Microsoft

Git yourself a leg up
for student projects

Renee Noble
Cloud Advocate

@noblerenee
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Hi I'm Renee!

I like many things and have many jobs!

Especially if they = Tech + Education + Community

I’m a Cloud Advocate at…

Microsoft

I get to tell cool people how to do cool things with tech!

…like I’ll do now!

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But it doesn't stop there!

I also run a business

And a charity

And teach!

I'm all about Tech + Education + Community

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Today I've got some tech for your teaching and your community!

In this session

- Git: Friend of Foe
- Go shopping with Git
- GitHub tools for better projects

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Many tools, one solution!

We'll cover a lot of tech today, but it all comes together!

GitHub
GitHub Pages
GitHub Templates
Codespaces
Copilot
GitHub Actions

Git: Friend of Foe?

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Do you use Git/Github?

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Did you find it tricky to learn git at the start?

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Do you *want* to teach Git to students?

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Do you think teaching Git to students is hard?

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My own Git journey

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Let's take *Git* from the top!

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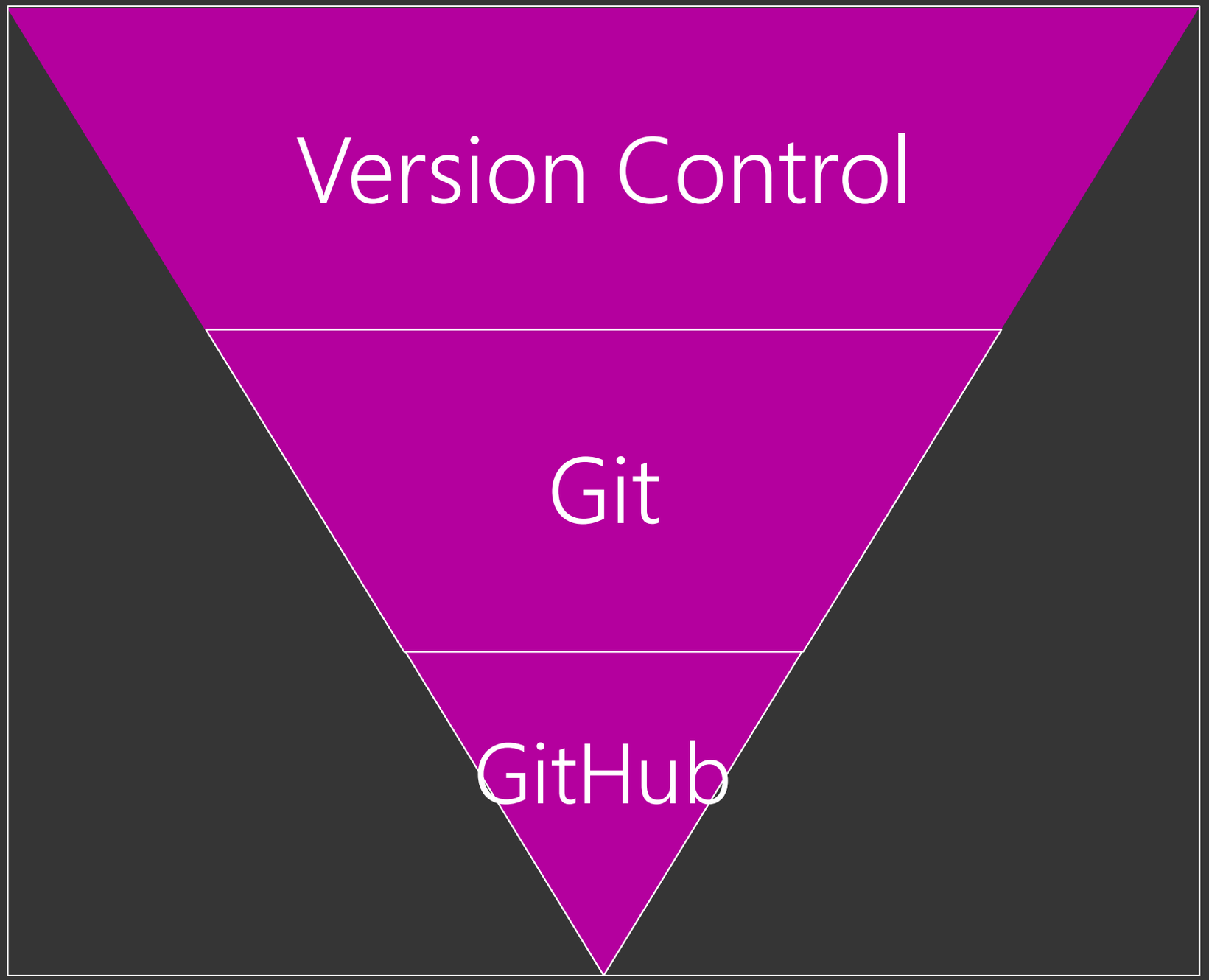
Let's talk layers!



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Version Control

Systems that…

make sure your files don't look like **this→**

Includes ways to back up your files online, compare code, and more.

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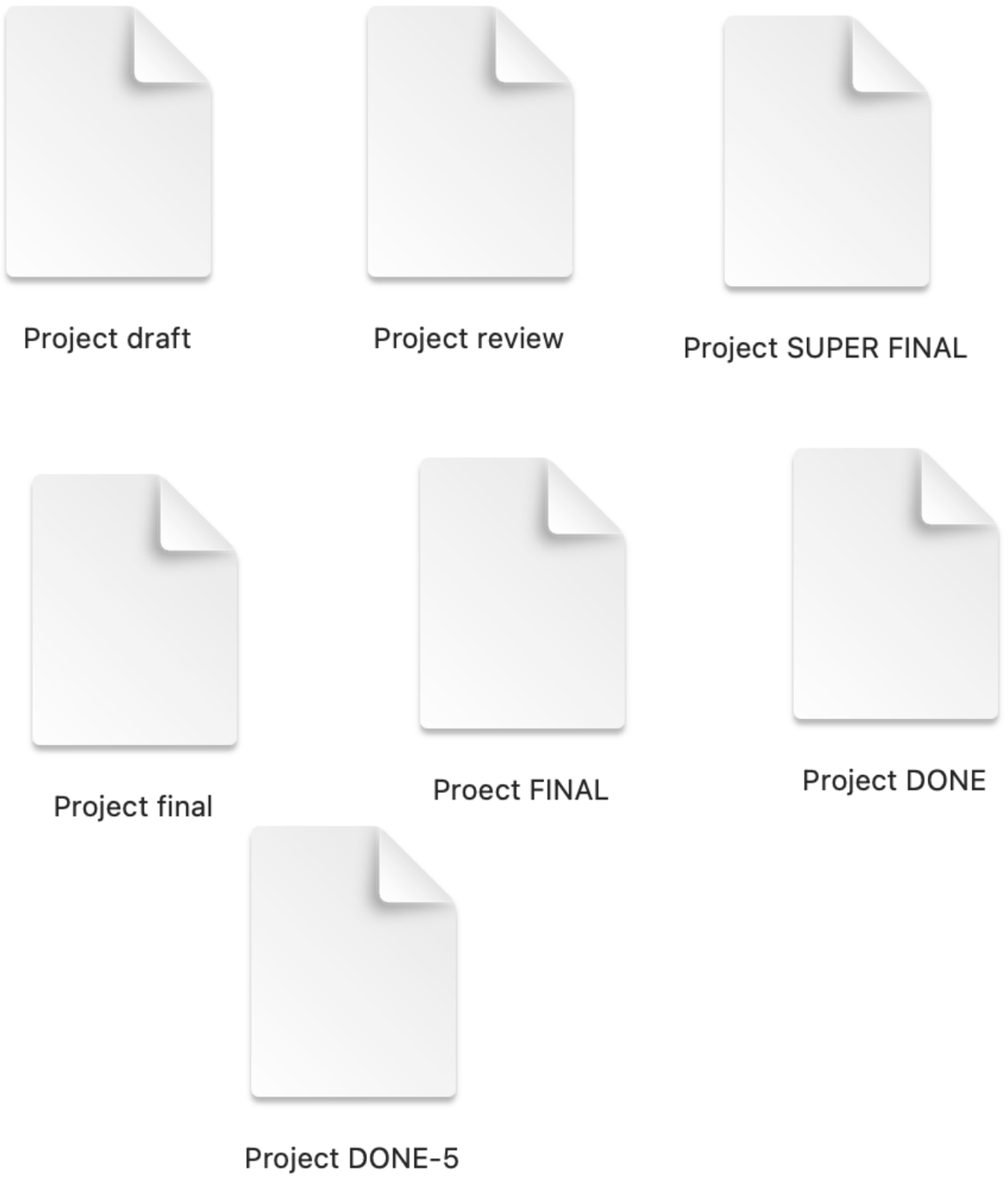

Git

One implementation of version control

- Most common
- Uses branches
- Lots of integrations
- Lots of platforms that support it

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Git – How?

