Teacher’s Guide to GitHub
Copper Country Coders
2020

How to Get to GitHub

CCCoders is using GitHub as our official communication channel for sending code stubs to students as well as the means by which students can back up their code. To get started, navigate to https://github.com/CCCoders. If you do not currently have an account, you will need to first create one, then contact <NAME GOES HERE> to be added to the CCCoders team as an Owner. Please remember that your GitHub username and Avatar need to be family friendly.

Roles in CCCoders GitHub Organization

To maintain a tidy codebase and ensure everyone has appropriate permissions, we will structure the GitHub Organization as follows:

Roles: there are two roles in a team: Owner and Member. All teachers and advisors will be Owners, meaning they have the ability to create new repos, move/change/rename repos, and add new team members. All students will be members. This means they will have the ability to create new repos, contribute to existing repos, and download code from repos. It is the responsibility of teachers to help students create GitHub accounts and explain the ground rules for using GitHub. The list below is not comprehensive, but would be a good place to start with your students.

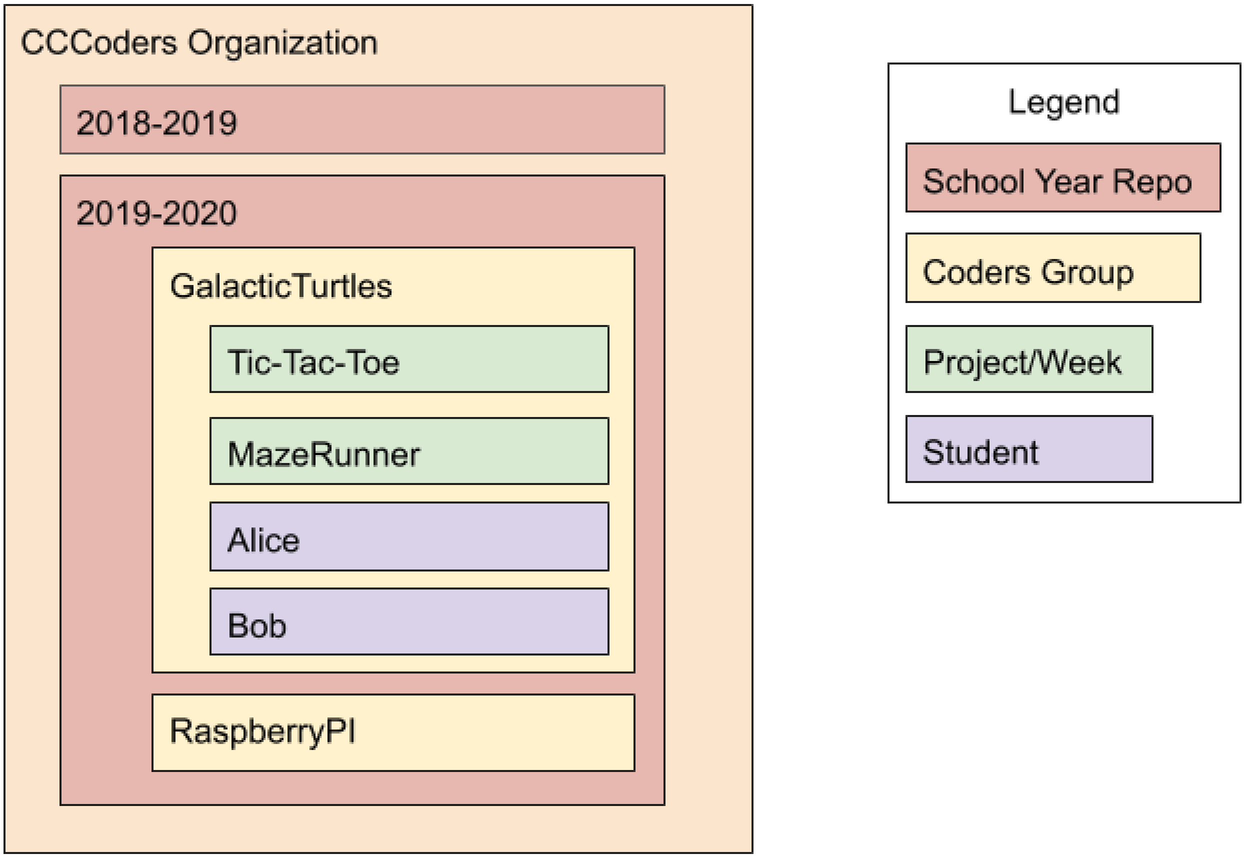
Ground Rules for Using GitHub

1. Do not post code that you didn't write.
2. Do not modify or delete code that is not your own unless you have received permission from the code's owner.
3. Do not create new repositories
4. Only upload/download code as directed by your teacher.
5. If you don't know what a button does, please ask before clicking it.

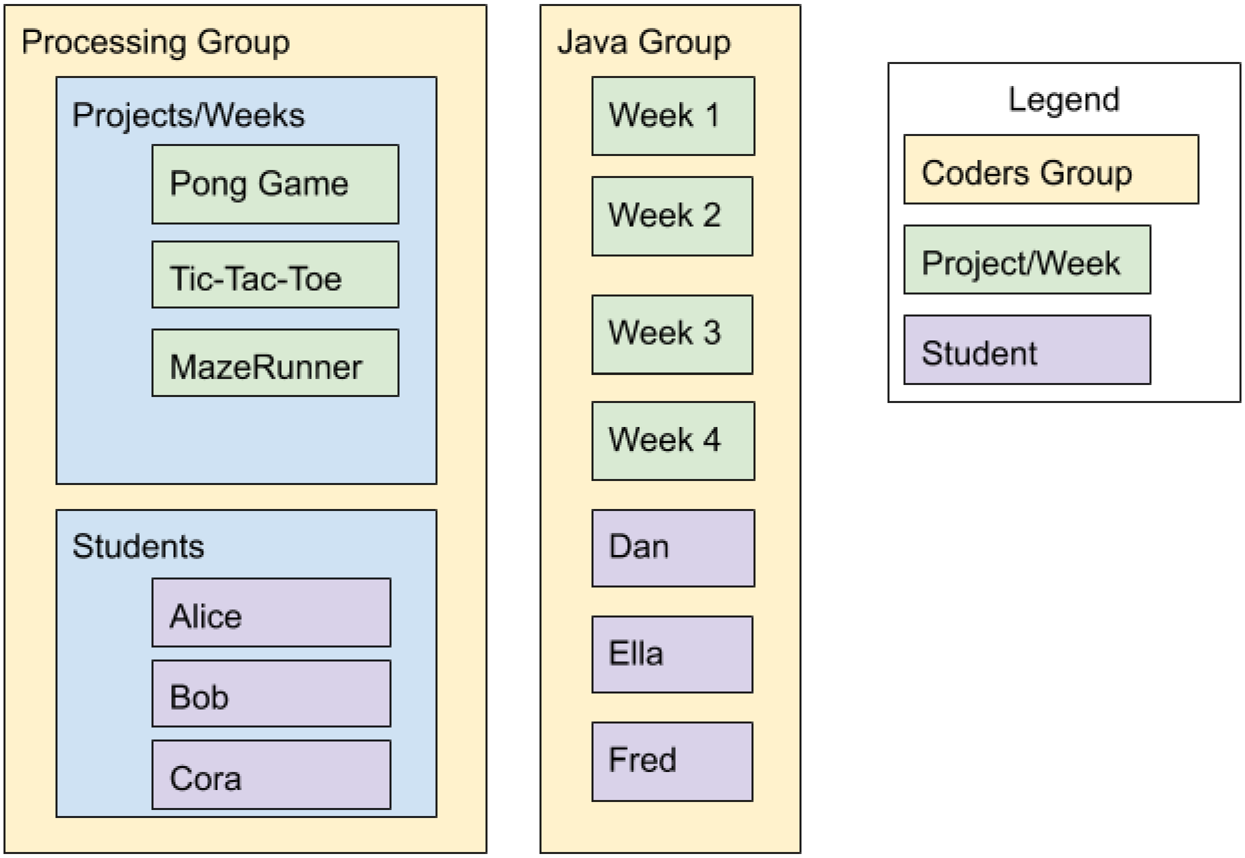
Structure of CCCoders GitHub Organization

