GitHub

Essentials of Web Design
CSCI 1210

1

Code Repositories

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Code Repositories

In revision control systems, a **repository** is a data structure which stores a set of files and directories structure

The whole set of information in the repository may be duplicated on every user's system (or may be maintained on a single server)

Since a project can involve a lot of people, often in different locations, repositories (repos) provide a way to work asynchronously (at different times) on the various parts of the project

Helps prevent one team member's changes from overwriting another's and/or breaking the working copy

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Code Repositories

Some of the metadata that a repository contains includes, among other things:

- A historical record of changes in the repository
- A set of commit objects
- A set of references to commit objects, called *heads*

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Code Repositories

Repos can be architected in several ways

Probably the most popular is a central repository, from which team members can download the entire code base to their local machine, work on it, and upload their changes

Any conflicts that occur (and conflicts DO occur!) can more easily be resolved by comparing changes – or concurrent changes – to earlier versions of the code

5

Code Repositories

Versioning is the KEY

Projects are usually developed incrementally

- Create a basic working version
- Add to repo
- Develop features and updates
- Add, test

6

Code Repositories

Versioning is the KEY

If a change breaks something, versioning allows developers to 'roll back' to the last working version

Then

Figure out what went wrong

7

Code Repositories

We will be using GitHub for our semester projects

There are several steps (following) that have to be completed

The responsibility for creating and maintaining the repo is the Team Leader's

Each team member will create a (free) GitHub account, if you don't already have one

The Team Lead will create the repo and ensure that all team members can contribute

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GitHub

Create a (free) GitHub Account

9

Sign up for an account

https://github.com/

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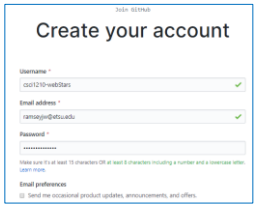
Sign up for an account



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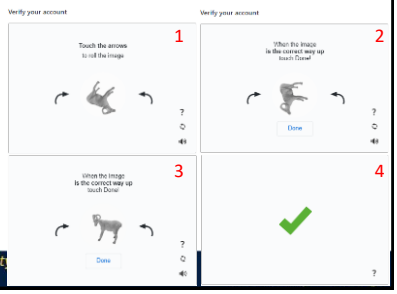
Sign up for an account



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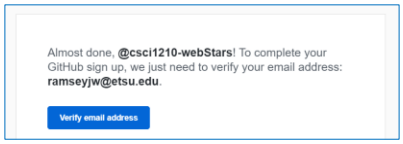

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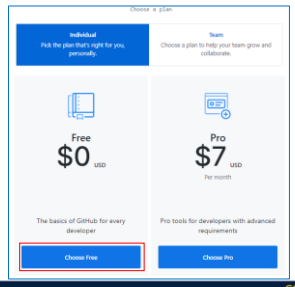

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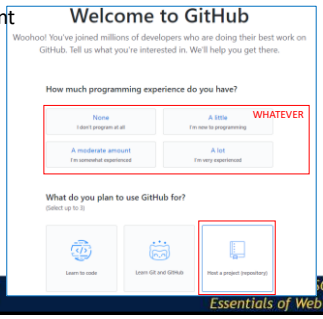

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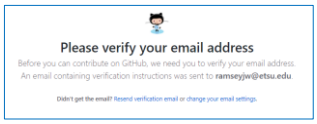
Sign up for an account



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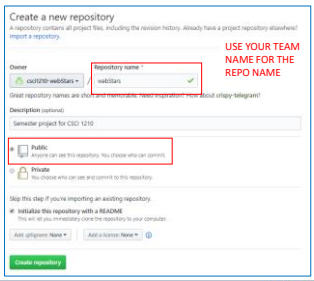
Sign up for an account

Team Leads will create the repository

Other team members, see below



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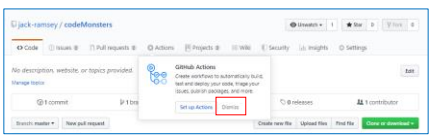
Sign up for an account



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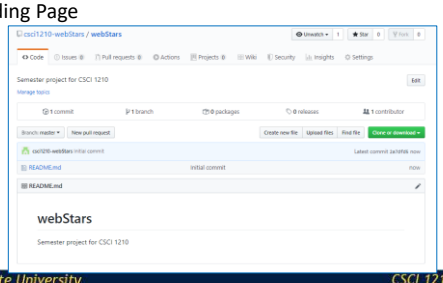
GH Landing Page



