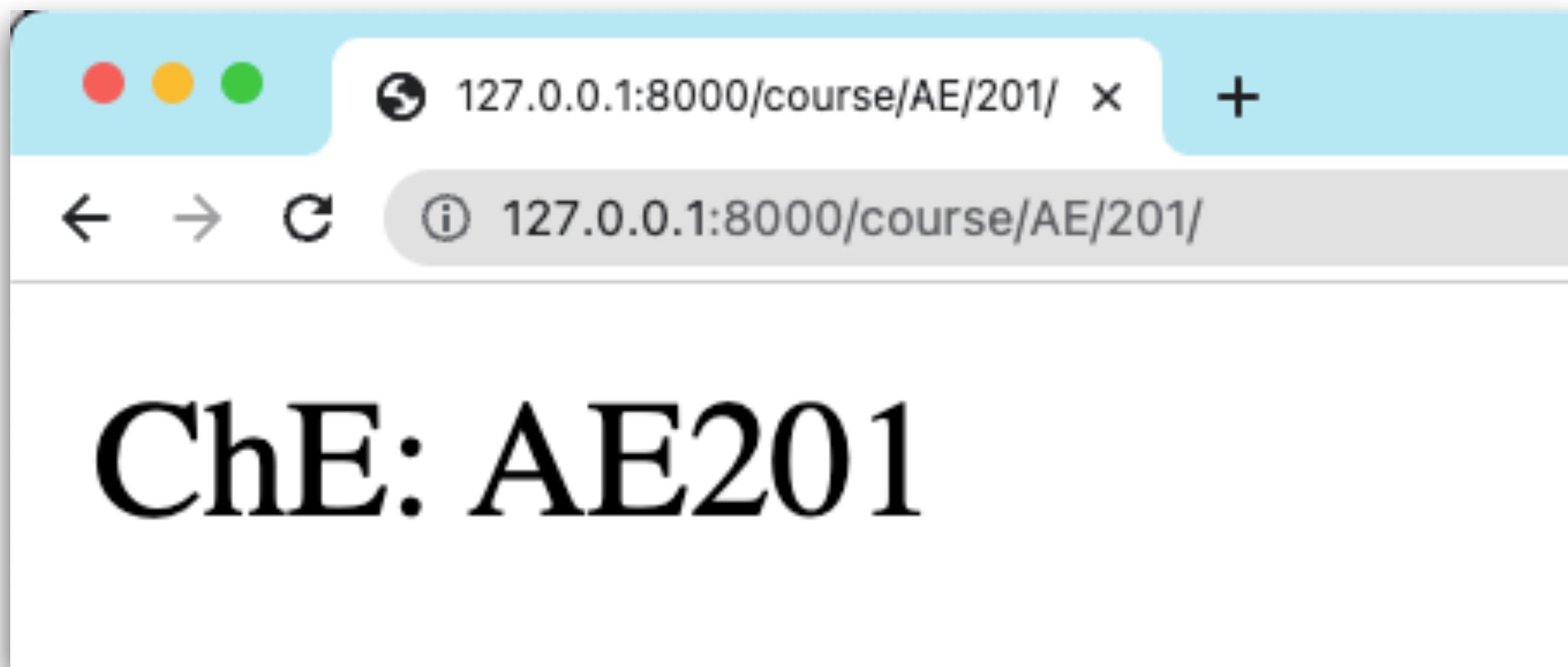
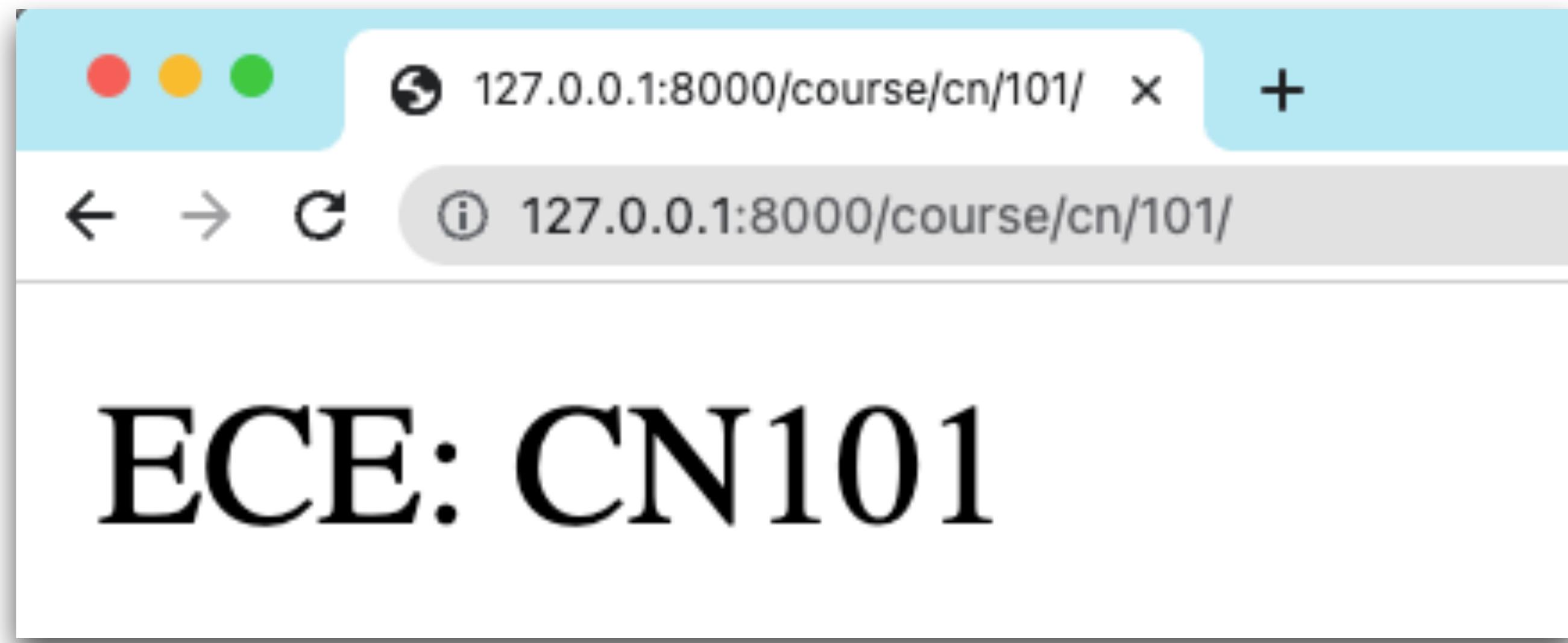
- URL - http://127.0.0.1:8000/course/cn/101

```
urlpatterns = [  
    #path('admin/', admin.site.urls),  
    path('', views.index),  
    path('ece/cn334/', views.ece),  
    path('articles/<int:year>/<int:month>/<int:day>/' , views.articles),  
    path('course/<str:dept>/<int:subject_id>/' , views.course),  
]
```

