Introduction to  git

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Outline

- What is Git and why should you use it?
- How Git works
- Demo – GitHub Desktop

- Collaborating through Git
- Git and the command line
- Demo – Command line

What is Git?

- It’s a Distributed Version Control System
  - Keeps track of your file history and let’s you go back in time
  - Allows you to share your projects and work in teams
  - Provides systems of resolving conflicts

- The de facto standard for version control for developers
  - Handles everything from small solo projects to Google’s AI libraries

Why should you use git?

- Essential for keeping track of large projects
- Integrates with most IDE’s and many other cool tools
- It’s the best way to work in teams

Repositories

- The structure which keeps track of your project.
- Stored in a folder named .git along with your project.
- Contains **snapshots** of your project at earlier points in time.

Commits

- A **snapshot** of all the files in the project at a certain point in time.
- You decide when to make a commit and which file to be included.
- It is recommended to commit often!

GitHub

- The #1 platform for free (and paid) hosting of git repositories.
- Adds features to git
  - Issue tracking
  - Feature requests
  - Access Control
  - Project Statistics

A few more terms

- **Cloning** – Copying a repository from somebody else
- **Pulling** – Updating the local repository from a remote repository
- **Pushing** – Updating a remote repository from your local repository

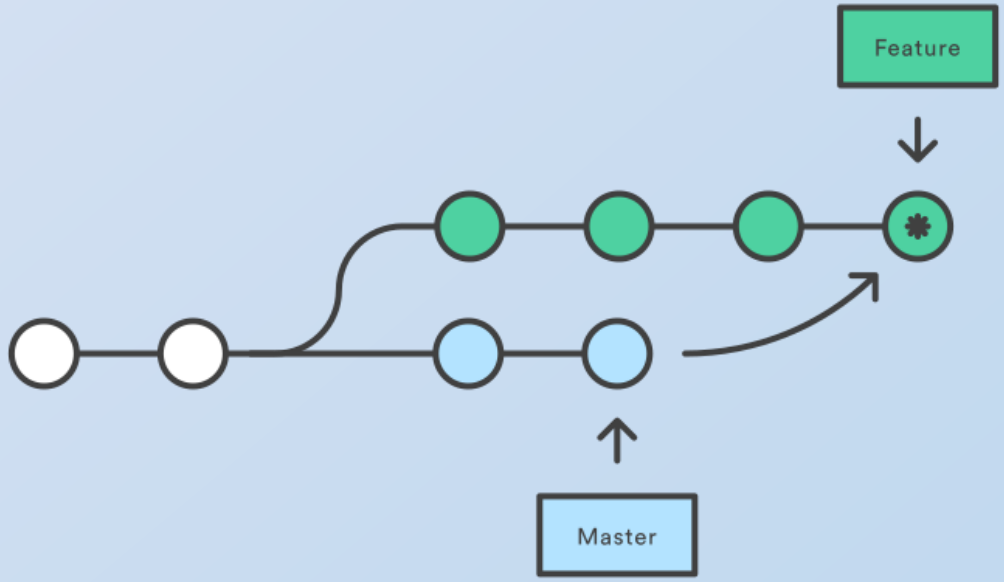
- Let’s see it in action..

Collaborating with git

- Git is mostly used in teams
- There can be issues when working on the same code simultaneously.
- To make things easier, people often use branches!

Branching – going off on your own

- A branch let's you change code without disturbing the other branches
- You can easily switch between branches
- Any pair of branches can be **merged**
- So far we have worked on the default **master** branch



Basic workflow

Review

- Git is the version control software
- You store your project in a repository and track changes using commits
- GitHub is often used to host repositories

Next steps

- You can’t learn Git only through a presentation, you have to use it
- Suggestions:

- Upload old school projects or side projects to GitHub
- Play around with Git with dummy files
- Use Git for all your future projects

Git and Github Resources

- netsoc.ucd.ie/learn_git/
- Youtube, Google and stackoverflow
- GitHub help pages
- Official git reference

Questions

Contact me: Facebook, Twitter)

I can be found in the Comp and Science buildings

or at the NetSoc coffee mornings Wednesdays 11am - 1pm!