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/css/bootstrap.min.css"
        integrity="sha384-TX8t27EcRE3e/ihU7zmQxVncDAy5uIKz4rEkgIXeMed4M0jlfIDPvg6uqKI2xXr2" crossorigin="anonymous">

    <title>Translator</title>
</head>
<body>
    <div class="container">
        <h1>Translation service</h1>
        <div>Enter the text you wish to translate, choose the language, and click Translate!</div>
        <div>
            <form method="POST">
                <div class="form-group">
                    <textarea name="text" cols="20" rows="10" class="form-control"></textarea>
                </div>
                <div class="form-group">
                    <label for="language">Language:</label>
                    <select name="language" class="form-control">
                        <option value="en">English</option>
                        <option value="it">Italian</option>
                        <option value="ja">Japanese</option>
                        <option value="ru">Russian</option>
                        <option value="de">German</option>
                    </select>
                </div>
                <div>
                    <button type="submit" class="btn btn-success">Translate!</button>




                </div>
            </form>
        </div>
    </div>
</body>
</html>
```

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/css/bootstrap.min.css"
        integrity="sha384-TX8t27EcRE3e/ihU7zmQxVncDAy5uIKz4rEkgIXeMed4M0jlfIDPvg6uqKI2xXr2" crossorigin="anonymous">
    <link rel="stylesheet" href="../static/style.css">
    <title>Translator</title>
</head>
<body>
    <div class="container">
        <h1>Write a letter to your penpal in your own language!</h1>
        <div>Enter the text you wish to translate, choose the language, and click Translate!</div>
        <div id="text-div">
            <form method="POST">
                <div id="submit-div">
                <div class="form-group inline-form">


                    <label for="language">Language:</label>
                    <select name="language" class="form-control">
                        <option value="en">English</option>
                        <option value="it">Italian</option>
                        <option value="ja">Japanese</option>
                        <option value="ru">Russian</option>
                        <option value="de">German</option>
                    </select>
                </div>
                <div class="inline-form">
                    <button type="submit" class="btn btn-success">Translate!</button>
                </div>
                </div>
                <div class="form-group" id="text-field">
                    <textarea id="textbox" name="text" cols="20" rows="10" class="form-control"></textarea>
                </div>
            </form>
        </div>
    </div>
</body>
</html>
```

GitHub

A platform that supports Git projects

- Connects to your local files, to back them up online
- Make teams to share files/projects
- Tools work with others
- Tools to look at your code
- Integrates with other platforms

How can students understand all of this???

It's time for a shopping analogy!

Let's learn:

- Add
- Commit
- Push

Git == shopping

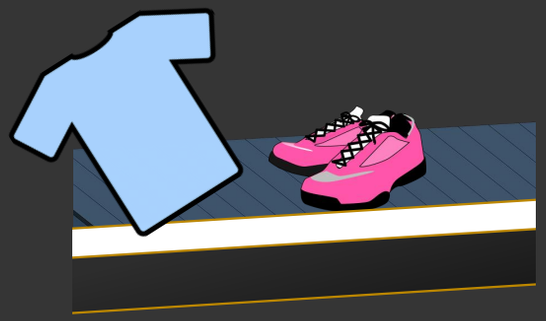
Code Add Commit Push

Git == shopping

Code Add Commit Push

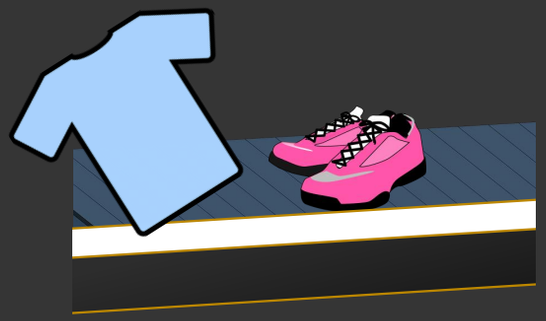
Git == shopping

Code Add Commit Push



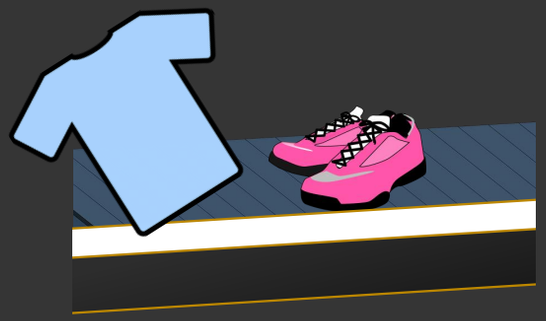
Git == shopping

Code Add Commit Push



Git == shopping

Code Add Commit Push



Step 1 – Browse (code + save)

Your shopping trip starts with …shopping!

Find things and put it in your trolley.

This is equivalent to you doing your coding in your projects. Git keeps track of the things you change.

Step 1 – Browse (code + save)

You can put things back on the shelf any time.

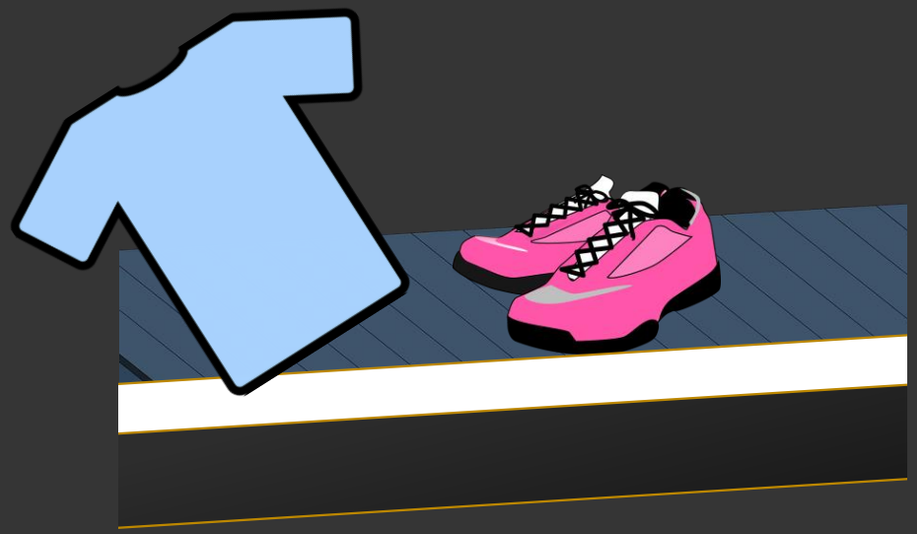
Do your **coding** like you normally do. Adding, removing, whatever you like.

Putting something in your trolley is like **save**.

Step 2: At the register (add)

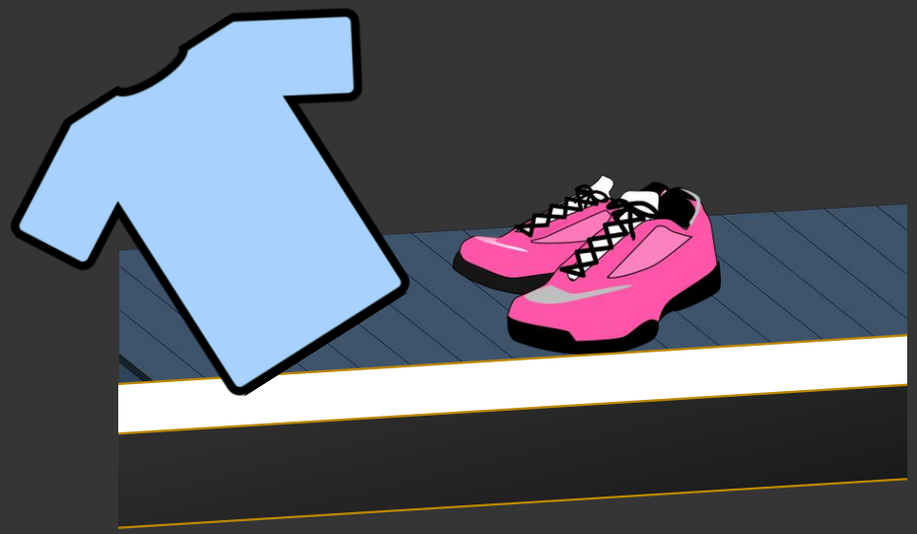
When you have some items you definitely want, you go to the register.

Put them on the conveyer belt!



Step 2: At the register (add)

You don’t have to buy all of your items at once!

