

Collaborate with git and GitHub

Introductions and Overview

Overview

What and Why

Repository Creation

Adding Files and Making Changes

Branching and Merging

Collaborating

What and Why

Why are they useful?



What is git?

```
Terminal
mark@exclamationmark ~/source/sample_app mark/test $ echo "New" > text.txt
mark@exclamationmark ~/source/sample_app mark/test $ echo "Append" >> Gemfile
mark@exclamationmark ~/source/sample_app mark/test * $ git status
# On branch mark/test
# Changes not staged for commit:
#   (use "git add <file>..." to update what will be committed)
#   (use "git checkout -- <file>..." to discard changes in working directory)
#
#       modified:   Gemfile
#
# Untracked files:
#   (use "git add <file>..." to include in what will be committed)
#
#       text.txt
no changes added to commit (use "git add" and/or "git commit -a")
mark@exclamationmark ~/source/sample_app mark/test * $
```

What is GitHub?

The screenshot displays the GitHub web interface for the 'meteor/meteor' repository. The top navigation bar includes the GitHub logo, a search bar, and links for 'Pull requests', 'Issues', and 'Gist'. The main content area shows a list of recent activity:

- 2 minutes ago:** jeffreykrodgers commented on issue [meteor/meteor#8528](#). Comment: "Aaah it was my mistake. Ugh. Found it while I was making that small, runnable reproduction. The issue was coming from the collection2 package. I ha..."
- 2 minutes ago:** jeffreykrodgers closed issue [meteor/meteor#8528](#). Comment: "Booleans writing to mongodb as strings"
- 4 minutes ago:** abernix created tag [release/METEOR@1.4.4-rc.3](#) at [meteor/meteor](#)
- an hour ago:** abernix pushed to [release-1.4.3.x](#) at [meteor/meteor](#). Commits: [c26a51](#) Bump package versions for 1.4.4-rc.3 release. [01d7aca](#) Add '-rc.n' suffix to 'webapp' before republishing. [5 more commits »](#)
- an hour ago:** abernix closed issue [meteor/meteor#8527](#). Comment: "Having trouble creating a Meteor package that uses the 'ecmascript' package"
- an hour ago:** abernix commented on issue [meteor/meteor#8527](#). Comment: "That sounds right. [Template](#) is not available on the server, so if you use it there, it will fail! Glad you got it figured out!"

On the right side, there is a job listing from 'Contactually' and a section titled 'Repositories you contribute to' showing a list of repositories:

Repository	Stars
classtracks/classtracks.github.io	0
vagrant-templat.../meteor	0
vagrant-templat.../mantra	5
vagrant-templat.../node	0
classtracks/conventions	1

Below this is a section for 'Your repositories' with a 'New repository' button and a list of repositories:

Repository
meteor/meteor
meteor-boilerplate
linux-setup
book-importer
dotfiles

Setup

Installing git

git-scm.com/downloads

git-scm.com/downloads



git --distributed-even-if-your-workflow-isnt

Search entire site...

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[Logos](#)

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The entire **Pro Git book** written by Scott Chacon and Ben Straub is available to [read online for free](#). Dead tree versions are available on [Amazon.com](#).

Downloads



Older releases are available and the Git source repository is on [GitHub](#).



GUI Clients

Git comes with built-in GUI tools (**git-gui**, **gitk**), but there are several third-party tools for users looking for a platform-specific experience.

[View GUI Clients →](#)

Logos

Various Git logos in PNG (bitmap) and EPS (vector) formats are available for use in online and print projects.

[View Logos →](#)

Git via Git

If you already have Git installed, you can get the latest development version via Git itself:

```
git clone https://github.com/git/git
```

You can also always browse the current contents of the git repository using the [web interface](#).

Repository Creation

```
mkdir git-course
```

```
git init
```

Adding Files and Making Changes

```
git status
```

Create a file

```
github.com/magic-of-code/git
```

```
chapter_1.txt
```



```
git add
```

```
git commit -m 'text'
```

Changing a file

`github.com/magic-of-code/git`

`chapter_1_p2.txt`

```
git diff
```

```
git log
```


Just one problem



GitHub account

`github.com`

github.com

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Built for developers


GitHub is a development platform inspired by the way you work. From **open source** to **business**, you can host and review code, manage projects, and build software alongside millions of other developers.