The overall structure of the GitHub Organization will be as follows: There will one repository per school year, clearly labeled (e.g. 2019-2020). Within this repository, each group will have a folder labeled with it’s group name. This can be either a general descriptor (e.g. “Raspberry_PI_Group”), the name(s) of the group leaders (e.g. “Katie_and_Laura”, or a creative team name (e.g. “GalacticTurtles”). Within this folder, group leaders are responsible to create a sub-hierarchy of folders. This can be done either with one folder per week to distribute code stubs to students, or by project. You might want to consider the maturity level of your students, and whether your course is organized by project or by week. Teachers will also want to create a subfolder for each student to be able to upload their code. A sample year can be found in 2019-2020.

Overall Organization of the CCCoders GitHub



Alternate Organization Options within a Coders' Group



You should encourage your students to label each project and upload it within their individual subfolder.

Note: When you create a folder for each of your students, you should include two files in it initially. The first file can be a little welcome blurb about who's teaching and what sort of projects you're going to be doing for the year. The second file should be the student guide to using GitHub so that they have it available for reference.

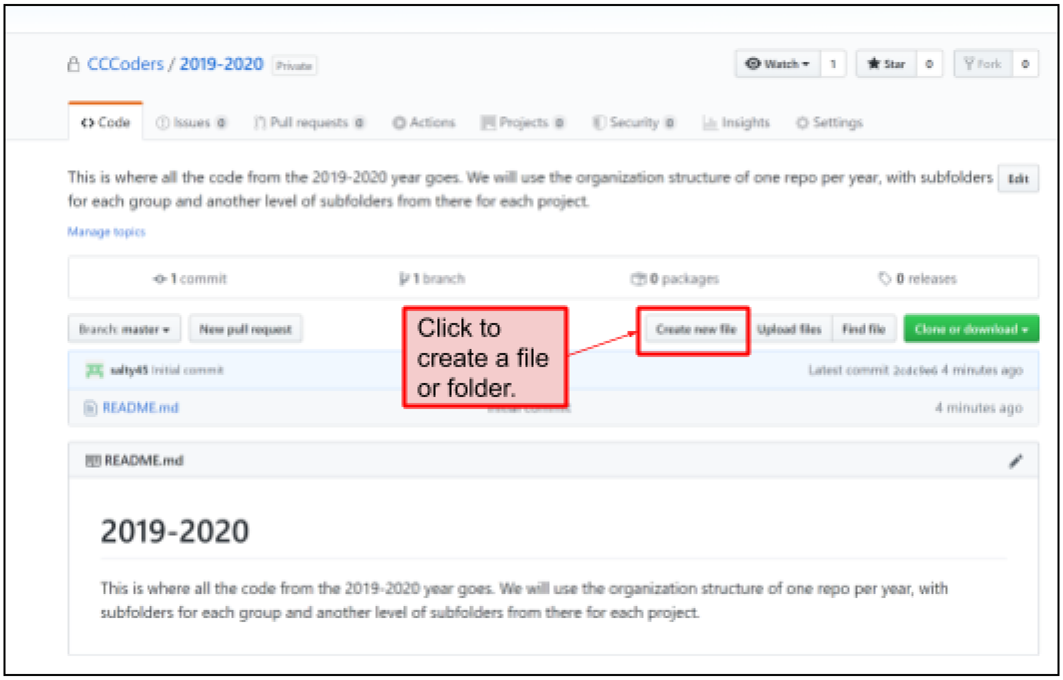
How to Create a Subfolder for Your Group:

Option 1: Command-line
You need to know what you're doing with initializing a repo at the command-line for this. If you're already comfortable with that, go ahead. Otherwise, skip to Option 2.

Option 2: Upload an already prepared subfolder to GitHub. See *Uploading Folders* for more information.

Option 3: Create a folder with a README from the online interface in Github.
First, log into Github and navigate to the repo you're modifying. Then click Create new file. This will open a page for entering a filename and typing content. If you only want to add a file and not a subfolder, this means you're done. However, you want to add a folder. This means you'll need to create a foldername followed by a filename. The new file can be just a README to say what the folder's for. Then click commit to save your folder.

Step 1: Click to create a folder.



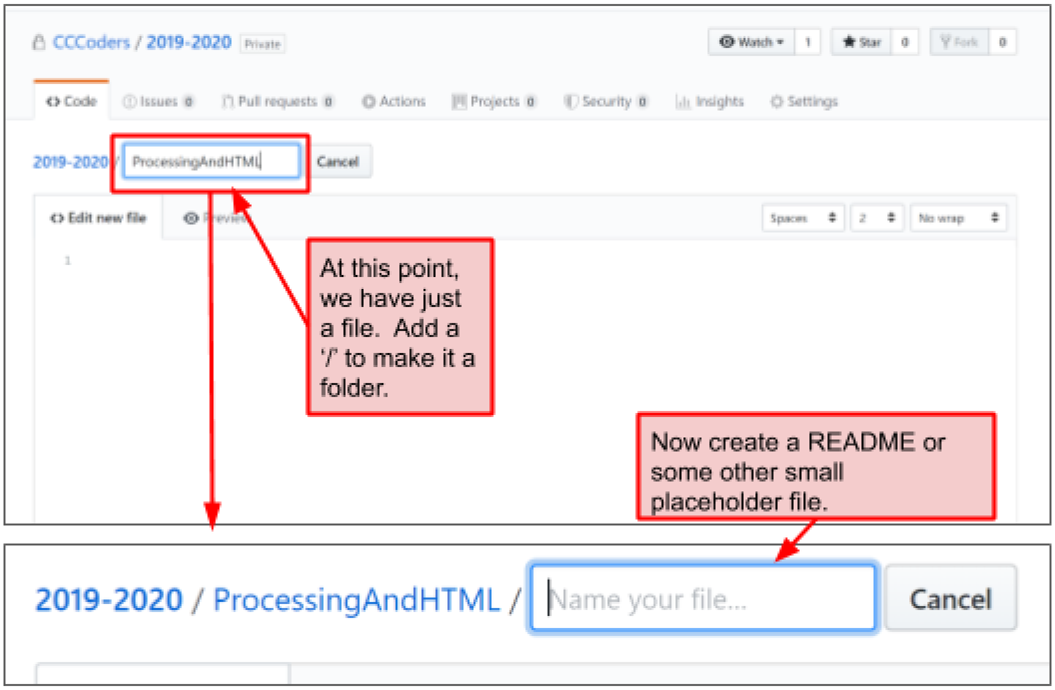
This is where all the code from the 2019-2020 year goes. We will use the organization structure of one repo per year, with subfolders for each group and another level of subfolders from there for each project.