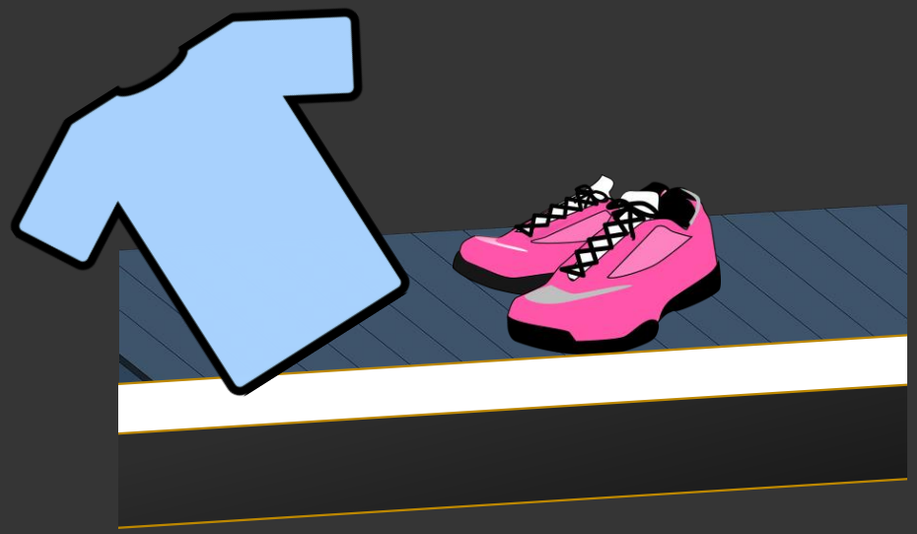


You can keep some in your trolley for later.
(Or to buy in a second transaction)

Step 2: At the register (add)

This step is like

git add



You can stage all the files (or parts of tiles) you want to commit in the next step.

Step 3 – Purchase (Commit)

When you've put through the items you want to buy, it's time to purchase!

Before you purchase it's easy to say "actually no thanks to … the shoes"

Step 3 – Purchase (Commit)

Completing the purchase creates a record/receipt.

If you need to undo the transaction you can.

Step 3 – Purchase (Commit)

This step is like

git commit

You add the changes you made to the logs with:

```
git commit –m
“<description of my
commit>”
```

Step 4 – Instagram (Push)

When you want the rest of the world to know about your shopping trip… post it to social media!

Step 4 – Instagram (Push)

When you want the rest of the world to know about your shopping trip… post it to social media!

Wait until you've finished your shopping trip and post it all as one?

Step 4 – Instagram (Push)

This step is like

git push

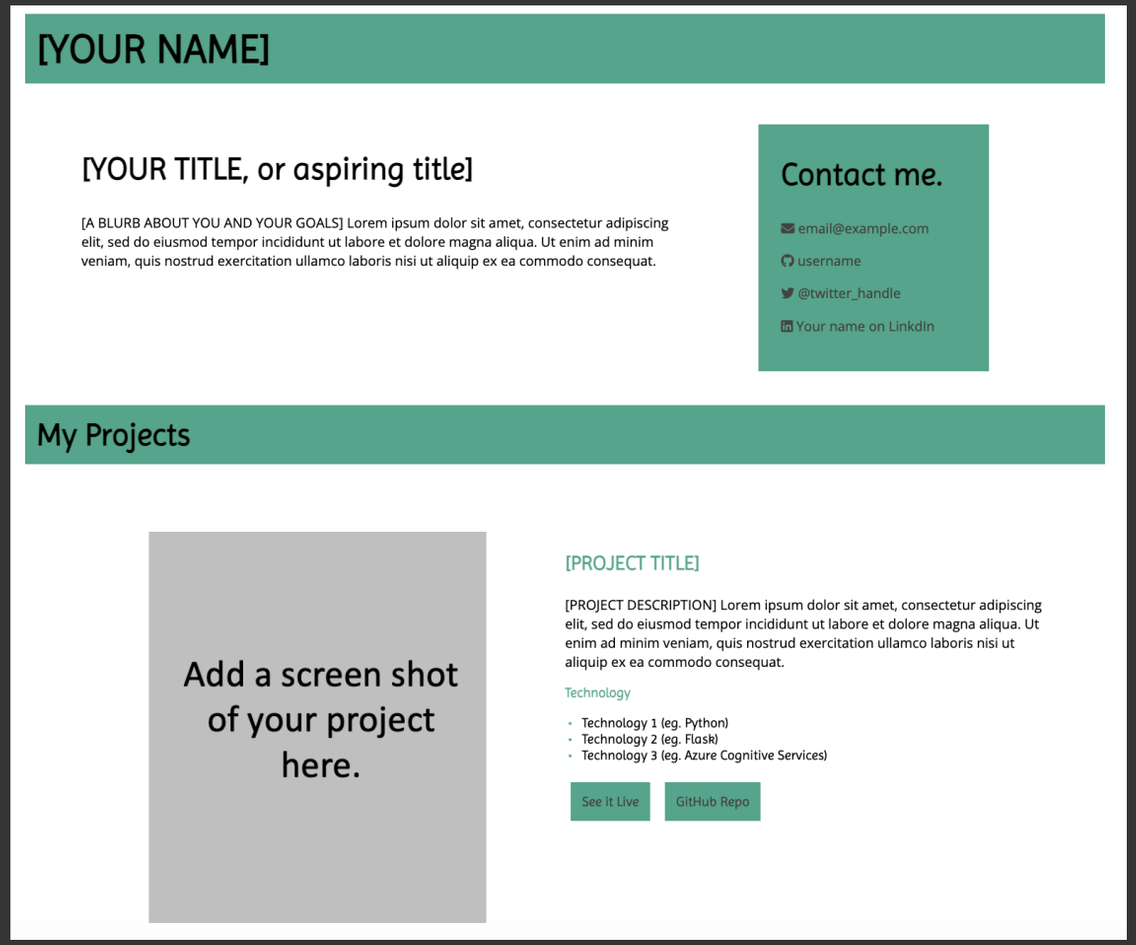
If you're working alone, (no one follows your socials), not much can go wrong & your stuff is backed up

If you're working in a team, going back might be tricky.

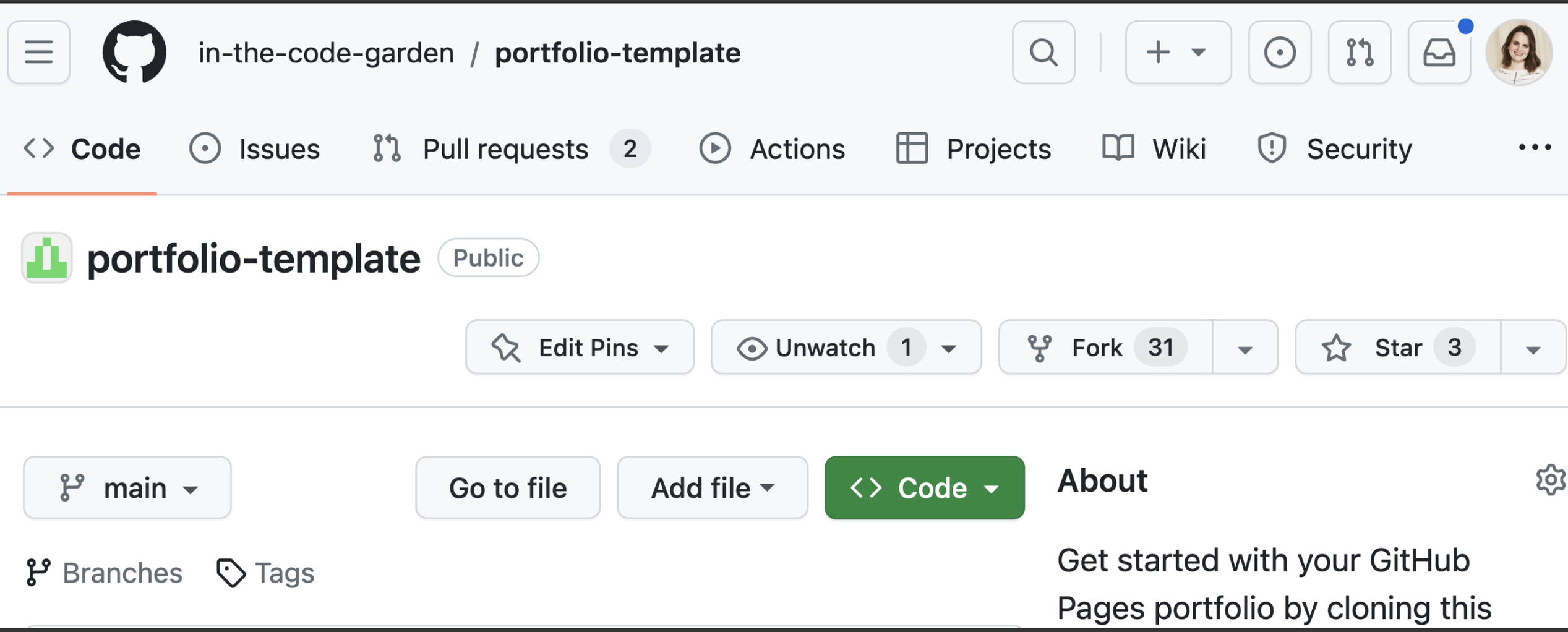
So now you know Git? What next?