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GitHub

GitHub can be complex, but there is a desktop application that makes things pretty easy

GitHub Desktop
https://desktop.github.com/

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https://desktop.github.com/

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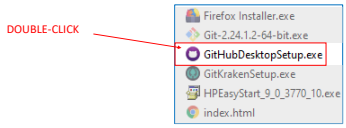
FILE EXPLORER



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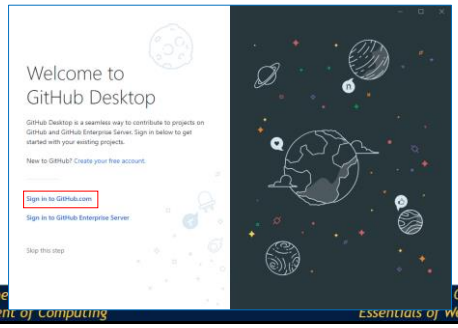

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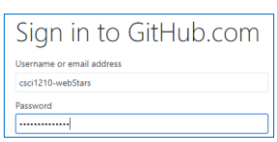
USE YOUR NEW GITHUB ACCOUNT ID / PW, NOT YOUR TEAM'S



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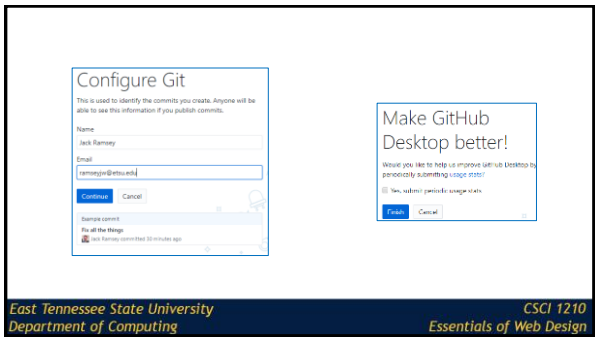

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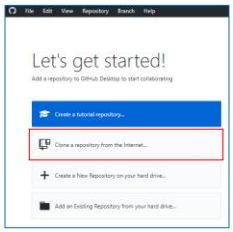

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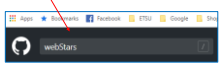
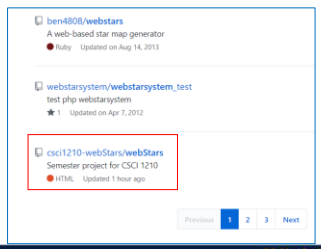
SEARCH ON GITHUB FOR YOUR TEAM'S REPO



ALTERNATIVELY, THE TEAM LEAD, ONCE THE REPO IS CREATED, CAN DISTRIBUTE THE URL TO THE REST OF THE TEAM



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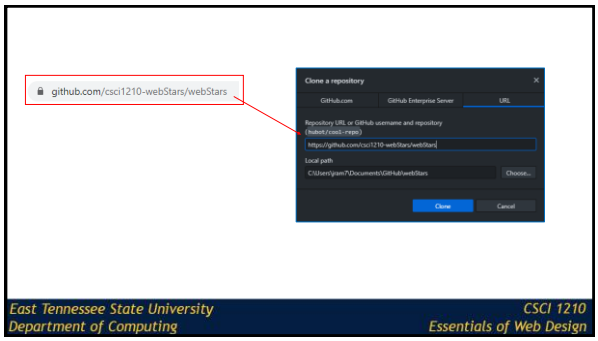
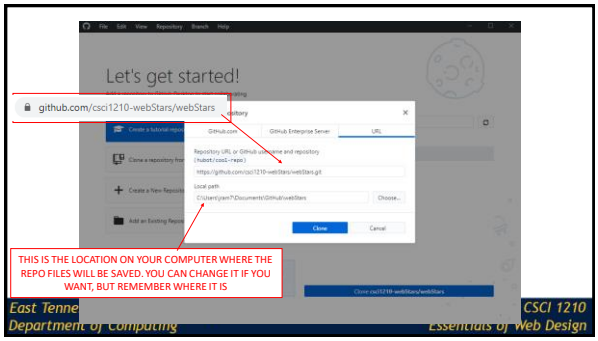

github.com/csci1210-webStars/webStars
Clone a repository
GitHub.com
GitHub Enterprise Server
URL
Repository URL or GitHub username and repository
(hubot/cool-repo)
https://github.com/csci1210-webStars/webStars
Local path
C:\Users\jsam7\Documents\GitHub\webStars
Choose...
Clone
Cancel