Use at least one letter, one numeral, and seven characters.
[Sign up for GitHub](#)
By clicking "Sign up for GitHub", you agree to our [terms of service](#) and [privacy policy](#). We'll occasionally send you account related emails.


 [Search GitHub](#) [Pull requests](#) [Issues](#) [Gist](#) [+](#) 

Welcome to GitHub

You've taken your first step into a larger world,

 **Completed**
Set up a personal account

 **Step 2:**
Choose your plan

 **Step 3:**
Tailor your experience

Choose your personal plan

☒ Unlimited public repositories for free.

☐ Unlimited private repositories for \$7/month.

Don't worry, you can cancel or upgrade at any time.

☐ **Help me set up an organization next**
Organizations are separate from personal accounts and are best suited for businesses who need to manage permissions for many employees.
[Learn more about organizations.](#)

Both plans include:

- ✓ Collaborative code review
- ✓ Issue tracking
- ✓ Open source community
- ✓ Unlimited public repositories
- ✓ Join any organization

[Continue](#)

Break

Recap: How do we...

Initialize a repository?

```
init
```

Select files we changed?

```
add
```

Check for changes? (2)

```
status
```

 and

```
diff
```

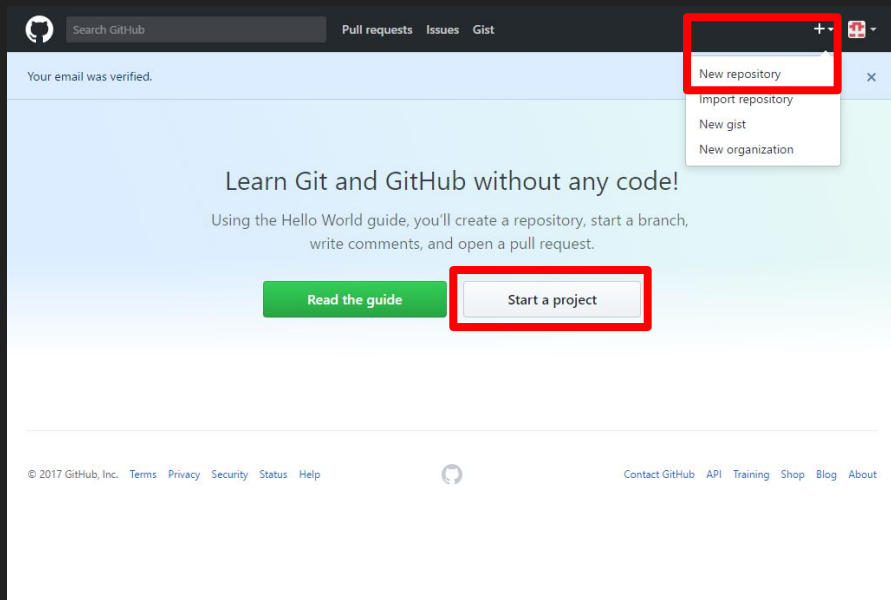
Record changes?

```
commit -m
```

See the history?

```
log
```

github.com



The screenshot shows the GitHub homepage. At the top, there's a navigation bar with the GitHub logo, a search bar, and links for Pull requests, Issues, and Gist. A dropdown menu is open from the top right corner, showing options: New repository, Import repository, New gist, and New organization. The 'New repository' option is highlighted with a red box. Below the navigation bar, a message says 'Your email was verified.' The main content area features the text 'Learn Git and GitHub without any code!' followed by instructions: 'Using the Hello World guide, you'll create a repository, start a branch, write comments, and open a pull request.' There are two buttons: 'Read the guide' (green) and 'Start a project' (grey). The 'Start a project' button is highlighted with a red box. At the bottom, there's a footer with copyright information and links for Terms, Privacy, Security, Status, Help, Contact GitHub, API, Training, Shop, Blog, and About.

