SCSC Presents:

Intro to Git & GitHub

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Installation steps

1. Go to https://git-scm.com/downloads

And Download the right package for your computer

2. Once Downloaded, open to install it

Use the default options for everything

3. Once finished, verify your download

Open your terminal (Search for “Command Prompt”) and type `git --version`. You should get an output like this:
`git version 2.39.1.windows.1`

Installation steps (Cont.)

4. Set your identity

In your terminal, type (and complete) the following lines:

```
git config --global user.name [YOUR NAME HERE]
git config --global user.email [YOUR EMAIL HERE]
```

5. (Optional) Changing git's text editor

To change the default text editor git uses, type:

```
git config --global core.editor "[FILE PATH]"
```

6. Git Commands to remember

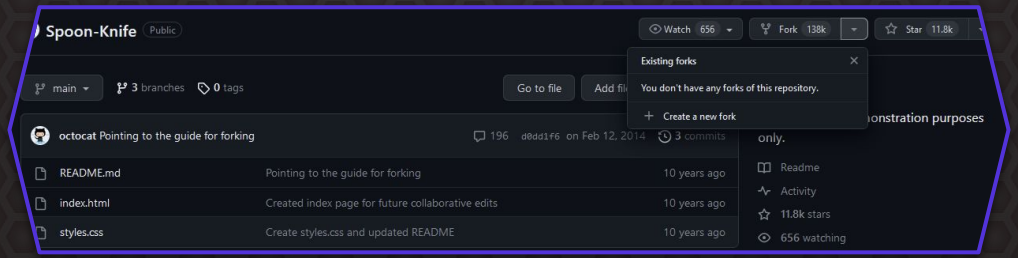
- `git config --list` : Will list all the current values of the config file
- `git config [key]` will get the config value of a single key
- `--global` flag allows settings to apply to every repository

Forking

- Forking is creating a completely separate copy of a repository
  - Different from cloning as you are now the owner of the forked repository

- Go to this link: https://tinyurl.com/3uby72c6, and create a gitHub account if you don't have one (via GitHub.com). You should be brought to the scsc2023_demo repository.

- Useful if you want to experiment with the project without affecting the branches
- On GitHub's website, look for the Fork dropdown menu
  - From there, you can create a fork of that repository
  - You can change the name, permissions, etc…



Cloning a Repository

- A clone of a repository is intrinsically linked to the original. To push files and create branches, you need to be a collaborator or the owner.
- Copy the URL of the web page you are redirected to, then, in the command line, type: `git clone [URL]`. Then, type `cd scsc2023_demo` to enter the directory.
- If you have VSCode installed, you can type `code .` ,and it will open VSCode with that folder. Otherwise, you can navigate to that folder on your computer and open the files from there.
- What you have just done is cloned the contents of the “main” branch onto your computer.

Branching

- Branching allows you to contribute to a project while keeping your changes separated by the main(or master) version
- To Create a new branch, you type the following on the command line:
  - `git checkout -b [NAME OF NEW BRANCH]`
- To get a list of all current branches on your computer, you can type:
  - `git branch`
- To switch which branch you are working on, you can type either:
  - `git switch [BRANCH NAME]` or `git checkout [BRANCH NAME]`
  - **NOTE:** Any changes to the current branch must be committed before switching branches

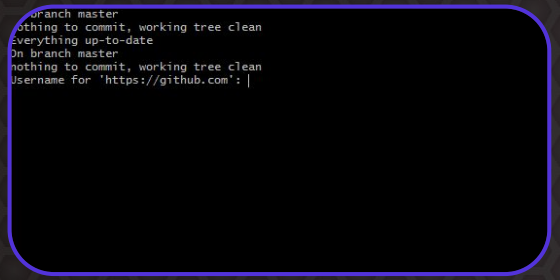
Adding, Committing, and Pushing

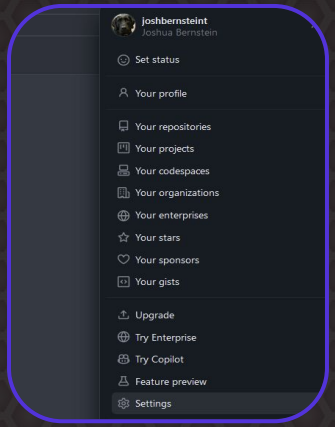
- A commit is basically a record of how you changed the repository
- First, you “add” files to be tracked by typing `git add [name of file]` or by typing `git add .` to get every file in the folder (and its subfolders)
- After that, you commit your changes by typing `git commit -m “[MESSAGE]”`
  - The message is to describe how you changed or updated the code

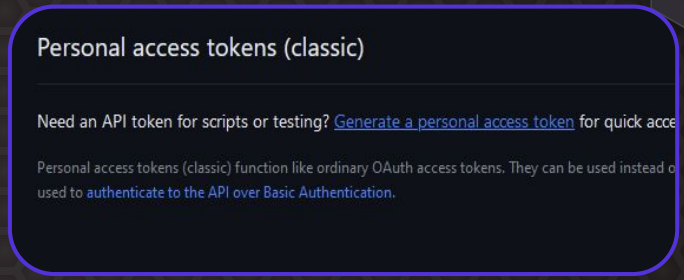
- Once you have committed your changes, you can push them. This will upload them to GitHub’s website, so they can be downloaded from anywhere
  - You simply type `git push`
  - **NOTE:** The first time you do this, it may ask you for additional arguments for push, such as `-set-upstream origin [branch name]` for example.

- If on a different computer that is connected to the same repository, you use `git pull` to download the most recent version of the repository

Quick Interlude: Getting GitHub Token







Signing in

When trying to push something for the first time, GitHub will ask for your username and password

If it fails

If you get the message “Support for password authentication was removed”, you need to acquire your personal token. Under GitHub, go to your settings.

Getting the Token

From Settings go to “Developer Settings” then “Personal Access Tokens” then “Tokens Classic”. Once you generate a token, use it as your password.

Pull Requests

- When you create a branch and push changes to it, you will receive an option to create a pull request
- A pull request merges your branch with the main branch
  - Once a pull request is made, it must be approved by the owner of the repository
  - The owner may choose to reject the pull request if they don't like it, or edit aspects of it before approving it
- If the pull request is approved, you can use `git pull` to download the newest version of the main branch

Creating your own Repo

- If you go to the Repositories page on your GitHub profile (or via https://github.com/**[username]**). You should see a button to create a new repo
- There are many ways to initialize a repo on GitHub
  - For now, we're going to use the first option, or "create a new repository on the command line"
  - Create a folder where you want to store the repo, then navigate to that folder in your terminal
  - Once there, copy and paste the text into the terminal
- Once initialized, you can do whatever you want with it
  - Commit, push, create branches
  - Change visibility (public or private)
  - etc...