Git is just the start for more projects!

I love storing stream code on GitHub, but also storing templates* to follow along with during streams.



Lots of engagement!



index.html — portfolio-morning

https://github.dev/reneenoble/portfolio-morning

index.html

```
<html>

    <head>
        <link href="style.css" r
        <title>Renee Noble - Por
        <link rel="stylesheet" h
        <link rel="preconnect" h
        <link rel="preconnect" h
        <link href="https://font
    </head>

    <body>
```

style.css

```
body {
    font-family: 'Imprima', sans

    font-size: 12px;
    max-width: 960px;
    margin: auto;
}

#header-main {
    display: grid;
    grid-template-columns: 70% 3
    margin-top: 3em;
}
```

CodeSwing

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Technology

- Python
- Flask
- Azure App Service
- Azure Blob

See it Live | GitHub Repo

Langauge Translation Web App

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Technology

- Python
- Flask
- MatplotLib
- Azure Machine Learning Studio
- NLP

GitHub Repo

GitHub | main | 0 0 | Ln 1, Col 1 | Spaces: 4 | UTF-8 | LF | HTML | Layout: U.S.

Video of final github page

My stream viewers loved it!

What about students?

My stream viewers loved it!

What about students?

It was met with some confusion…

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My stream viewers loved it!

What about students?

It was met with some confusion…

But with some new tools, there's a new way!

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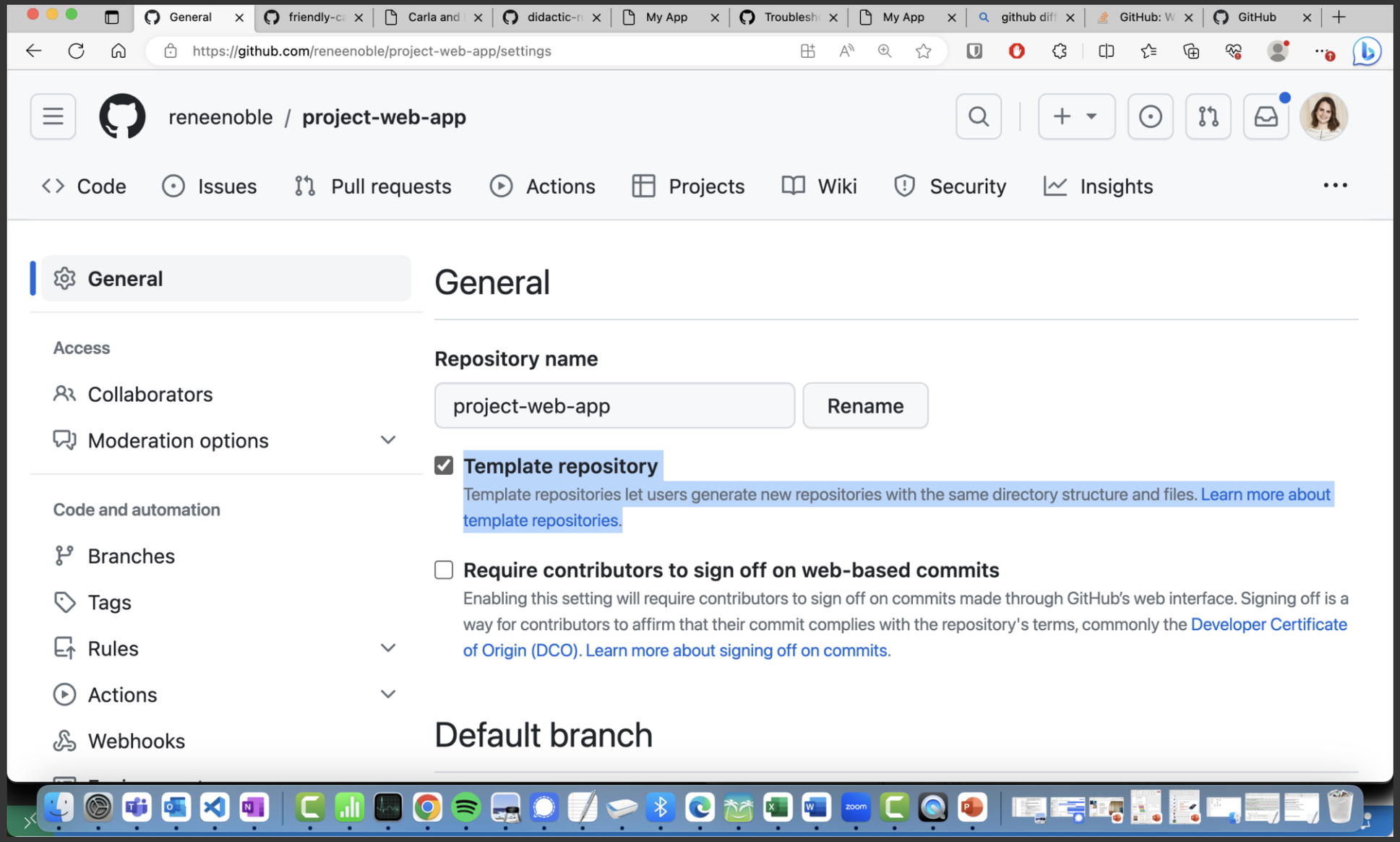
An easy little win!

GitHub templates

Lose the commit history!

Loose the upstream concerns

"Fork" you're own



Let's make a better project scaffold!

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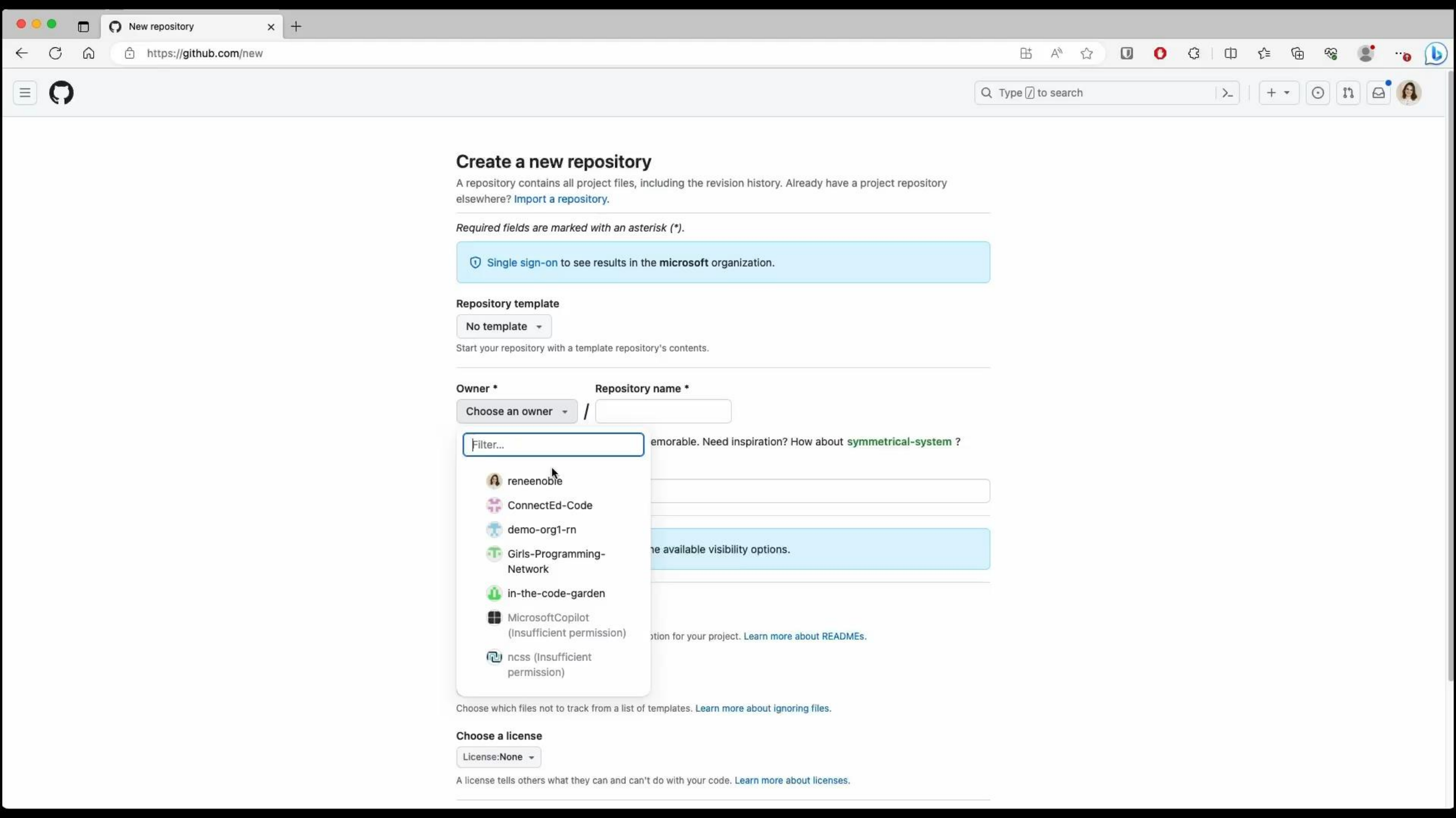
We'll use it all!

