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Fork a repository

A fork is a new repository that shares code and visibility settings with the original "upstream" repository.

Mac   **Windows**   Linux

GitHub CLI   Desktop   **Web browser**

About forks

A fork is a new repository that shares code and visibility settings with the original "upstream" repository. Forks are often used to iterate on ideas or changes before they are proposed back to the upstream repository, such as in open source projects or when a user does not have write access to the upstream repository. For more information, see "Working with forks."

Propose changes to someone else's project

For example, you can use forks to propose changes related to fixing a bug. Rather than logging an issue for a bug you have found, you can:

- Fork the repository.
- Make the fix.
- Submit a pull request to the project owner.

Use someone else's project as a starting point for your own idea.

Open source software is based on the idea that by sharing code, we can make better, more reliable software. For more information, see the "About the Open Source Initiative" on the Open Source Initiative.

For more information about applying open source principles to your organization's development work on GitHub, see GitHub's white paper "An introduction to innersource."

When creating your public repository from a fork of someone's project, make sure to include a license file that determines how you want your project to be shared with others. For more information, see "Choose an open source license" at choosealicense.com.

For more information on open source, specifically how to create and grow an open source project, we've created Open Source Guides that will help you foster a healthy open source community by recommending best practices for creating and maintaining repositories for your open source project. You can also take a free GitHub Skills course on maintaining open source communities.

## Prerequisites

If you haven't yet, first set up Git and authentication with GitHub.com from Git. For more information, see "Set up Git."

Forking a repository

You might fork a project to propose changes to the upstream repository. In this case, it's good practice to regularly sync your fork with the upstream repository. To do this, you'll need to use Git on the command line. You can practice setting the upstream repository using the same octocat/Spoon-Knife repository you just forked.

1 On GitHub.com, navigate to the octocat/Spoon-Knife repository.

2 In the top-right corner of the page, click **Fork**.
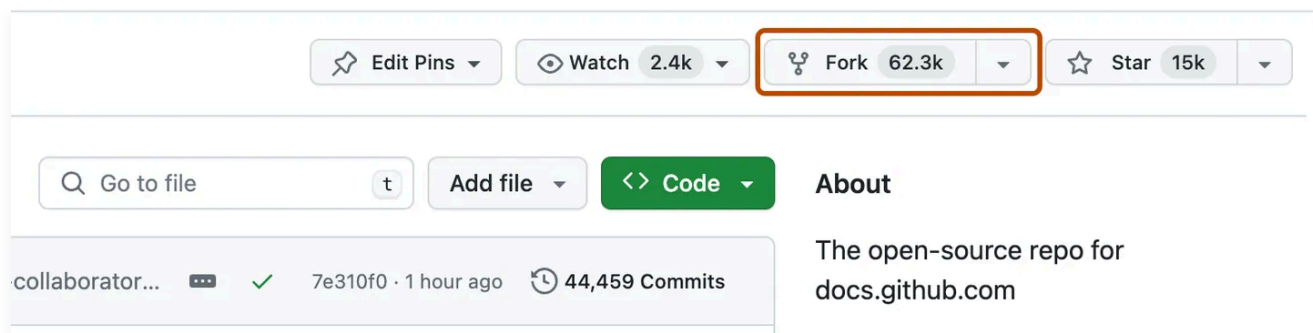
3   Under "Owner," select the dropdown menu and click an owner for the forked repository.

4   By default, forks are named the same as their upstream repositories. Optionally, to further
    distinguish your fork, in the "Repository name" field, type a name.

5   Optionally, in the "Description" field, type a description of your fork.

6   Optionally, select **Copy the DEFAULT branch only**.

    For many forking scenarios, such as contributing to open-source projects, you only need to
    copy the default branch. If you do not select this option, all branches will be copied into the
   new fork.

7   Click **Create fork**.

> **Note:** If you want to copy additional branches from the upstream repository, you can do so
> from the **Branches** page. For more information, see "[Creating and deleting branches within
> your repository](#)."

Cloning your forked repository

Right now, you have a fork of the Spoon-Knife repository, but you do not have the files in that
repository locally on your computer.

1   On GitHub.com, navigate to **your fork** of the Spoon-Knife repository.
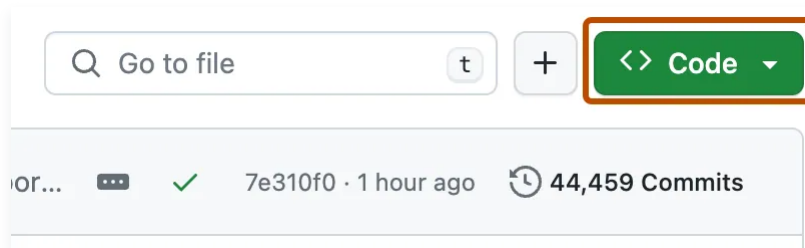
2   Above the list of files, click <> **Code**.