28


Let's get started!
github.com/csci1210-webStars/webStars
THIS IS THE LOCATION ON YOUR COMPUTER WHERE THE REPO FILES WILL BE SAVED. YOU CAN CHANGE IT IF YOU WANT, BUT REMEMBER WHERE IT IS

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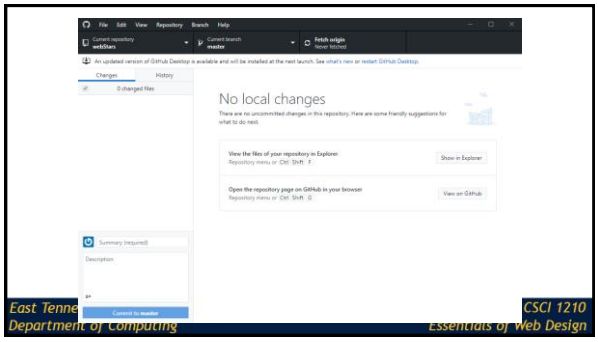
No local changes

30

IN CASE YOU'RE WONDERING WHY MY SCREENSHOTS ARE DARK WHILE YOUR DISPLAY IS WHITE, CLICK FILE->OPTIONS

THIS IS PURELY A MATTER OF PREFERENCE

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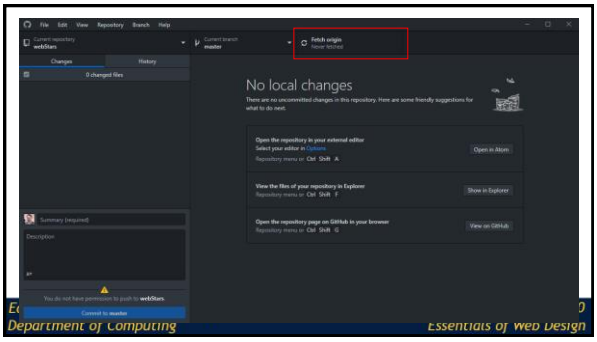

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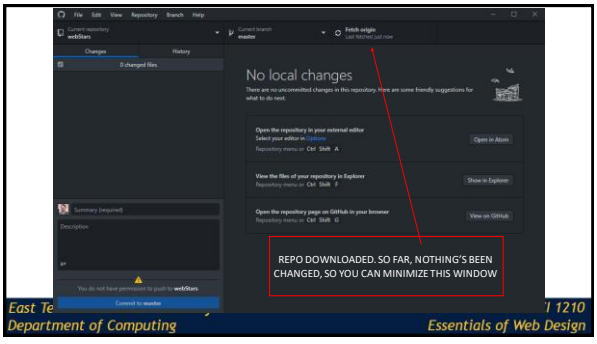

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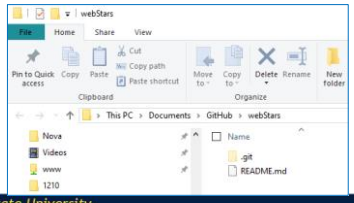
FILE EXPLORER

This is your local copy of the repo, where you'll create, modify, and save files as you work. You could use a flash drive



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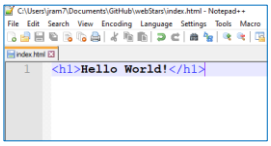
TESTING – CREATE A FILE



SAVE IT TO YOUR LOCAL DIRECTORY

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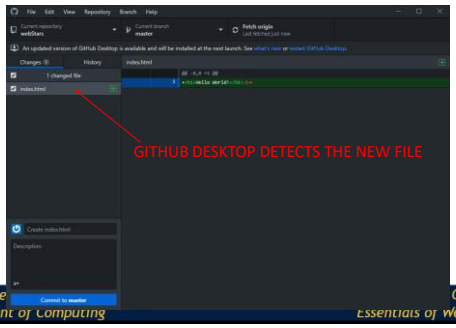