2019-2020

This is where all the code from the 2019-2020 year goes. We will use the organization structure of one repo per year, with subfolders for each group and another level of subfolders from there for each project.

Click to create a file or folder.

Step 2: Give your folder a name and create a README file within it.

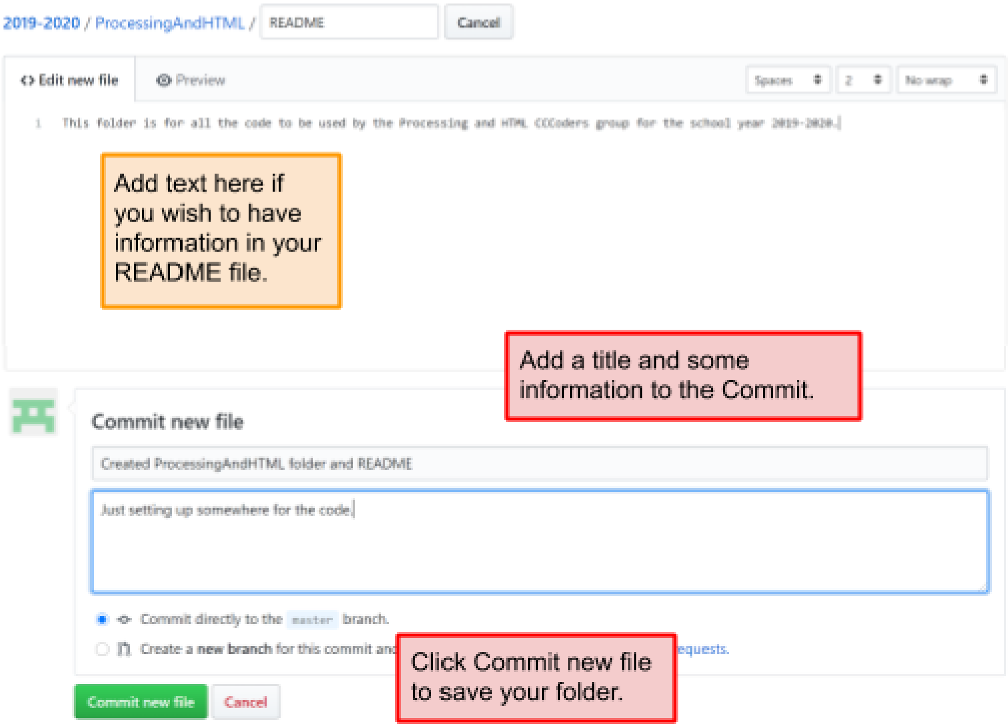


ProcessingAndHTML

At this point, we have just a file. Add a '/' to make it a folder.

Now create a README or some other small placeholder file.

Step 3: Add text to the file, add a message for committing (i.e. saving) the folder, and click commit.


2019-2020 / ProcessingAndHTML /
Cancel
Edit new file
Preview
Spaces
2
No wrap
Commit new file
Commit directly to the master branch.
Create a new branch for this commit and ... equests.
Commit new file
Cancel

README

```
This folder is for all the code to be used by the Processing and HTML CCCoders group for the school year 2019-2020.
```

Add text here if you wish to have information in your README file.

Add a title and some information to the Commit.

Created ProcessingAndHTML folder and README

Just setting up somewhere for the code.

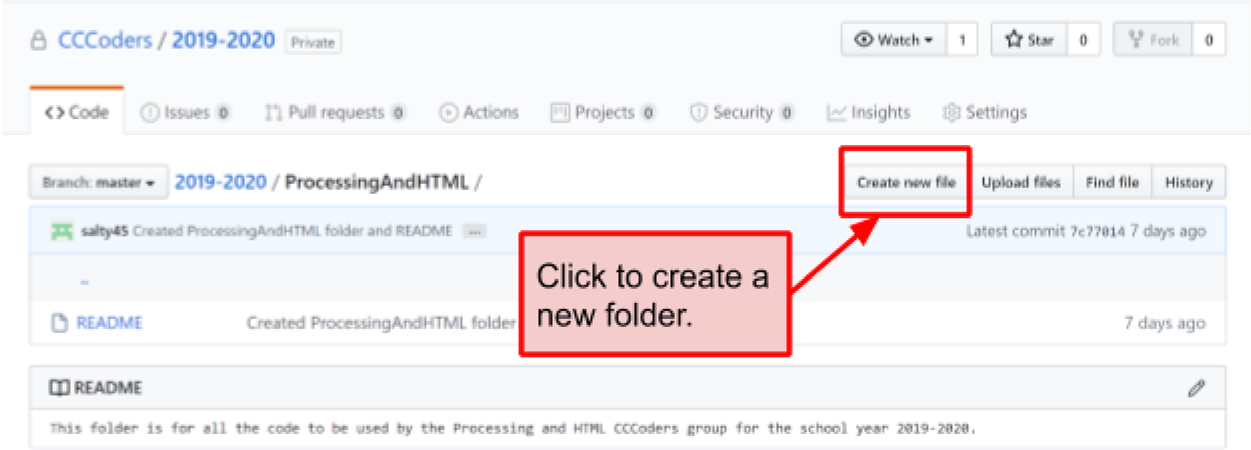
Click Commit new file to save your folder.

You should now see the new folder when you click on the 2019-2020 repo main page.

How to Create a Subfolder for Projects/Students

Now you've got your main folder for your group. You still need to create subfolders for each week or project. First navigate to your group's folder. Then, create a subfolder. This will be much like creating a folder for your group. This section discusses creating a subfolder. If you prefer to upload one, see Uploading Folders.