- GitHub
- GitHub Templates
- Codespaces
- Copilot (for us!)
- GitHub Actions

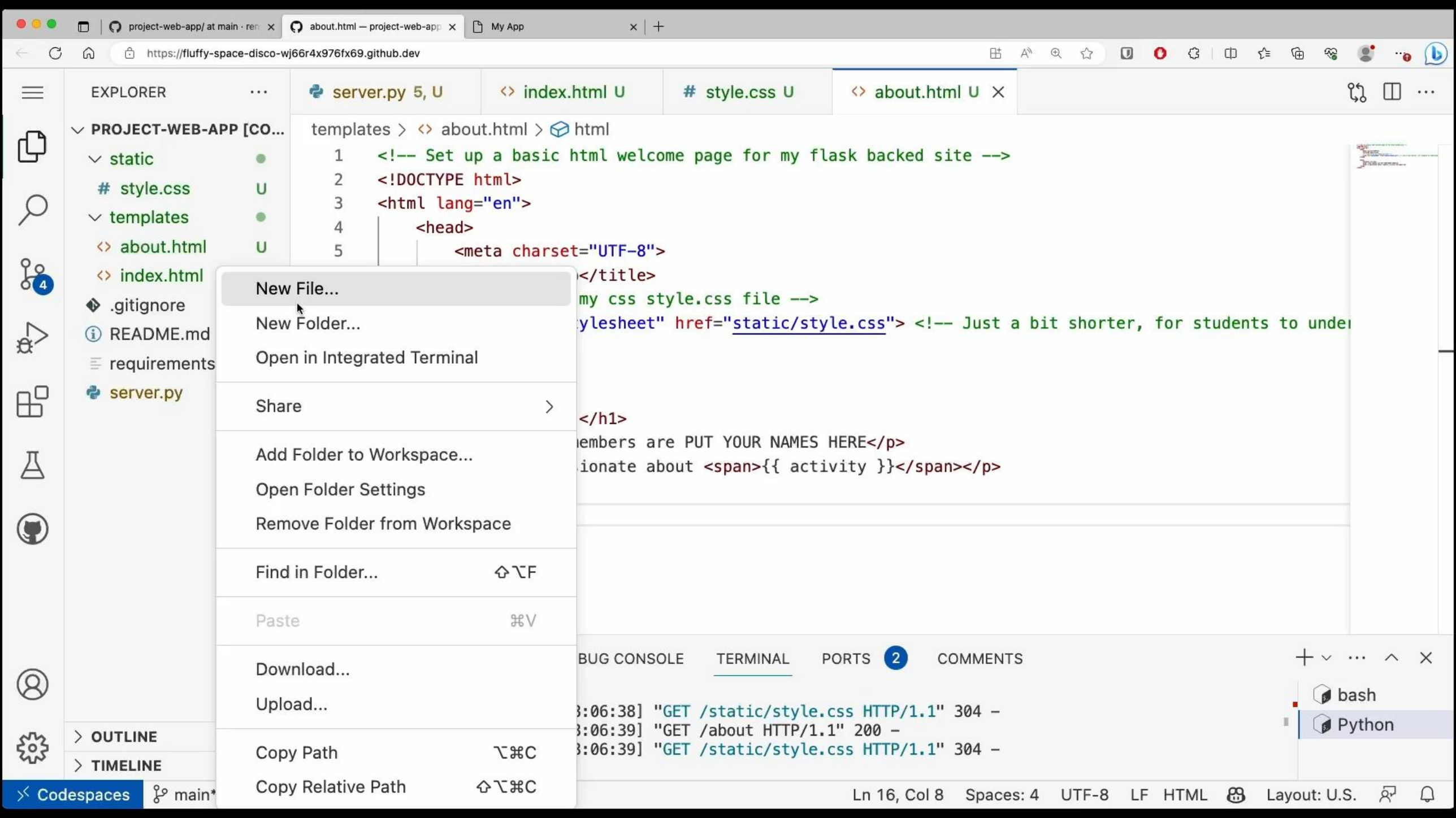
Speed run making a flask app!

Thanks to Codespaces and Copilot!


New repository
https://github.com/new
Type / to search
Create a new repository
A repository contains all project files, including the revision history. Already have a project repository elsewhere? Import a repository.
Required fields are marked with an asterisk (*).
Single sign-on to see results in the microsoft organization.
Repository template
No template
Start your repository with a template repository's contents.
Owner *
Repository name *
Choose an owner
/
Filter...
reneenoble
ConnectED-Code
demo-org1-rn
Girls-Programming-Network
in-the-code-garden
MicrosoftCopilot (Insufficient permission)
ncss (Insufficient permission)
emorable. Need inspiration? How about symmetrical-system ?
e available visibility options.
tion for your project. Learn more about READMEs.
Choose which files not to track from a list of templates. Learn more about ignoring files.
Choose a license
License:None
A license tells others what they can and can't do with your code. Learn more about licenses.

Adding testing with ease!

Thanks to Copilot, VS Code Flask tools, and GitHub Actions


project-web-app/ at main · ren
about.html — project-web-app
My App
https://fluffy-space-disco-wj66r4x976fx69.github.dev
EXPLORER
server.py 5, U
index.html U
style.css U
about.html U
templates > about.html > html
PROJECT-WEB-APP [CO...
static
style.css U
templates
about.html U
index.html
.gitignore
README.md
requirements
server.py
1 <!-- Set up a basic html welcome page for my flask backed site -->
2 <!DOCTYPE html>
3 <html lang="en">
4 <head>
5 <meta charset="UTF-8">
</title>
my css style.css file -->
ylesheet" href="static/style.css"> <!-- Just a bit shorter, for students to unde
</h1>
embers are PUT YOUR NAMES HERE</p>
ionate about {{ activity }}</p>
New File...
New Folder...
Open in Integrated Terminal
Share
Add Folder to Workspace...
Open Folder Settings
Remove Folder from Workspace
Find in Folder... ⇧⌥F
Paste ⌘V
Download...
Upload...
Copy Path ⌥⌘C
Copy Relative Path ⇧⌥⌘C
BUG CONSOLE
TERMINAL
PORTS 2
COMMENTS
3:06:38] "GET /static/style.css HTTP/1.1" 304 -
3:06:39] "GET /about HTTP/1.1" 200 -
3:06:39] "GET /static/style.css HTTP/1.1" 304 -
bash
Python
OUTLINE
TIMELINE
Codespaces
main*
Ln 16, Col 8
Spaces: 4
UTF-8
LF
HTML
Layout: U.S.

How your *students* will see it in action

Thanks to GitHub templates

https://github.com/reneenoble/project-web-app

InPrivate

reneenoble / project-web-app

Type / to search

Code Issues Pull requests Actions Projects Security Insights

project-web-app

Public template

Watch 1 Fork 0 Star 0

main Go to file Add file Code Use this template

reneenoble Create python-app.yml 13d4062 yesterday 7 commits

.github/workflows	Create python-app.yml	yesterday
.vscode	Create tests for helper functions	yesterday
static	base website	2 days ago
templates	base website	2 days ago
.gitignore	Initial commit	2 days ago
README.md	Update README.md	2 days ago
helper_functions.py	Stubs for helper functions	yesterday
requirements.txt	Create tests for helper functions	yesterday
server.py	base website	2 days ago
test_helper_functions.py	Create tests for helper functions	yesterday

About

a template to build your web app from for your assignment

Readme

Activity

0 stars

1 watching

0 forks

Report repository

Releases

No releases published

Packages

Take Aways

Git, GitHub and many tools…

are friend to you and your students!

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reneenoble.com

Take Aways

Git doesn't have to seem so scary...

if you treat it like a shopping trip!

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Take Aways

Just a little git set up…

Can ***git*** you and your students a leg up in the classroom!

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More stuff for you and your students!