3   Copy the URL for the repository.

    ○ To clone the repository using HTTPS, under "HTTPS", click 📋.

- To clone the repository using an SSH key, including a certificate issued by your organization's SSH certificate authority, click **SSH**, then click 📋.

- To clone a repository using GitHub CLI, click **GitHub CLI**, then click ⧉.
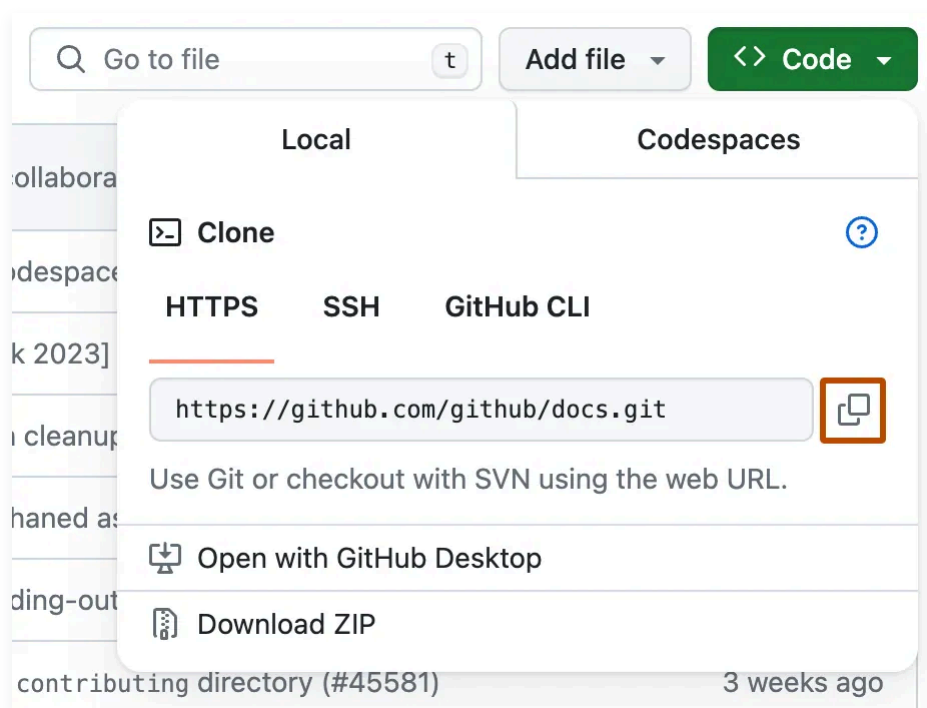
4   Open Git Bash.

5   Change the current working directory to the location where you want the cloned directory.

6   Type `git clone` , and then paste the URL you copied earlier. It will look like this, with your GitHub username instead of `YOUR-USERNAME` :

```
git clone https://github.com/YOUR-USERNAME/Spoon-Knife
```
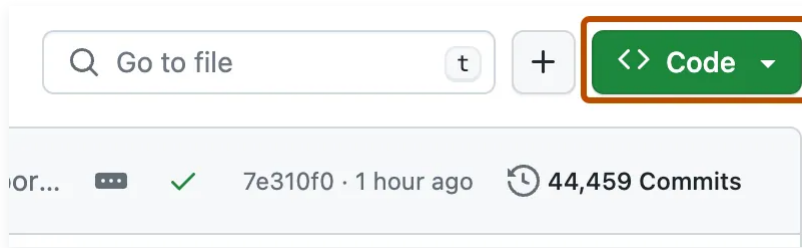
7   Press **Enter**. Your local clone will be created.

```
$ git clone https://github.com/YOUR-USERNAME/Spoon-Knife
> Cloning into `Spoon-Knife`...
> remote: Counting objects: 10, done.
> remote: Compressing objects: 100% (8/8), done.
> remote: Total 10 (delta 1), reused 10 (delta 1)
> Unpacking objects: 100% (10/10), done.
```

Configuring Git to sync your fork with the upstream repository

When you fork a project in order to propose changes to the upstream repository, you can configure Git to pull changes from the upstream repository into the local clone of your fork.

1   On GitHub.com, navigate to the octocat/Spoon-Knife repository.

2   Above the list of files, click <> **Code**.

3   Copy the URL for the repository.

- To clone the repository using HTTPS, under "HTTPS", click ⧉.

- To clone the repository using an SSH key, including a certificate issued by your organization's SSH certificate authority, click **SSH**, then click ⧉.

