



*presents*  
Source Control: Git and Github

# Source Control

What is it?

Source control, or version control, tracks and manages changes to documents and files over time.

# Git

Popular type of source control

**Git** is an open source distributed  
version control system

Meaning - a system that records changes over time.

# Features of Git source control

- Centralized
- Backups
- Historical overview of changes
- Access control
- Conflict resolution

# Concepts of source control

- Repository
- Revision
- Working copy
- Branching
- Merging

# What is a diff?

- A change at a line level between two versions
- Version control tracks diffs over time

# What is a repository (repo)?

- Stores code
- Each project should have its own repo
- Ability to view changes/commits over time
- Ability to rollback changes

# Commits

- Committing is your backup and bookmark
- A commit is a grouping of differences
- Commits are stored by the repo
- Commit whenever you complete something that works
  - Even if it is small
- Commit often

# Basic Commands

- `git status` // check for staged and untracked changes
- `git add .` // add files to staging (all files)
- `git commit -m "message"` // commit staged files
- `git pull` // pull code to local repo from remote repo
- `git push` // push commits to remote repo

# Basic Use

## Git

# Basic use & the correct order to use Git

Once you have successfully complete a small task

1. git add . (add the files)
2. git commit -m “message”
3. git pull
4. Test code and resolve conflicts
5. git push

# Github

Git online

**Github** is a collaborative community  
and workflow, built around git.

# Github Features

- Centralized
- Backups
- Historical overview of changes
- Access control
- Conflict resolution
- And much more!

Let's get started.

Visit <https://github.com>

# Collaboration

Why Github is AWESOME

# When collaborating

- When you sit down to work, pull any new commits.
  1. Complete a small task.
  2. Add the changes to staging. Commit the task.
  3. Pull and handle any merge conflicts (and commit again).
  4. Push your changes.
- Make sure when you are done for the day, you follow steps 1-4.

# The neat and miscellaneous

What you never knew you wanted to know about Github

What is a **README**?  
Why does it always have an **.md** extension?

What is a .gitignore file?  
Why can't I see it? How do I use it?

Can people steal my code on Github?  
What is open source?

Is there a way to see which of my team member's messed everything up?

Is there a way to see which of my team member's messed everything up?

YUP! It's called `git blame`