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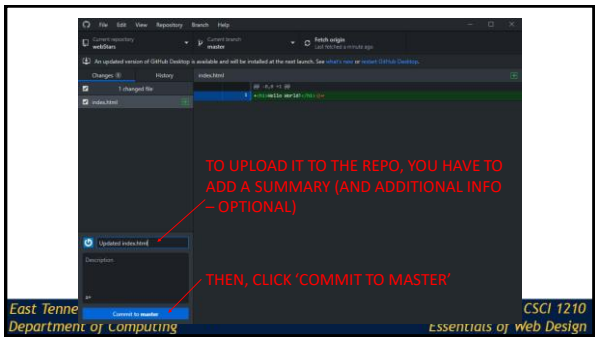
TO UPLOAD IT TO THE REPO, YOU HAVE TO ADD A SUMMARY (AND ADDITIONAL INFO – OPTIONAL)
THEN, CLICK 'COMMIT TO MASTER'
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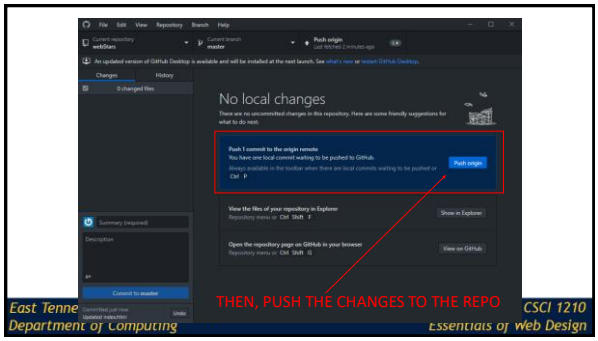
No local changes
THEN, PUSH THE CHANGES TO THE REPO
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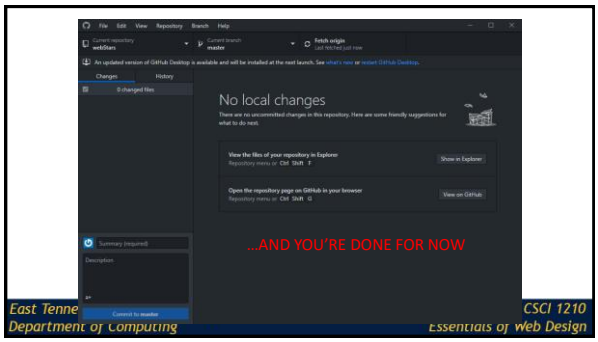
No local changes
...AND YOU'RE DONE FOR NOW
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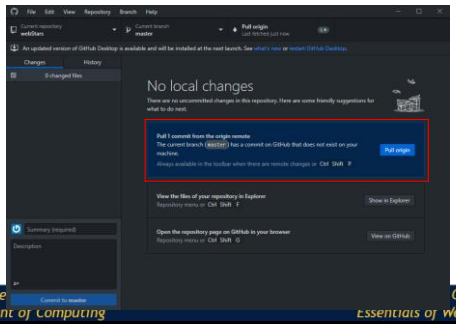
When you go back to do more work…

Someone else on your team may have made changes and/or additions and uploaded them to the repo

So, first thing you have to do is pull a new copy of the repo to your computer

40

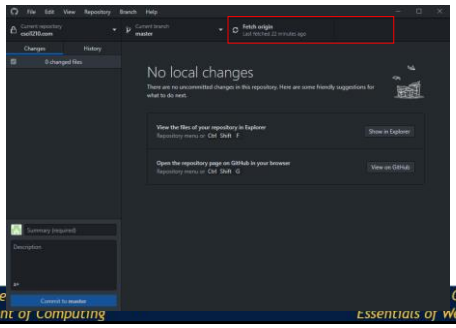


41

When you go back to do more work…

If you don't see the 'pull prompt,' pull anyway:

42



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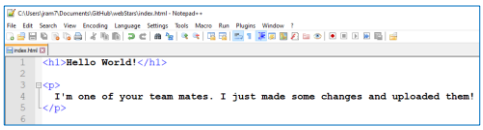
So, one of your teammates made a change…



The changes will be reflected in your local copy after you've pulled them

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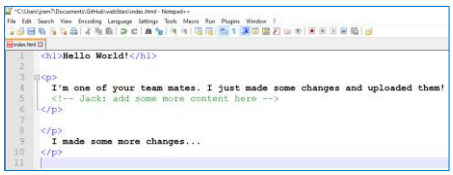
You can use comments to communicate with your team