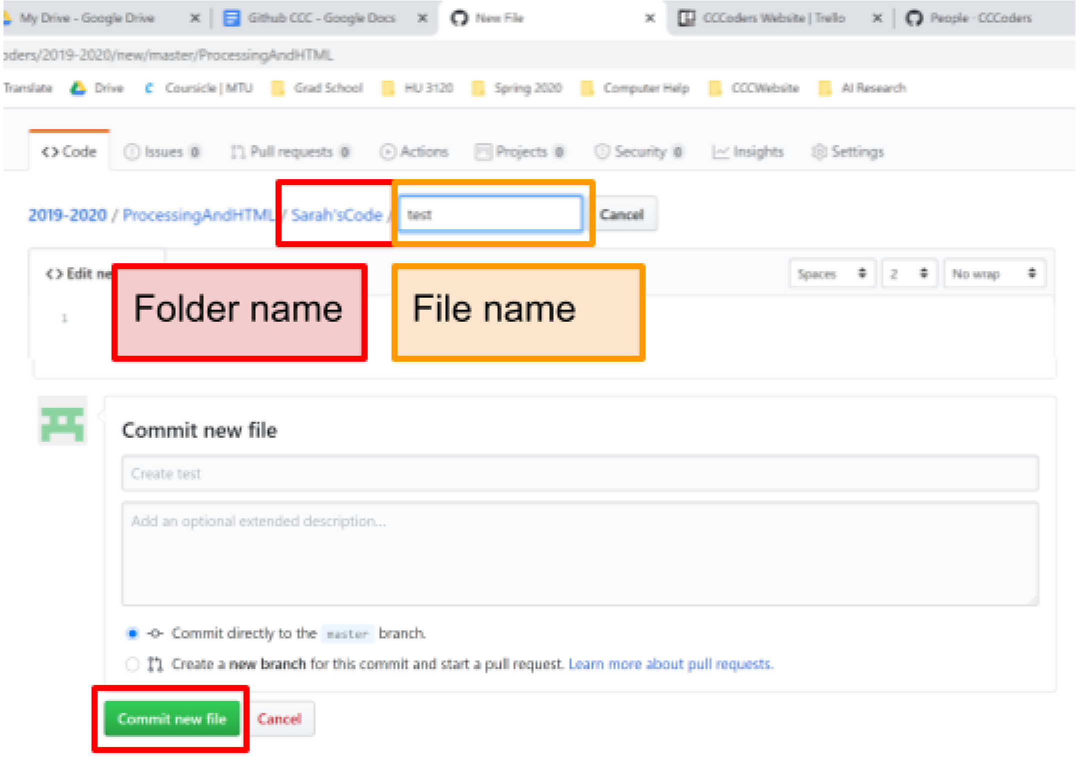
Step 1: Click "Create new file" to create your folder


CCCoders / 2019-2020 Private
Watch 1
Star 0
Fork 0
Code
Issues 0
Pull requests 0
Actions
Projects 0
Security 0
Insights
Settings
Branch: master
2019-2020 / ProcessingAndHTML /
Create new file
Upload files
Find file
History
salty45 Created ProcessingAndHTML folder and README
Latest commit 7c77014 7 days ago
..
README
Created ProcessingAndHTML folder
7 days ago
README

This folder is for all the code to be used by the Processing and HTML CCCoders group for the school year 2019-2020.

Click to create a new folder.

Step 2: Name your folder, add a "/" and then a filename. Then click Commit new file.



Folder name

File name

● Commit directly to the master branch.

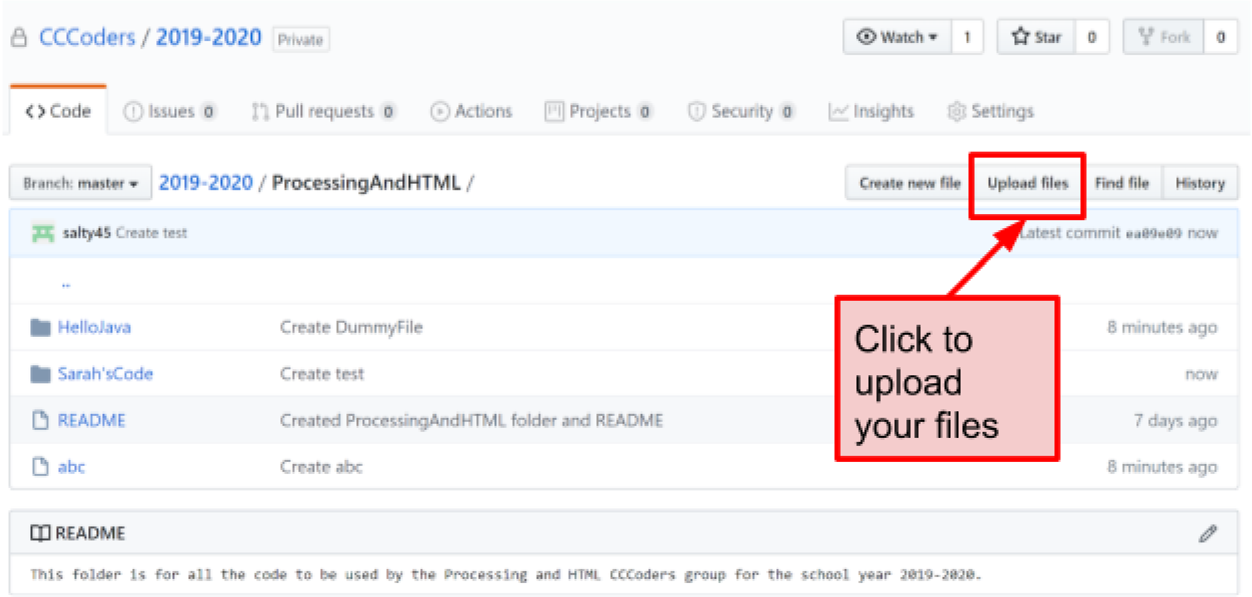
○ Create a new branch for this commit and start a pull request. Learn more about pull requests.

The newly created subfolder will now appear within your group's folder.

Uploading Code to GitHub

Now you have a set of (mostly) empty folders but no code. The next step is to upload your code to GitHub. To do this, navigate to the folder to which you wish to add code, and click “Upload Files”.

Step 1: Click Upload Files



2019-2020 / ProcessingAndHTML /

salty45 Create test — Latest commit ea09e09 now

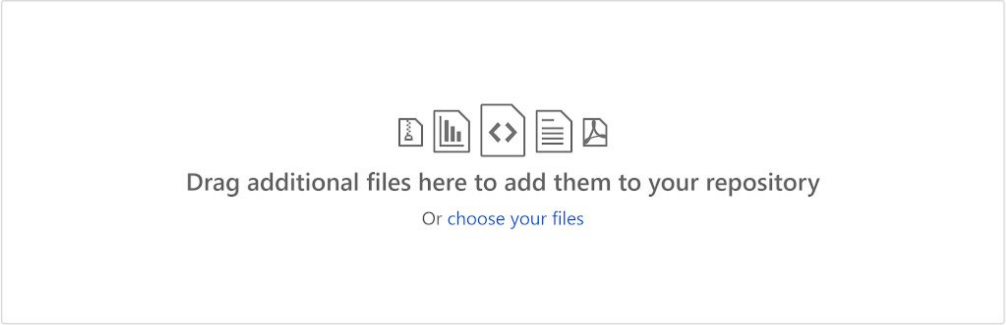
..		
HelloJava	Create DummyFile	8 minutes ago
Sarah'sCode	Create test	now
README	Created ProcessingAndHTML folder and README	7 days ago
abc	Create abc	8 minutes ago

README

This folder is for all the code to be used by the Processing and HTML CCCoders group for the school year 2019-2020.

