Software Engineering Bootcamp

Hyperiondev

Recap: Version Control, Git and Github

Lecture – Housekeeping

❑ The use of disrespectful language is prohibited in the questions, this is a supportive, learning environment for all - please engage accordingly. (FBV)

❑ No question is daft or silly - **ask them!**

❑ There are Q/A sessions midway and at the end of the session, should you wish to ask any follow-up questions.

❑ You can also submit questions here: http://hyperiondev.com/sbc4-se-questions

❑ For all non-academic questions, please submit a query: www.hyperiondev.com/support

❑ Report a safeguarding incident: http://hyperiondev.com/safeguardreporting

❑ We would love your feedback on lectures:(FBV) https://hyperionde.wufoo.com/forms/zsgv4m40ui4i0g/

Github Repository - Lecture Examples/Slides

https://github.com/HyperionDevBootcamps/C4_SE_lecture_examples

Git Download/Cheat sheet

https://git-scm.com/downloads

https://github.com/git-guides/install-git

https://education.github.com/git-cheat-sheet-education.pdf

https://docs.github.com/en

Objectives

1. Recap
    a. Version Control
    b. Git
    c. Github
    d. Documentation

What is Version control?

- Also referred to as source control
- It is a system that tracks and manages changes to software code.

Why Version Control?

- **Collaboration**
    - Multiple people working on the same file at the same time.
    - Hard to keep track of what changes happen when.
    - Certain changes can be accidentally overwritten.

- **Storing Versions**
    - Being able to rollback code becomes a great emergency tactic, when bugs become too difficult to handle.

- **Understanding What Happened**
    - Full history of who made what changes.

Introducing Git

- Most widely used version control system.
- Free and open-source. Designed to handle a large variety of systems.
- Distributed architecture:
    - When you download a repository, you download the full history of changes to your local computer.
- Everything is run from the command-line using the git application.

Git Commands

Initialising a **new** local git repo, adding & commiting files and pushing them to remote repo

- git init
- git status
- git add <file_name>
- git commit -m “Write a comments”
- git remote add origin <url> to remote repository
- git branch -M main
- git push -u origin main

Git Commands

Adding & commiting changes to **existing** local repository repo and pushing them to remote repository (GitHub)

- git status
- git add <file_name>
- git commit -m “Write a comments”
- git push

Note: There is no need to specify the branch type ‘main’ or remote repository type ‘origin’

Git Commands

Creating a local git repository from your remote repository (on GitHub):

- git clone <URL>

If you already have a local repository and you want to update it to the latest version after changes have been made (by your team members):

- git pull

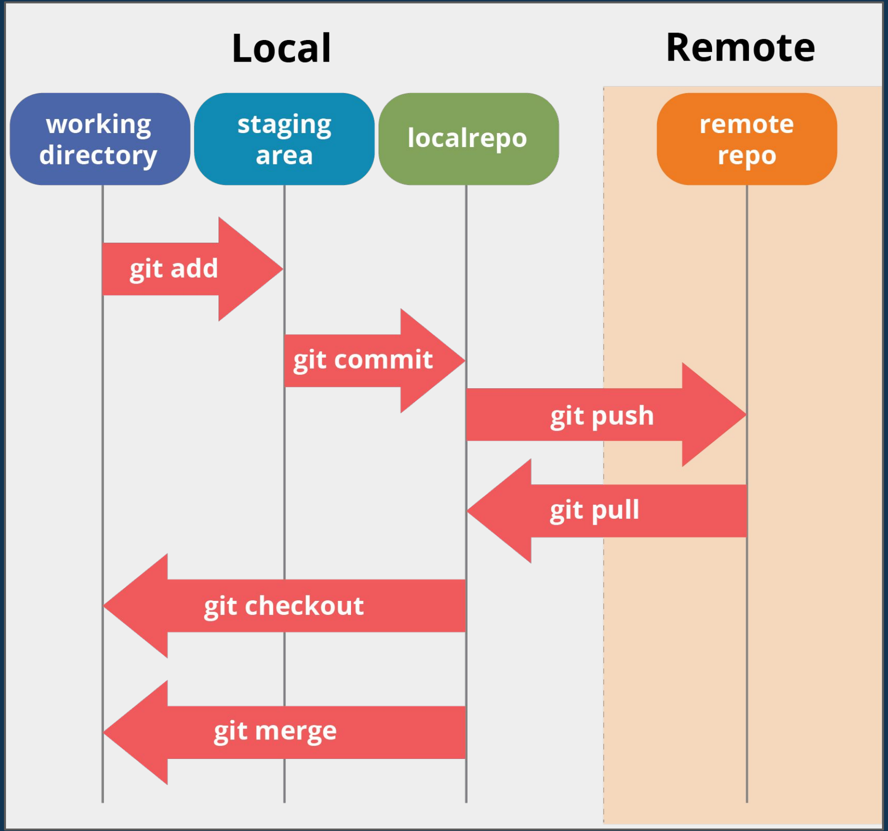
Git Commands - Stashing Changes

- git branch <branch_name>
- git checkout <branch_name>
- git add <file_name>
- git stash
- git checkout main
- git checkout <branch_name>
- git stash pop
- git commit -m “New feature added to file_name”
- git checkout main
- git merge <branch_name>

What is Github?

- GitHub is a code hosting platform for version control and collaboration
- It lets you and others work together on projects from anywhere in the world

Remote repository visual



Documentation: Contributors file

- CONTRIBUTING.md file is a short guide to how other people can help with your project.
- Always good to have in the root directory of your project.
- The file also contains data such as:
    - Creators and maintainers of the project.
    - What parts of the project contributors can work on.
    - Conventions to follow when contributing
    - How users can use this project to build upon their own.

Documentation: License file

- Licences help you manage and share intellectual property for code and materials on GitHub
- If you want to consume, share or contribute to anything in GitHub, you have to understand requirements associated with the relevant licence.
- For your repository to truly be open source, you'll need to license it so that others are free to use, change, and distribute the software.
- You can add a LINCESE.md file to your Github project by adding a new file on Github and typing LICENSE Github will then provide you with an option to generate a license file

Documentation: ReadMe file

- The readme file is used to explain the project and how we can install or use it.
- It also allows the uploader to add images and different formats to the text to help the reader navigate through the project easily
- A well-written readme file is more important if you intend to show these projects in your resume

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Q & A Section

Please use this time to ask any questions relating to the topic explained, should you have any

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Thank you for joining us

Take regular breaks.
Stay hydrated.
Avoid prolonged screen time.
Remember to have fun :)