Check out my website for…

Aka.ms/renee-pycon2023

- A Cloud Skills Challenge
- Videos on Git, Python, and web dev
- Links to Imagine Cup and Imagine Cup Junior
- Links to Microsoft Learn Student Ambassadors
- Links to Founders Hub

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reneenoble.com

Discovering Templates

- Main topic 1: size 36pt
  - Size 28pt for second level
    - Size 24pt for third level
      - Size 22pt for fourth level
        - Size 22 for fifth level

Discovering Templates

- Main topic 1: size 36pt
  - Size 28pt for second level
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Discovering Templates

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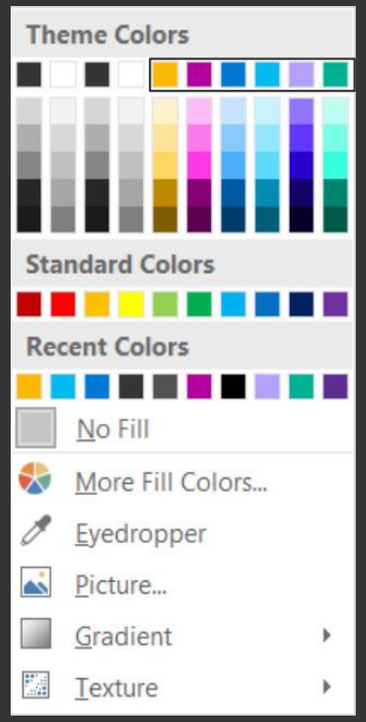
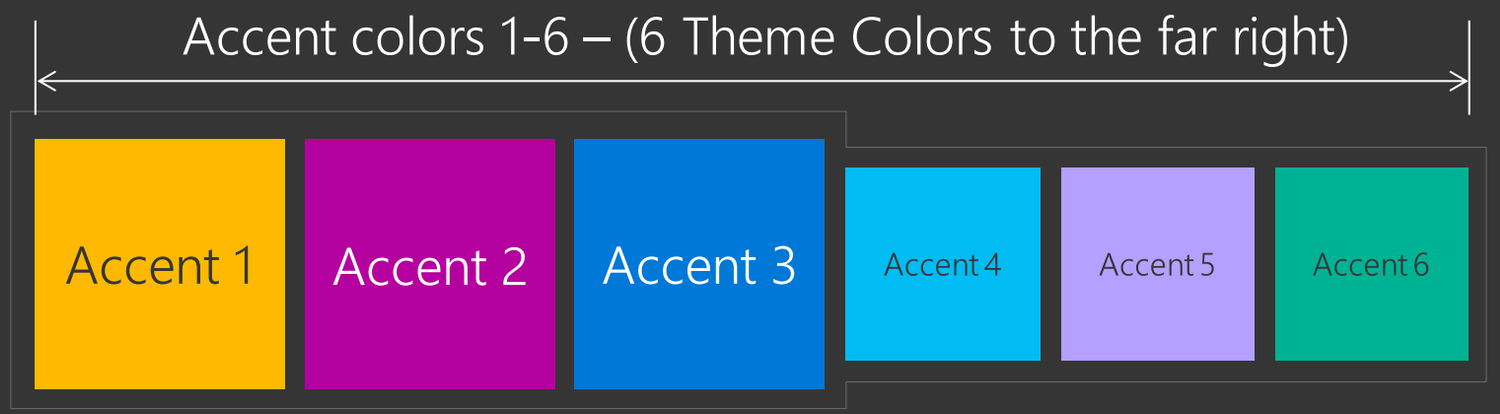
        - Size 22 for fifth level

Slide palette info

The PowerPoint palette for this template has been built for you and is shown below. Avoid using too many colors in your presentation.





Use **Accent 1** as the main accent color. Use **Accent 2** and **Accent 3** when additional colors are needed.

Use **Accents 4-6** sparingly – only when more colors are necessary.

“Don't believe everything you've seen on the internet.”

-Abraham Lincoln

Bullet points layout with subtitle

Subtitle is smaller in the same text block

- Example of a bulleted slide with a subhead
  - Set the slide title to “Sentence case”
  - Set subheads to “Sentence case”
- Hyperlink style
  - www.microsoft.com

Sample content slide 1

Lorem ipsum dolor

Sed ut perspiciatis unde omnis iste nat error sit voluptatem accusantium aperiam, eaque ipsa quae inventore veritatis et quasi architecto beatae.

Sit amet consectetur

Sed ut perspiciatis unde omnis iste nat error sit voluptatem accusantium aperiam, eaque ipsa quae inventore veritatis et quasi architecto beatae.

Sample content slide 2

Lorem ipsum dolor sit amet, consectetur adipiscing elit do

Sed ut dolor sit amet, consectetur adipiscing elit do

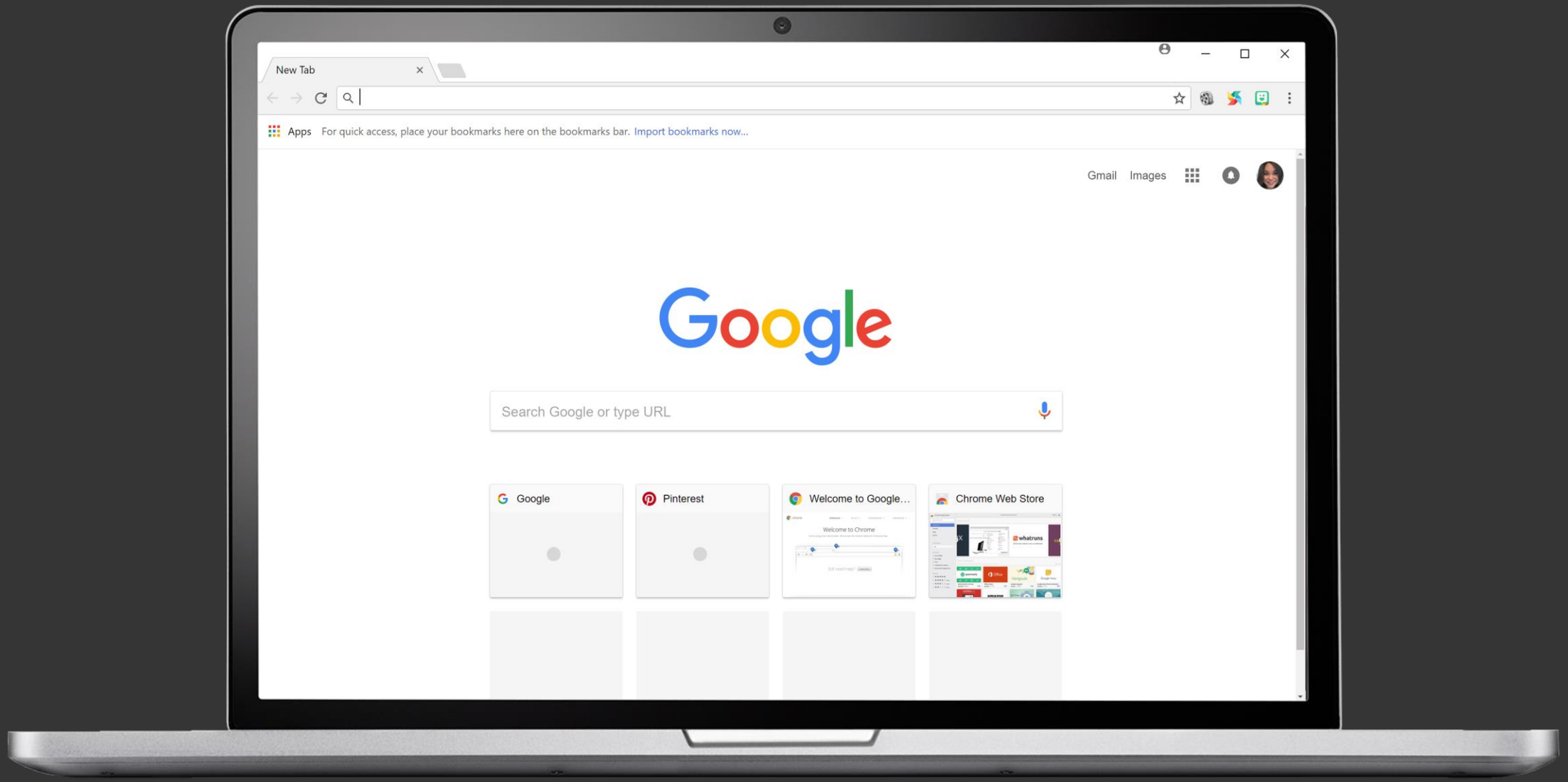
Et quasi dolor sit amet, consectetur adipiscing elit do