Click to upload your files

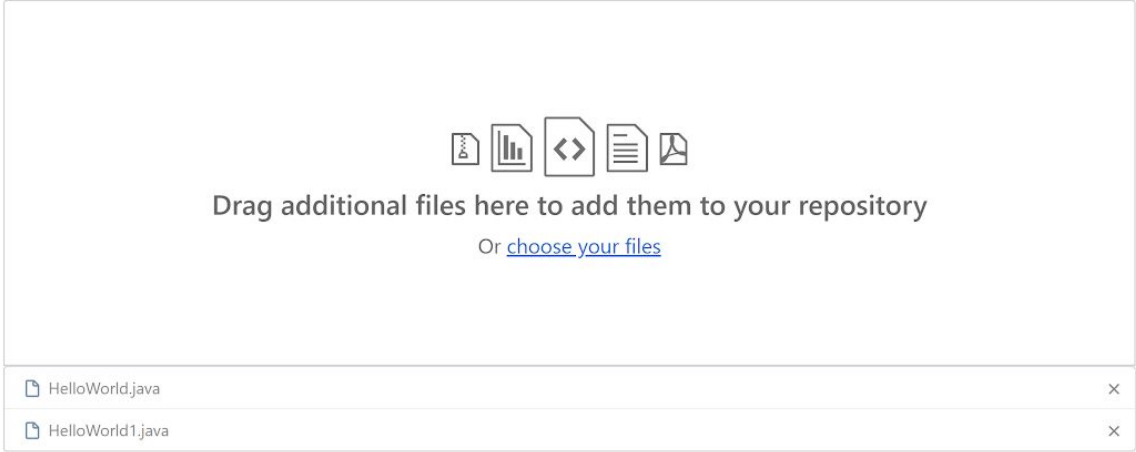
Step 2: Upload the files for this folder. You can either click “choose your files” or drag and drop the files onto the background.



Drag additional files here to add them to your repository

Or choose your files

Once you've selected your files, they should appear in a list below the upload area.



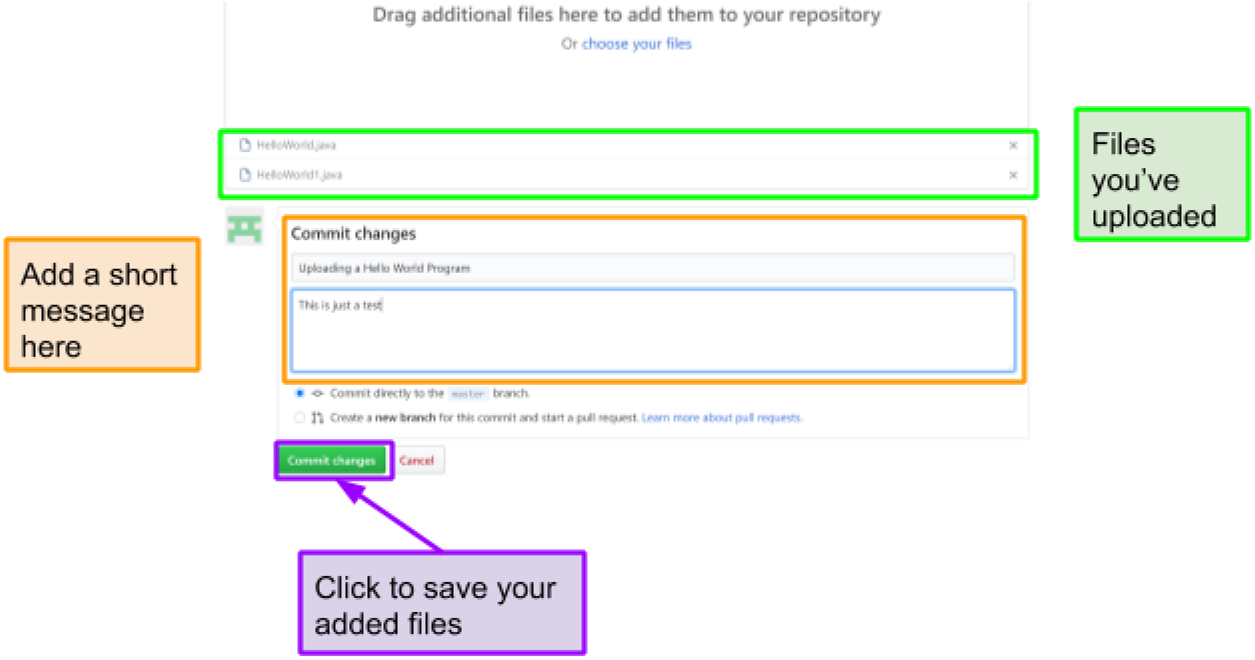
Drag additional files here to add them to your repository

Or choose your files

HelloWorld.java

HelloWorld1.java

Step 3: Add a message for committing the files and click "commit changes".



Drag additional files here to add them to your repository

Or choose your files

HelloWorld.java

HelloWorld1.java

Commit changes

Uploading a Hello World Program

This is just a test

● Commit directly to the master branch.

○ Create a **new branch** for this commit and start a pull request. Learn more about pull requests.

Add a short message here

Files you've uploaded

Click to save your added files

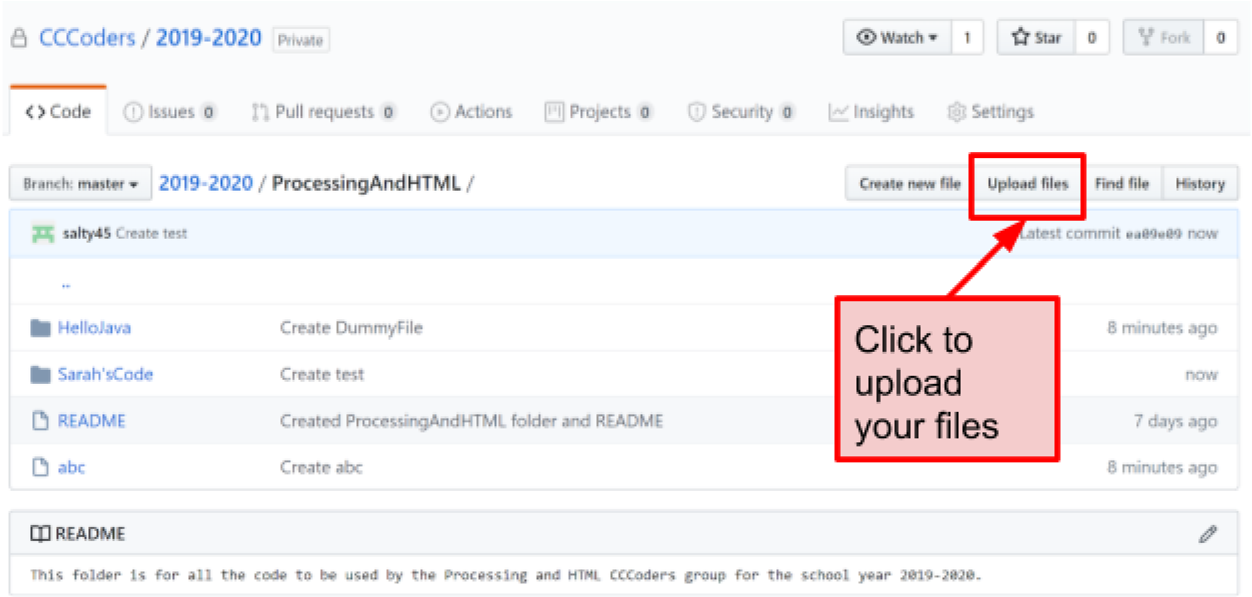
Your new files should now be saved.