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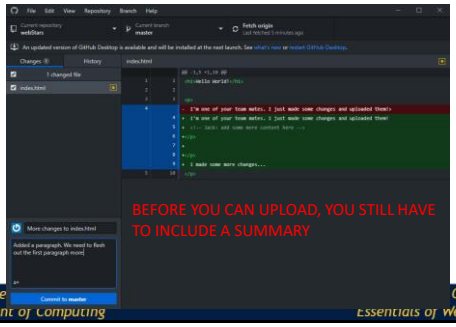

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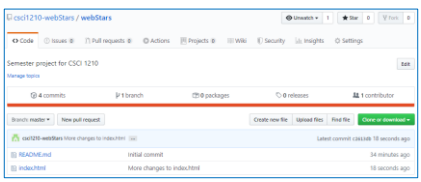
ON THE GITHUB WEBSITE, YOU CAN VIEW THE FILES AND HISTORY OF THE PROJECT



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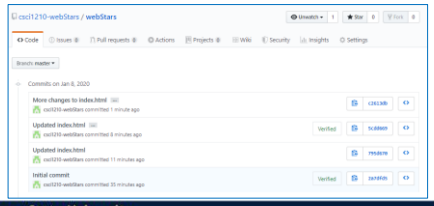
VIEW EACH COMMIT – THIS IS WHY THE SUMMARIES ARE REQUIRED; TO TRACK CHANGES



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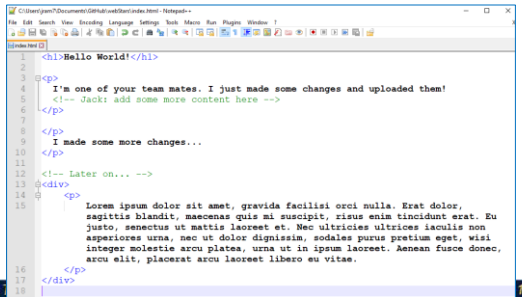

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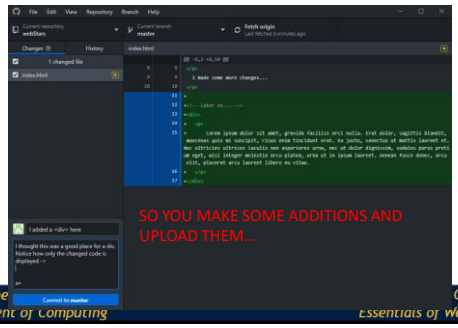

SO YOU MAKE SOME ADDITIONS AND UPLOAD THEM…

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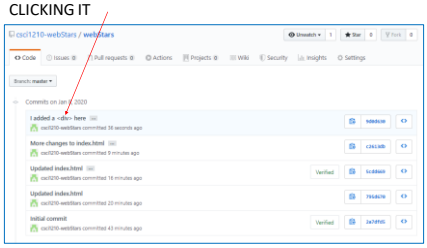
YOU CAN VIEW THE DETAILS OF EACH COMMIT BY CLICKING IT



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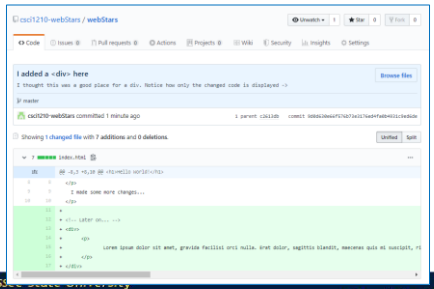

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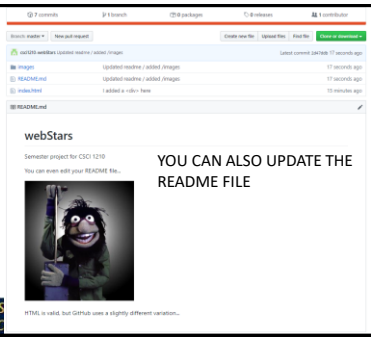

YOU CAN ALSO UPDATE THE README FILE

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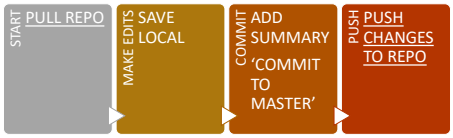
Code Repositories

This chart shows the workflow you'll follow when working on your project. It's important to remember that once you've made changes, they have to be uploaded to the repository so everyone will be able to access your work



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