What is GitHub?

After working in programming for a bit of time you might find yourself hearing the term *GitHub* being thrown around. Looking into it afterwards can be daunting and learning about how it works and why developers love using it can often feel like an information overload.

GitHub at its core is a **host**. It is a space for all sorts of developers to upload their code for everyone to see it. It is most commonly used for developers *to work together* with one another on a specific program and *version control*. For you to understand exactly how *GitHub* works you must understand two key principles:

- Git
- Version control

Git is an ***open-source*** version control system. It allows developers to control the different versions and commit changes using command line. For newcomers to version control software it can be extremely difficult to learn at first, which is why most companies opt to using GitHub instead.

Version control allows people track the **history** of a program. This works through two methods: **branching** and **merging**.

- **Branching:** branching allows a developer to clone a program so they can edit the code for themselves without affecting the original program.
- **Merging:** merging allows the developer to merge the original code and their branch together. This process can be reverted if necessary.

After understanding these two key principles behind *GitHub* we can explain how it works using these new terms! **GitHub is a user-friendly interface which allows users to utilize *Git* without learning the command line codes for it.** It allows users to branch and merge different programs to edit and contribute to a project!

GitHub

For more information on the HSI program at FAU visit: http://eng.fau.edu/research/hsi/

There are many new terms you must learn when first using GitHub. Below is a list of words that you will very quick run into and their definition:

DEFINTIONS

Command-line: a text-interface use to process commands.

Branching: creating copies of a program to work in parallel

Merging: bringing together two different copies of a program together

Repository: name and location of all the project files used in a program. It is often abbreviated as repo and also contains the entire history of changes.

Commit: uploading a file to a branch

Branch: a duplicate of the main program which can be edited

master-branch: the original program, where the final program is located

Pull request: a request to edit a branch operated by another person

Push: commits local changes to the repository

Fork: clones a repository into your profile, essentially creating a copy where you can edit everything
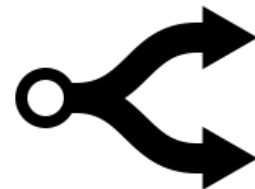
FAU Courses

CEN4010 – Principles of Software Engineering

CEN4214 – Software-Hardware Co-Design

CEN4910 – Software Engineering Project

EEE3300 – Electronics 1

Sources

https://kinsta.com/knowledgebase/what-is-github/
https://github.com/
https://thenounproject.com/term/fork/60030/
https://git-scm.com/

git

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