Note: GitHub will not let you upload a full folder through the web interface when you click "choose your files" unless it is a zip file. If you want to upload a full folder without zipping it, you need to drag and drop it instead as shown in the next section.

Uploading a Folder of Code to GitHub

If you have multiple files of code to upload to GitHub for a single project, you may want to upload it as a folder instead of creating a folder and uploading the files individually. To do this, you'll need to have a good way to use drag and drop with your files.

Step 1: Click Upload Files



salty45 Create test — Latest commit ea09e09 now

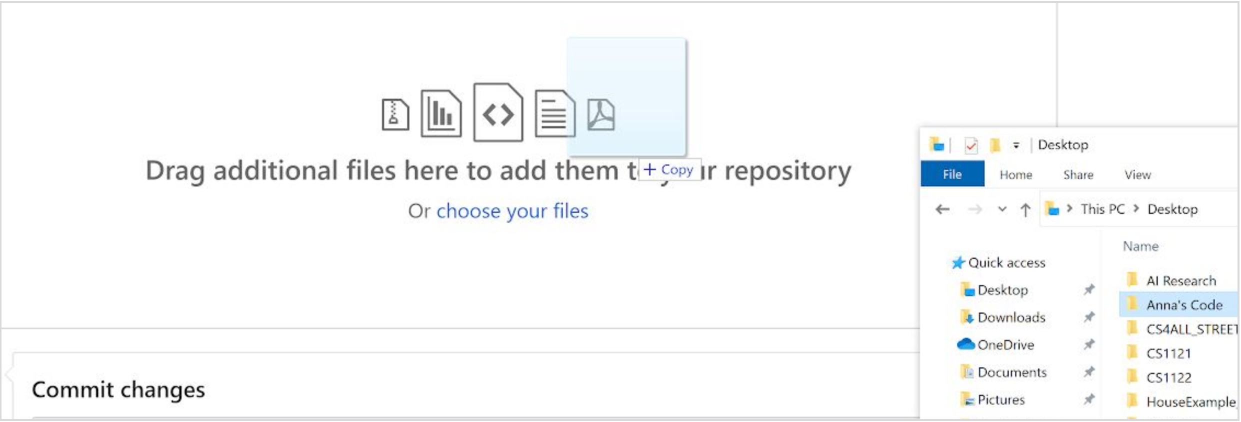
..

HelloJava	Create DummyFile	8 minutes ago
Sarah'sCode	Create test	now
README	Created ProcessingAndHTML folder and README	7 days ago
abc	Create abc	8 minutes ago

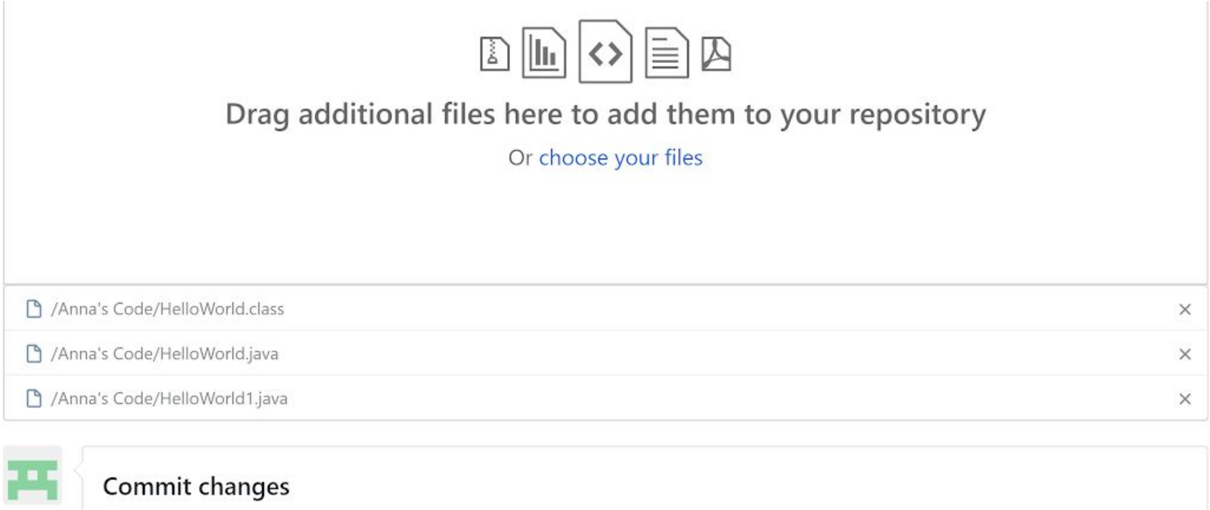
README

```
This folder is for all the code to be used by the Processing and HTML CCCoders group for the school year 2019-2020.
```

Step 2: Drag and drop your folder from a file explorer onto the upload window



The code should then upload including the folder name in the file path.



