Fetching a remote

When working with other people's repositories, there are a few basic Git commands to remember:

- `git clone`
- `git fetch`
- `git merge`
- `git pull`

These commands are very useful when interacting with a remote repository. `clone` and `fetch` download remote code from a repository's remote URL to your local computer, `merge` is used to merge different people's work together with yours, and `pull` is a combination of `fetch` and `merge`.

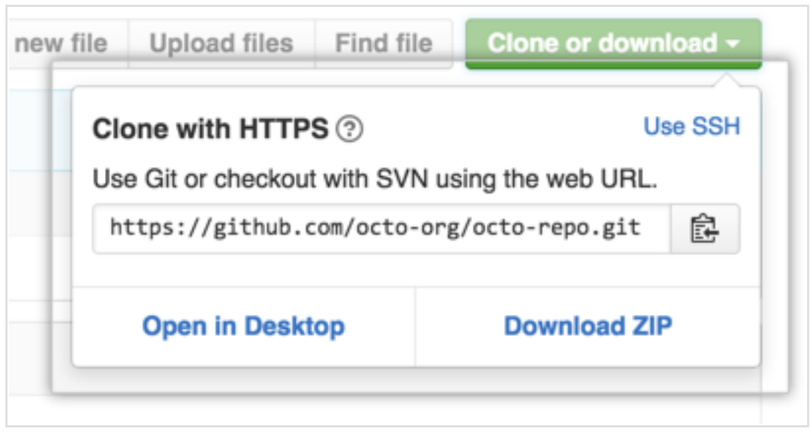
We'll go in-depth on these commands below.

Clone

To grab a complete copy of another user's repository, use `git clone` like this:

```
$ git clone https://github.com/USERNAME/REPOSITORY.git
# Clones a repository to your computer
```

You can choose from several different URLs when cloning a repository. While logged in to GitHub, these URLs are available below the repository details:



When you run `git clone`, the following actions occur:

- A new folder called `repo` is made
- It is initialized as a Git repository
- A remote named `origin` is created, pointing to the URL you cloned from
- All of the repository's files and commits are downloaded there
- The default branch (usually called `master`) is checked out

For every branch `foo` in the remote repository, a corresponding remote-tracking branch `refs/remotes/origin/foo` is created in your local repository. You can usually abbreviate such remote-tracking branch names to `origin/foo`.

Fetch

Use `git fetch` to retrieve new work done by other people. Fetching from a repository grabs all the new remote-tracking branches and tags *without* merging those changes into your own branches.

If you already have a local repository with a remote URL set up for the desired project, you can grab all the new information by using `git fetch *remotename*` in the terminal:

```
$ git fetch remotename
# Fetches updates made to a remote repository
```

Otherwise, you can always add a new remote and then fetch.

Merge

Merging combines your local changes with changes made by others.

Typically, you'd merge a remote-tracking branch (i.e., a branch fetched from a remote repository) with your local branch:

```
$ git merge remotename/branchname
# Merges updates made online with your local work
```

Pull

`git pull` is a convenient shortcut for completing both `git fetch` and `git merge` in the same command:

```
$ git pull remotename branchname
# Grabs online updates and merges them with your local work
```

Because `pull` performs a merge on the retrieved changes, you should ensure that your local work is committed before running the `pull` command. If you run into a merge conflict you cannot resolve, or if you decide to quit the merge, you can use `git merge --abort` to take the branch back to where it was in before you pulled.

Further reading

- "Working with Remotes" from the *Pro Git* book"
- "Troubleshooting connectivity problems"