- To clone a repository using GitHub CLI, click **GitHub CLI**, then click ⧉.
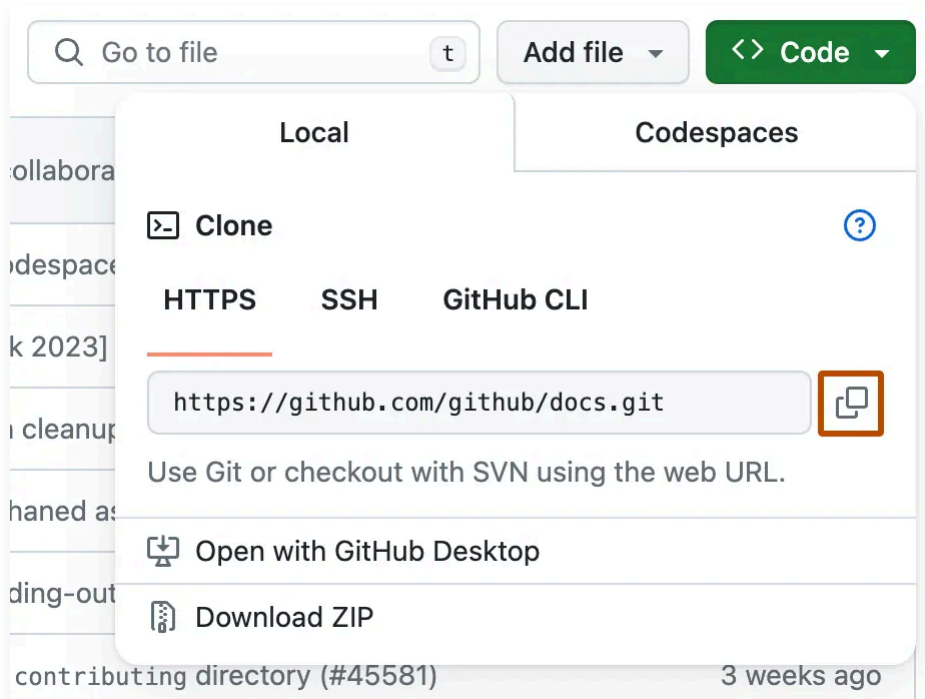
4   Open Git Bash.

5   Change directories to the location of the fork you cloned.

- To go to your home directory, type just `cd` with no other text.

- To list the files and folders in your current directory, type `ls`.

- To go into one of your listed directories, type `cd YOUR-LISTED-DIRECTORY`.

- To go up one directory, type `cd ..`.

6   Type `git remote -v` and press **Enter**. You will see the current configured remote repository for your fork.

```
$ git remote -v
> origin  https://github.com/YOUR-USERNAME/YOUR-FORK.git (fetch)
> origin  https://github.com/YOUR-USERNAME/YOUR-FORK.git (push)
```

7   Type `git remote add upstream`, and then paste the URL you copied in Step 3 and press **Enter**. It will look like this:

```
git remote add upstream https://github.com/ORIGINAL-OWNER/Spoon-Knife.git
```

8   To verify the new upstream repository you have specified for your fork, type `git remote -v` again. You should see the URL for your fork as `origin`, and the URL for the upstream repository as `upstream`.

```
$ git remote -v
> origin    https://github.com/YOUR-USERNAME/YOUR-FORK.git (fetch)
> origin    https://github.com/YOUR-USERNAME/YOUR-FORK.git (push)
> upstream  https://github.com/ORIGINAL-OWNER/ORIGINAL-REPOSITORY.git (fetch)
> upstream  https://github.com/ORIGINAL-OWNER/ORIGINAL-REPOSITORY.git (push)
```

Now, you can keep your fork synced with the upstream repository with a few Git commands. For more information, see "Syncing a fork."

Editing a fork

You can make any changes to a fork, including:

- **Creating branches:** *Branches* allow you to build new features or test out ideas without putting your main project at risk.
- **Opening pull requests:** If you want to contribute back to the upstream repository, you can send a request to the original author to pull your fork into their repository by submitting a pull request.

Find another repository to fork

Fork a repository to start contributing to a project. You can fork any public repository to your personal account, or to an organization where you have permission to create repositories. If you have access to a private repository and the owner permits forking, you can fork the repository to your personal account, or to an organization on GitHub Team where you have permission to

create repositories. You cannot fork a private repository to an organization using GitHub Free. For more information about GitHub Team and GitHub Free, see "GitHub's plans." For more information about when you can fork a repository, see "About permissions and visibility of forks."

You can browse Explore GitHub to find projects and start contributing to open source repositories. For more information, see "Finding ways to contribute to open source on GitHub."

Next steps

You have now forked a repository, practiced cloning your fork, and configured an upstream repository.

- For more information about cloning the fork and syncing the changes in a forked repository from your computer, see "Set up Git."

- You can also create a new repository where you can put all your projects and share the code on GitHub. Creating a repository for your project allows you to store code in GitHub. This provides a backup of your work that you can choose to share with other developers. For more information, see "Quickstart for repositories."

- Each repository on GitHub is owned by a person or an organization. You can interact with the people, repositories, and organizations by connecting and following them on GitHub. For more information, see "Finding inspiration on GitHub."

- GitHub has a great support community where you can ask for help and talk to people from around the world. Join the conversation on GitHub Community.

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