Search GitHub Pull requests Issues Gist

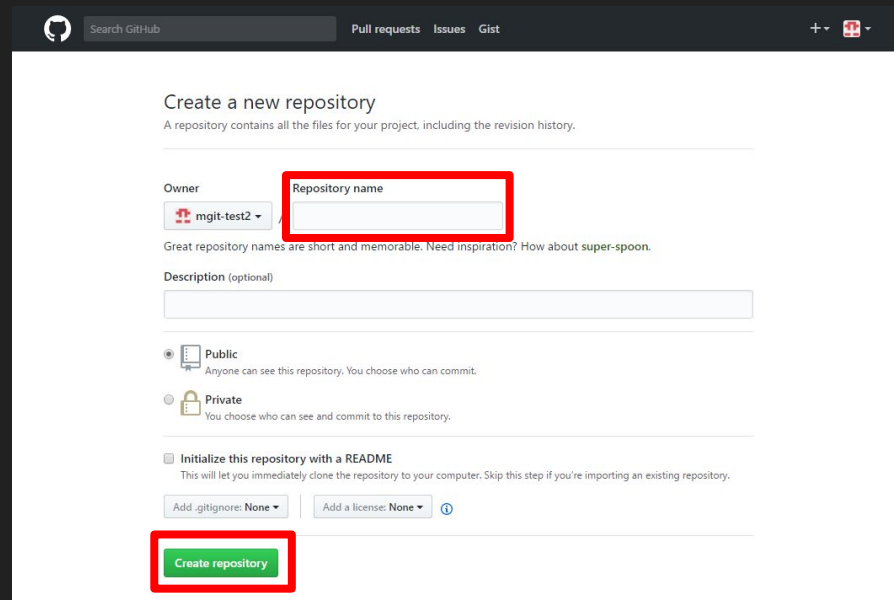
Your email was verified.

Learn Git and GitHub without any code!

Using the Hello World guide, you'll create a repository, start a branch, write comments, and open a pull request.

[Read the guide](#) [Start a project](#)

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The screenshot shows the 'Create a new repository' page on GitHub. The page title is 'Create a new repository' with a subtitle: 'A repository contains all the files for your project, including the revision history.' The 'Owner' dropdown is set to 'mgit-test2'. The 'Repository name' input field is highlighted with a red box. Below the name field, there's a note: 'Great repository names are short and memorable. Need inspiration? How about super-spoon.' The 'Description (optional)' field is empty. The 'Public' radio button is selected, with a note: 'Anyone can see this repository. You choose who can commit.' The 'Private' radio button is also visible, with a note: 'You choose who can see and commit to this repository.' The 'Initialize this repository with a README' checkbox is checked, with a note: 'This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.' There are two dropdowns: 'Add .gitignore: None' and 'Add a license: None'. The 'Create repository' button (green) is highlighted with a red box.

Search GitHub Pull requests Issues Gist

Create a new repository

A repository contains all the files for your project, including the revision history.

Owner **mgit-test2**

Great repository names are short and memorable. Need inspiration? How about super-spoon.

Description (optional)

☒ **Public**
Anyone can see this repository. You choose who can commit.

☐ **Private**
You choose who can see and commit to this repository.

☒ **Initialize this repository with a README**
This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: **None** Add a license: **None** ⓘ

[Create repository](#)

```
git remote add origin url
```

```
git push -u origin master
```