Vel illum dolor sit amet, consectetur adipiscing elit do

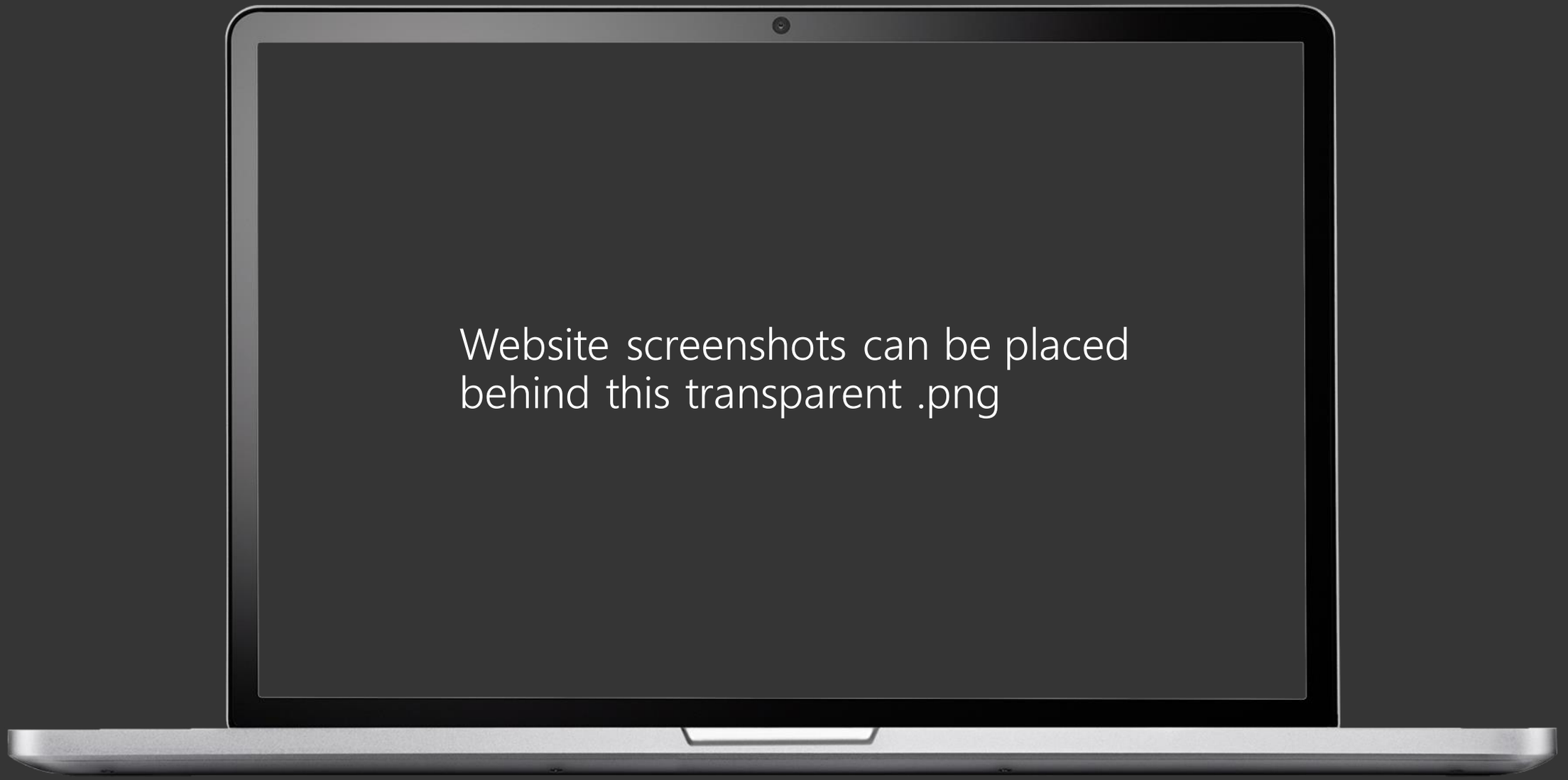
Sample mobile app slide

App screenshots can be placed behind these transparent .pngs

Sample website slide (Google Chrome)

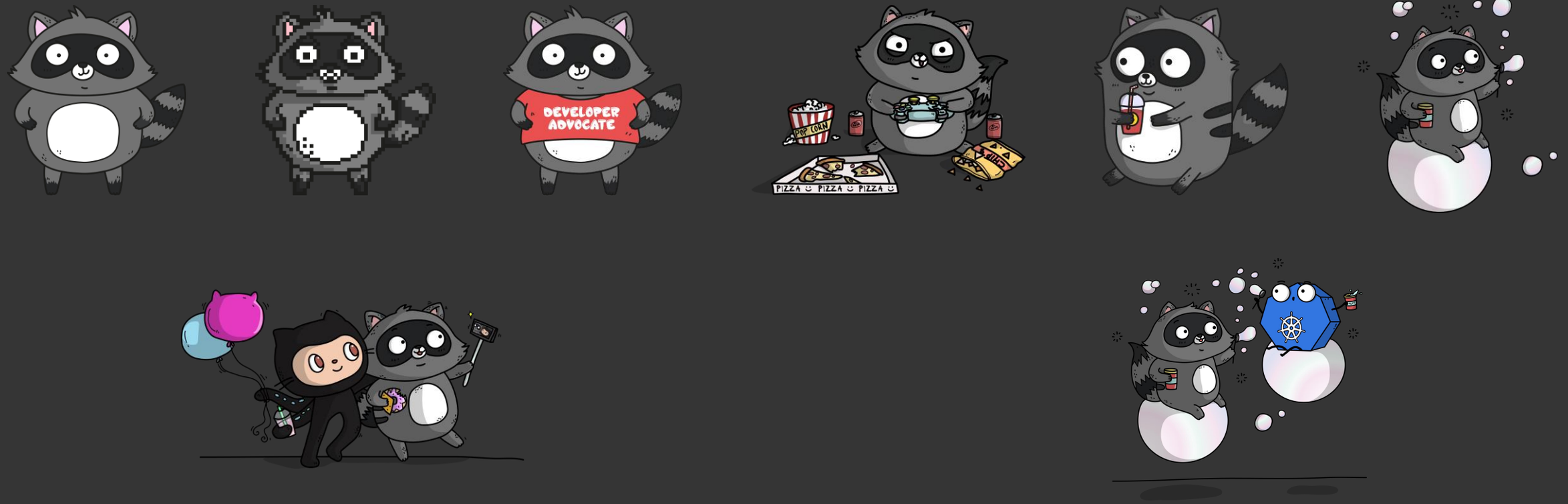


Sample website slide (blank)

