

# How does GitHub work?

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# What is Git?

Git is what we call a "version control system". It allows you to manage a project in a structured way, letting you view the history of your project, modified files, and who to blame for those bad changes in large projects.

Git is the most popular version control system, but there are alternatives, namely SVN, Mercurial, and Perforce.

# What is GitHub?

GitHub allows you to host your Git server online. It allows members of a team to collaborate on a project, as well as allow members of the open-source community to collaborate on your projects, making issues and changes (known as "pull requests").

I will be teaching you how to contribute to projects using the extremely common workflow

- Fork
- Clone
- Edit
- Stage/Commit
- Push
- Pull Request
- Merge! 🚀🚀🚀

# Fork

The first step to contributing to an open-source project on GitHub is to fork. Forking creates your own copy of the code from the main repository.

Any changes you make will only be made to your copy, so that you do not mess up the code that the main developer worked so hard on.

# Clone

The second step is cloning your code. This step is pretty simple, and you can just run

```
git clone https://github.com/<username>/<reponame>
```

This creates a local copy of your code that you can edit.

# Edit

Now, you make your edits to the code. This could be bug fixes, enhancements, and any other things you think would make the project better.

# Stage/Commit

Now, you commit your changes. This is the more important way of "saving" your code in a git repository. This commits your changes to the repository, making it part of the repository, rather than just changes that you randomly made.

# Push

Pushing your code will then push it to your GitHub repository. So far, you have only been editing your local git repository. Pushing the code makes it available to GitHub.



# Pull Request

This is the **most important** step about contributing to open-source... Requesting your changes to be added to the main repository!

Pull requests merge your changes into the main repository, and allow others to use your totally awesome changes!

# Merge!

Opening a pull request is a process which is very easy, but getting it merged is the hard part. To increase your chances of the repository maintainer accepting the code, make sure your code is documented, clean, and safe. Make sure to not write 🍷 code, as it makes it harder to maintain in the future, and is generally discouraged.

When your code gets merged, it will become part of the main repo, and your name will be in the "contributors" section of the repository!

If your code unfortunately does not get merged, don't worry! Make sure to read comments made by maintainers, and modify your pull request to their liking.

# The Golden Rule of Open Source

The **Golden Rule** of Open Source is... *Always be kind!!!*

Repository maintainers are doing everything they are for free, and providing their code to the public at no charge to you. If your Pull Request does not get accepted, do NOT flame the maintainers or insult them in any way. They are trying their hardest to keep their codebase maintainable, and there are many reasons your changes may be denied. Accept that it was denied, try to question kindly why it was declined, and use that information to make a better one next time.

Open source is a community which, as the name may suggest, open! Do not exclude others and always be respectful.