Branching and Merging

```
git checkout -b name
```

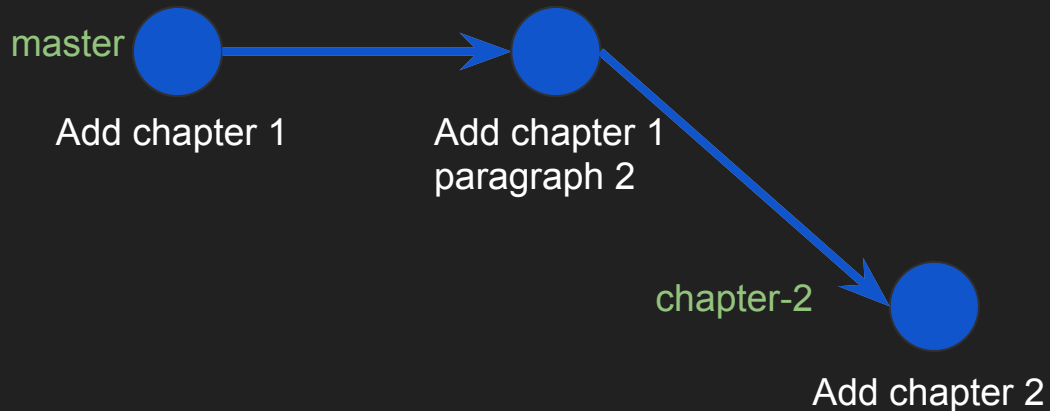
Create a file

`github.com/magic-of-code/git`

`chapter_2.txt`

git branch

Visualizing our work



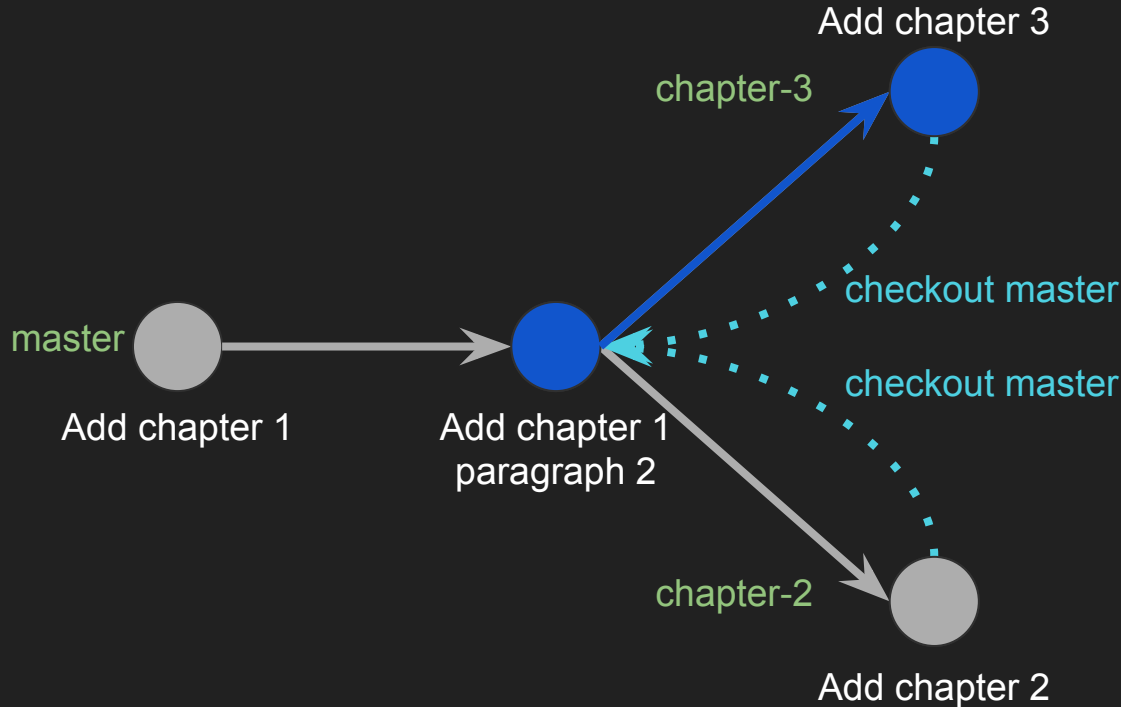
```
git checkout name
```

Create a file

```
github.com/magic-of-code/git
```

```
chapter_3.txt
```

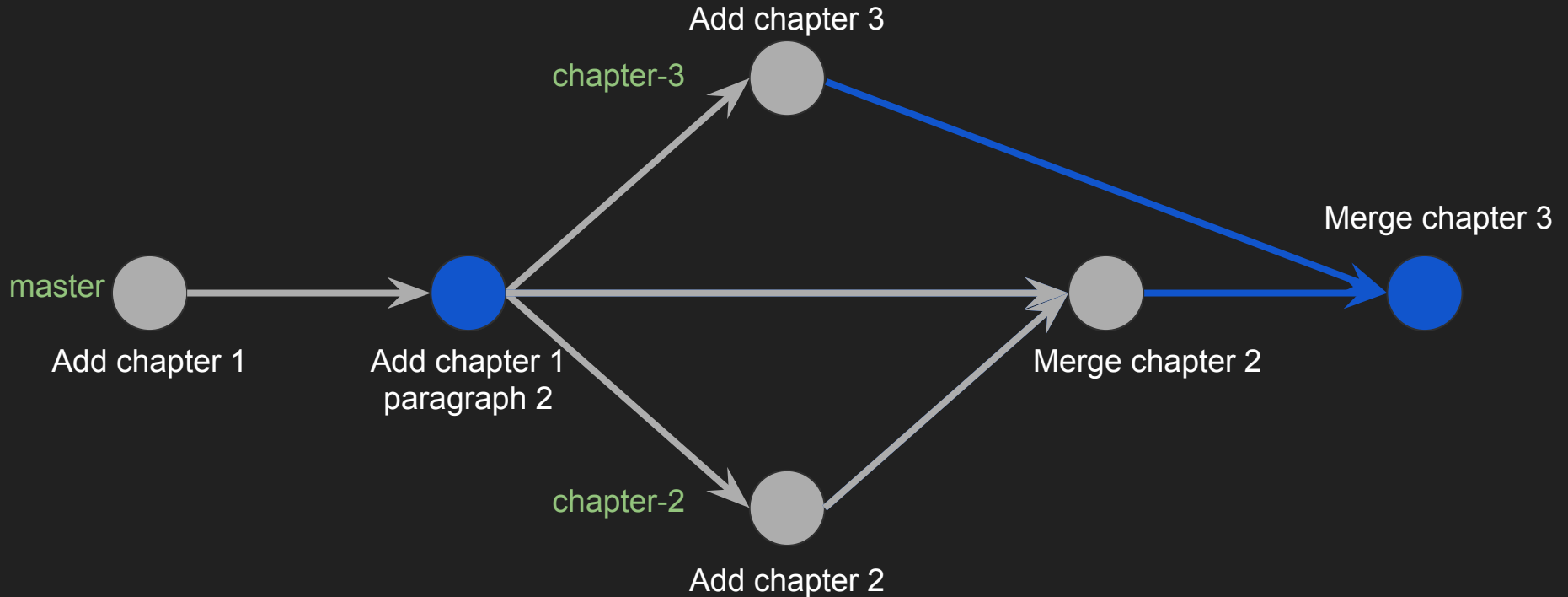
Visualizing our work



```
git merge name
```

Pull Request

Visualizing our work



Merge Conflicts

Merge Conflicts

```
MINGW64/c:/Users/merlin/code/freelance/magic-of-code-curriculum/git-course
~/code/freelance/magic-of-code-curriculum/git-course (merge-conflicts)
$ git merge add-intro
Updating c6490d4..de8073c
Fast-forward
 chapter_2.txt | 4 ++++
 1 file changed, 4 insertions(+)

~/code/freelance/magic-of-code-curriculum/git-course (merge-conflicts)
$ git merge add-dedication
Auto-merging chapter_2.txt
CONFLICT (content): Merge conflict in chapter_2.txt
Automatic merge failed; fix conflicts and then commit the result.

~/code/freelance/magic-of-code-curriculum/git-course (merge-conflicts|MERGING)
$ git status
On branch merge-conflicts
You have unmerged paths.
  (fix conflicts and run "git commit")

Unmerged paths:
  (use "git add <file>..." to mark resolution)

        both modified:   chapter_2.txt
```

Merge Conflicts

```
lincode/freelance/magic-of-code-curriculum/git-course — Atom
cd Packages help

README.md | chapter_2.txt

1 <<<<<<< HEAD
2 Intro
3
4 This chapter is about...
5 =====
6 Dedication
7
8 Dedicated to Neo
9 >>>>>> add-dedication
10
11 Chapter 2 - The Pool of Tears
12
```

Break

Recap: How do we...