urls.py

```
def course(request, dept, subject_id):  
    if dept.upper() == 'CN':  
        dept_name = 'ECE'  
    elif dept.upper() == 'AE':  
        dept_name = 'ChE'  
    subject_name = dept.upper() + str(subject_id)  
    return HttpResponse(f"{dept_name}: {subject_name}")
```

views.py



Query String

- URL: <http://127.0.0.1:8000/search/?q=python&id=123>

```
urlpatterns = [  
    #path('admin/', admin.site.urls),  
    path('', views.index),  
    path('search/', views.search),  
]
```

Query String (ຕ่อ)

- URL: `http://127.0.0.1:8000/search/?q=python&id=123`
- อ่านค่า query string โดยใช้ **GET method**
`request.GET.get('parameter_name, default_value')`
- `parameter_name` ชื่อ parameter ใน query string
- `default_value` ค่าที่จะถูกกำหนดให้ parameter ถ้าไม่ได้กำหนดพารามิเตอร์นั้นใน query string

Query String (ព័ត៌មាន)

- URL: <http://127.0.0.1:8000/search/?q=python&id=123>

```
views.py
def search(request):
    q = request.GET.get('q', 'django')
    id = request.GET.get('id', '1')
    return HttpResponse(f"q = {q} <br> id = {id}")
```