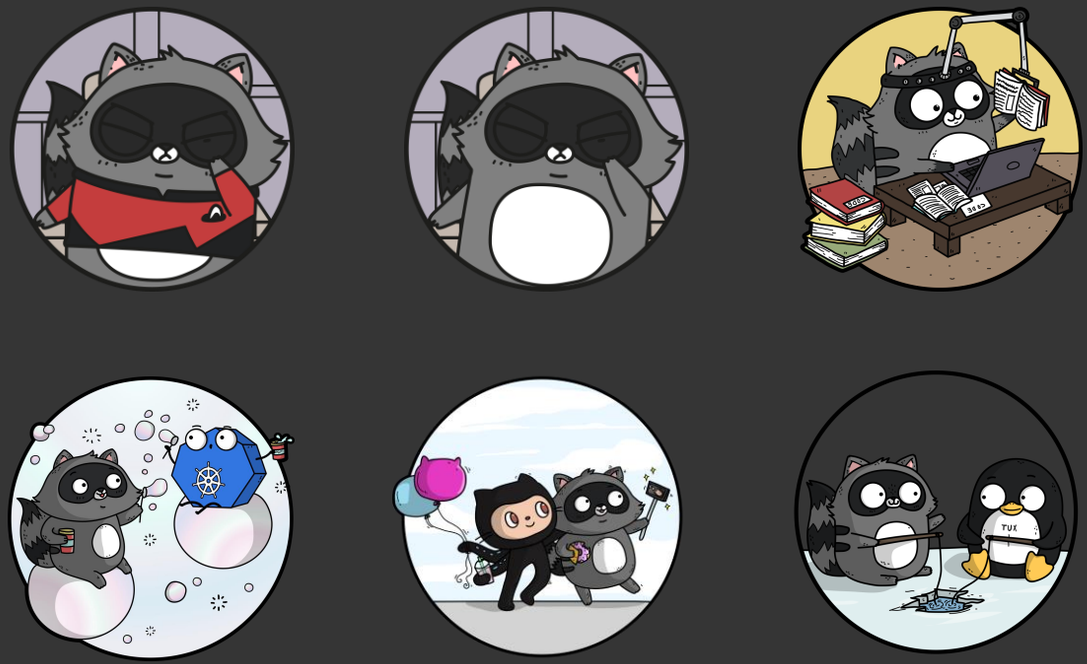


Icon library

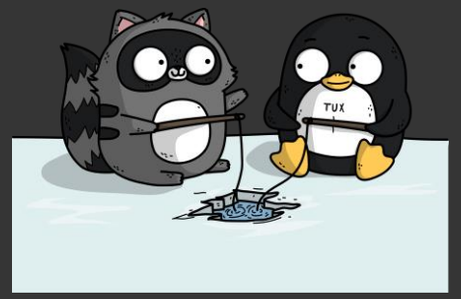
Bit illustration library



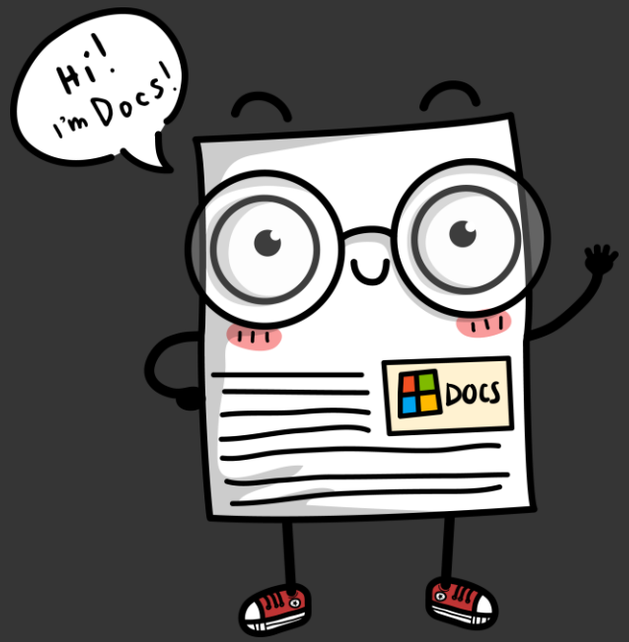
Bit illustration library

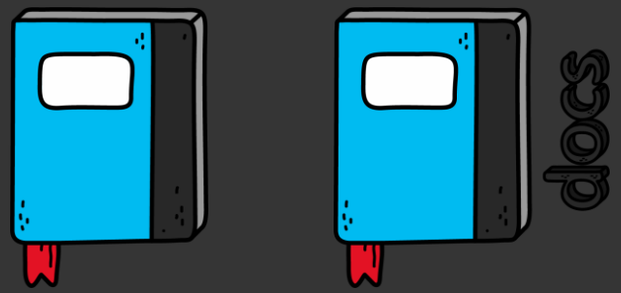


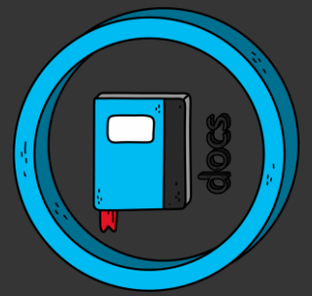
Bit illustration library



Docs







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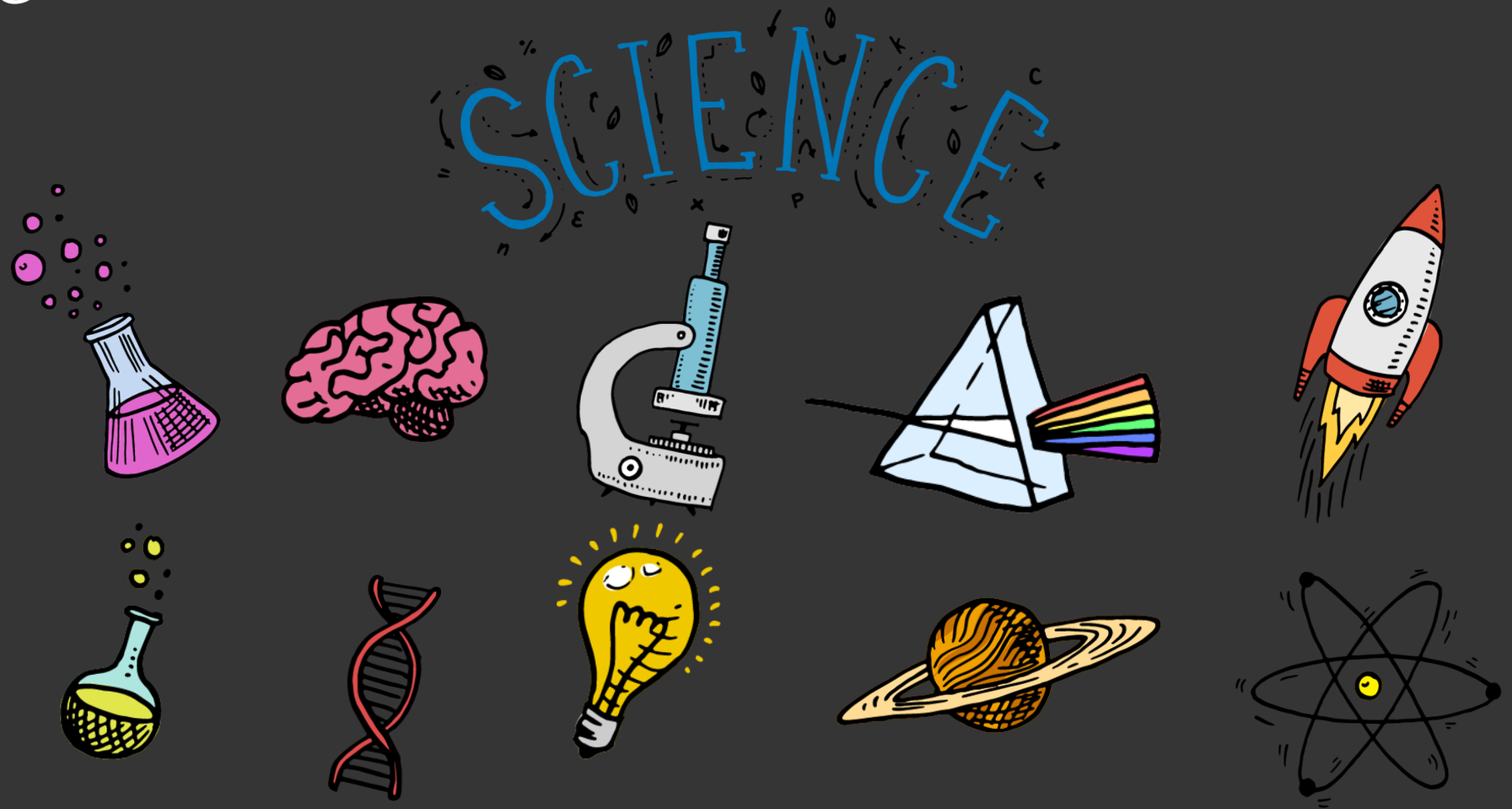

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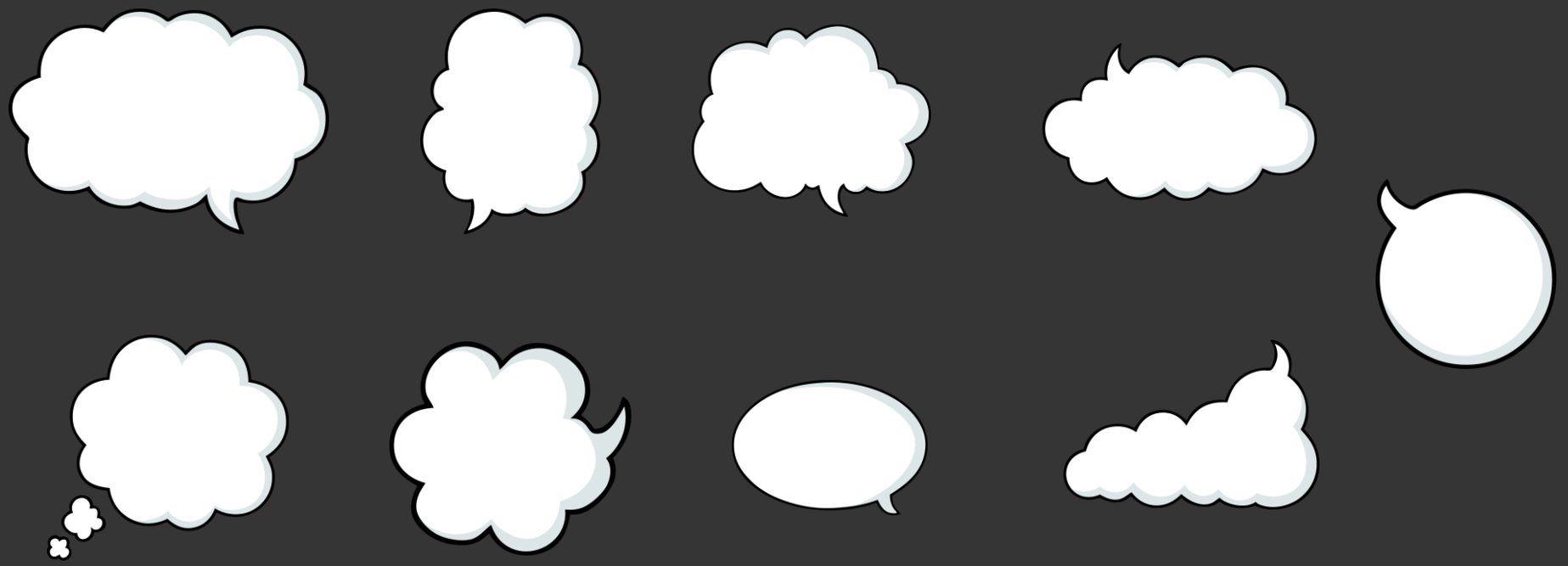

Section title

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Section title

Developer code slide

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Notes (hidden)

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- Delete it if you don’t want to use it.

NEXT: <next slide title>