Start a new branch?

```
checkout -b name
```

List branches?

```
branch
```

Change branches?

```
checkout name
```

Merge branches?

```
merge name and PR
```

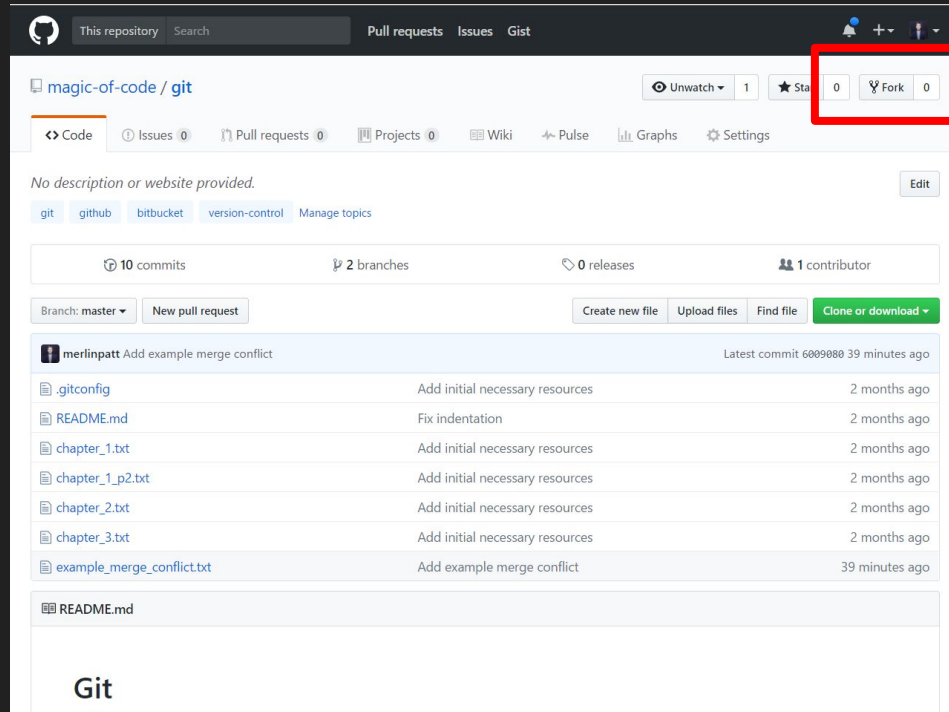
Handle conflicts?

Pick the changes

Collaborating

Fork

github.com/magic-of-code/git



The screenshot shows the GitHub repository page for `magic-of-code / git`. The repository has 10 commits, 2 branches, 0 releases, and 1 contributor. The 'Fork' button is highlighted with a red box, and the '0' count next to it is also highlighted. The repository is currently on the `master` branch. The commit history shows a series of commits by `merlinpatt`, including `.gitconfig`, `README.md`, `chapter_1.txt`, `chapter_1_p2.txt`, `chapter_2.txt`, `chapter_3.txt`, and `example_merge_conflict.txt`. The repository is currently on the `master` branch.

magic-of-code / git

Unwatch 1 ★ Stars 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Pulse Graphs Settings

No description or website provided. Edit

git github bitbucket version-control Manage topics

10 commits 2 branches 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file Clone or download

merlinpatt Add example merge conflict Latest commit 6009080 39 minutes ago

.gitconfig	Add initial necessary resources	2 months ago
README.md	Fix indentation	2 months ago
chapter_1.txt	Add initial necessary resources	2 months ago
chapter_1_p2.txt	Add initial necessary resources	2 months ago
chapter_2.txt	Add initial necessary resources	2 months ago
chapter_3.txt	Add initial necessary resources	2 months ago
example_merge_conflict.txt	Add example merge conflict	39 minutes ago

README.md

Git


```
git clone
```

```
git remote add upstream
```

```
git pull
```

Pull Request

Bonus Material

Private repos

```
git br -D
```

```
git log
```

```
--pretty=format:\"%h %ad | %s%d [%an]\"
```


```
--graph
```

```
--date=short
```


Building a Website

Create a new repository

A repository contains all the files for your project, including the revision history.

Owner
 magic-of-code ▾

Repository name
magic-of-code.github.io ✓

Great repository names are short and memorable. Need inspiration? How about [solid-octo-enigma](#).

Description (optional)

☒ **Public**
Anyone can see this repository. You choose who can commit.

☐ **Private**
You choose who can see and commit to this repository.

☐ **Initialize this repository with a README**
This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: **None** ▾

Add a license: **None** ▾ ⓘ

Create repository