Drag additional files here to add them to your repository

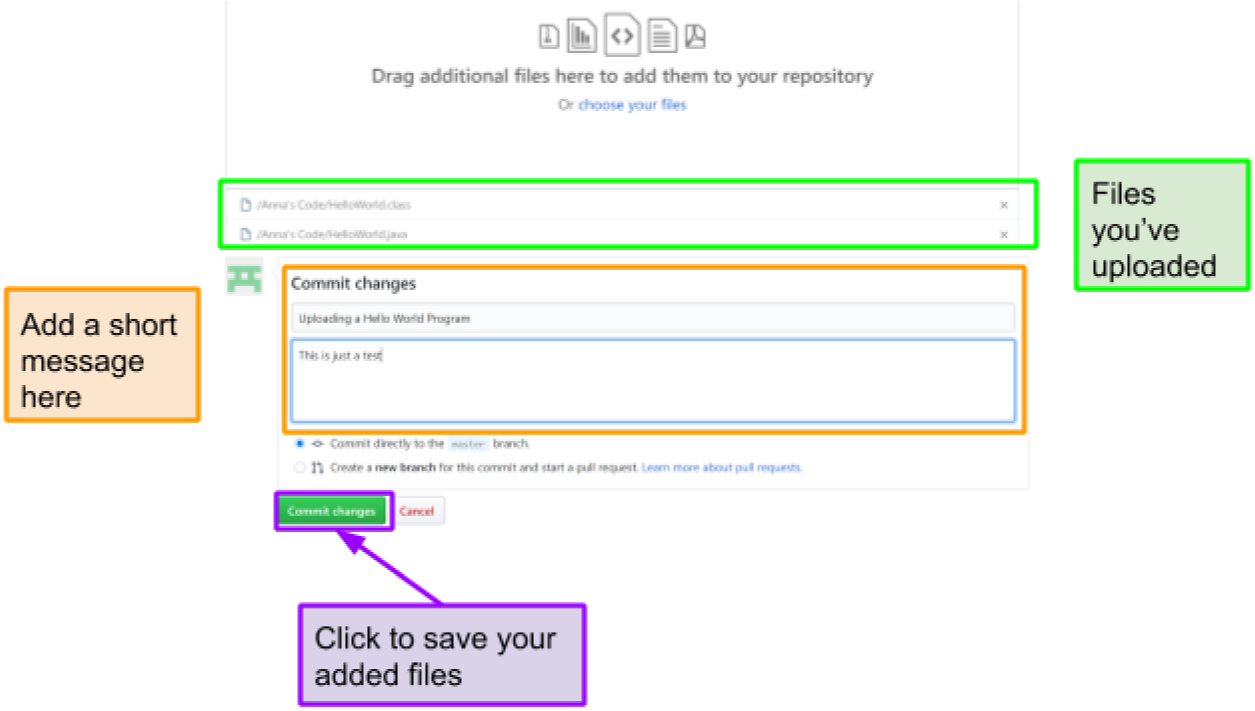
Or choose your files

/Anna's Code/HelloWorld.class

/Anna's Code/HelloWorld.java

/Anna's Code/HelloWorld1.java

Step 3: Add a title for your commit and click “commit changes”.



Drag additional files here to add them to your repository

Or choose your files

/Anna's Code/HelloWorld.class

/Anna's Code/HelloWorld.java

Commit changes

Uploading a Hello World Program

This is just a test

● Commit directly to the master branch.

○ Create a new branch for this commit and start a pull request. Learn more about pull requests.

Files you've uploaded

Add a short message here

Click to save your added files

Downloading Code from GitHub

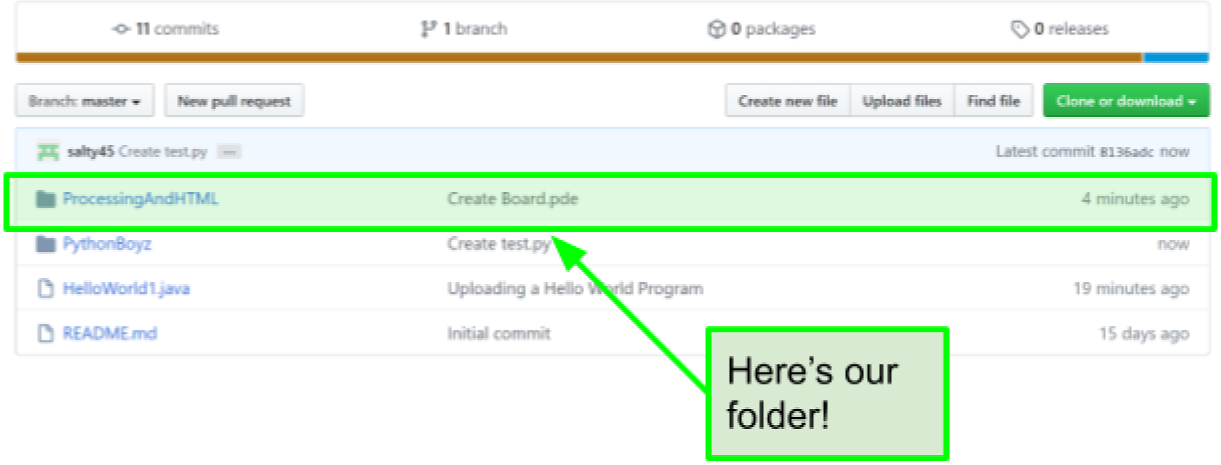
Please familiarize yourself with the downloading instructions copied from the student booklet below. Your students will probably have many questions as to whether they're doing this "right" the first couple of times. Unfortunately, GitHub doesn't let you download an individual file, so your students will be having to copy and paste the code over.

Depending on how comfortable you are with the Linux command line and GitHub, and how advanced your students are, you may also want to teach them how to download each week's code to a specific location using command-line git. This would probably be appropriate for mature high school students learning a language like Python or Java.

Extract from Student Booklet

One of the main reasons we're using GitHub for CCCoders is to make it easy to access code teachers want to share for each week. To get started doing this, go to the GitHub website https://github.com/CCCoders/CurrentYear/ and locate your group's folder. Your teachers will have told you which folder it is. Then, click on the folder for this week's project. Below, we will work through an example to get code from a ProcessingAndHTML group project.

Step 1: Find your group's folder and click on its name.

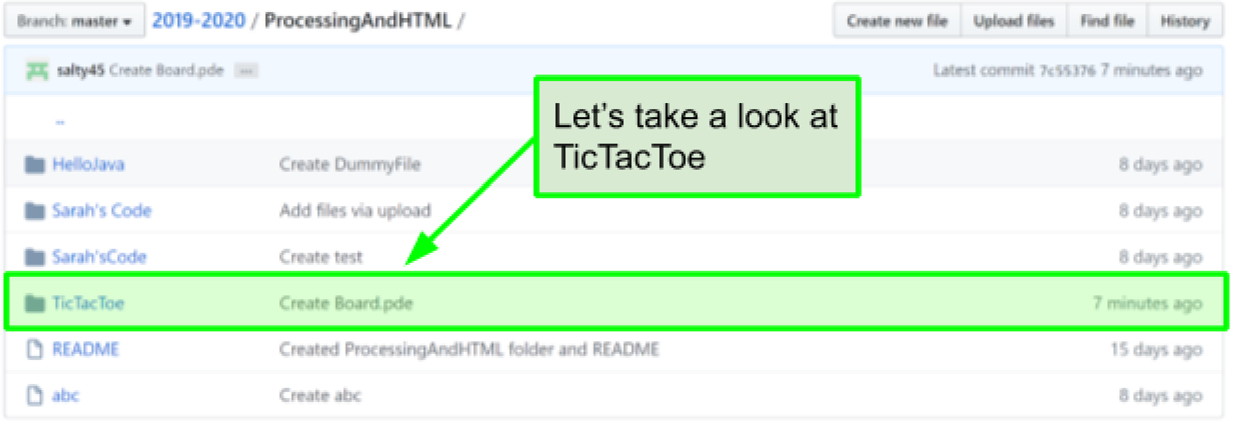


salty45 Create test.py … Latest commit 8136adc now

ProcessingAndHTML	Create Board.pde	4 minutes ago
PythonBoyz	Create test.py	now
HelloWorld1.java	Uploading a Hello World Program	19 minutes ago
README.md	Initial commit	15 days ago

Here's our folder!

Step 2: Find the folder for your current project (or the folder with your name on it).



Branch: master ▾ 2019-2020 / ProcessingAndHTML /

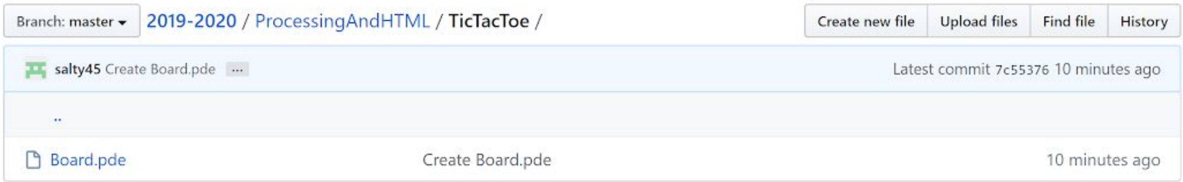
Create new file | Upload files | Find file | History

salty45 Create Board.pde … Latest commit 7c55376 7 minutes ago

..		
HelloJava	Create DummyFile	8 days ago
Sarah's Code	Add files via upload	8 days ago
Sarah'sCode	Create test	8 days ago
TicTacToe	Create Board.pde	7 minutes ago
README	Created ProcessingAndHTML folder and README	15 days ago
abc	Create abc	8 days ago

Let's take a look at TicTacToe

Step 3: Click on a file to view it



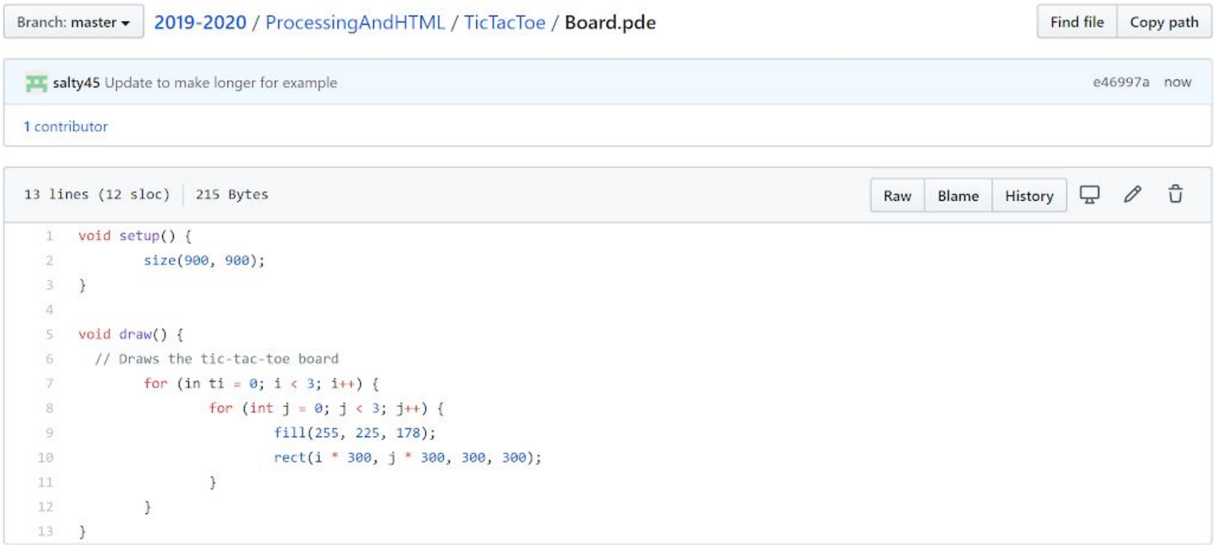
Branch: master ▾ 2019-2020 / ProcessingAndHTML / TicTacToe /

Create new file | Upload files | Find file | History

salty45 Create Board.pde … Latest commit 7c55376 10 minutes ago

..		
Board.pde	Create Board.pde	10 minutes ago

You should see something like this:



Branch: master ▾ 2019-2020 / ProcessingAndHTML / TicTacToe / Board.pde

Find file | Copy path

salty45 Update to make longer for example e46997a now

1 contributor

13 lines (12 sloc) | 215 Bytes

Raw | Blame | History

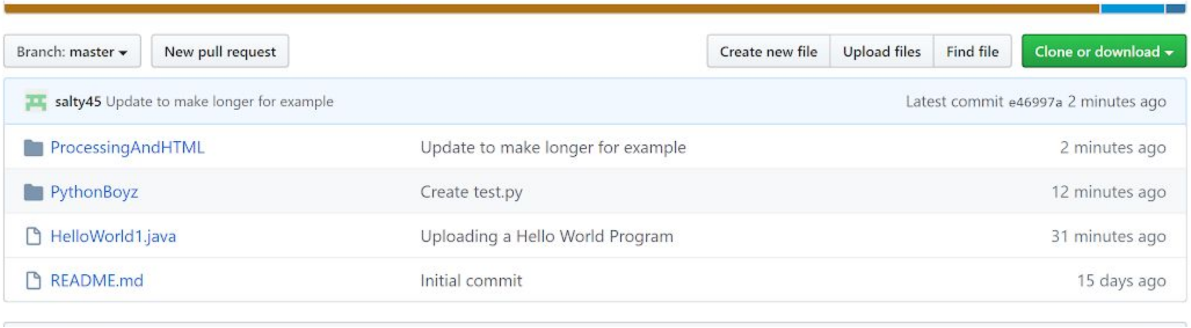
```
void setup() {
        size(900, 900);
}

void draw() {
  // Draws the tic-tac-toe board
        for (in ti = 0; i < 3; i++) {
                for (int j = 0; j < 3; j++) {
                        fill(255, 225, 178);
                        rect(i * 300, j * 300, 300, 300);
                }
        }
}
```

Step 4: Create a file on your computer with the same name as the one in GitHub. Then copy and paste the code in.

You have now successfully accessed the code.

Note: You might see a green “Clone or Download” button in the main folder.



salty45 Update to make longer for example — Latest commit e46997a 2 minutes ago

ProcessingAndHTML	Update to make longer for example	2 minutes ago
PythonBoyz	Create test.py	12 minutes ago
HelloWorld1.java	Uploading a Hello World Program	31 minutes ago
README.md	Initial commit	15 days ago

This isn’t the best way to get your code because it will download the code for every group, not just your group. That’s a lot of code to be downloading and searching through!