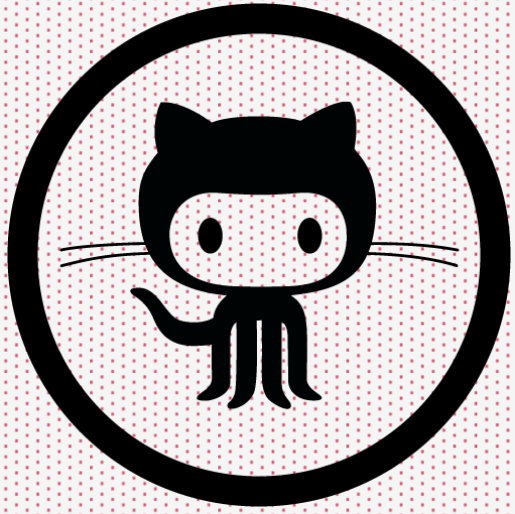
Git 101:

Git and GitHub for Beginners

HubSpot

Overview

1. Install git and create a GitHub account
2. What is git?
3. How does git work?
4. What is GitHub?
5. Quick example using git and GitHub



Github icon

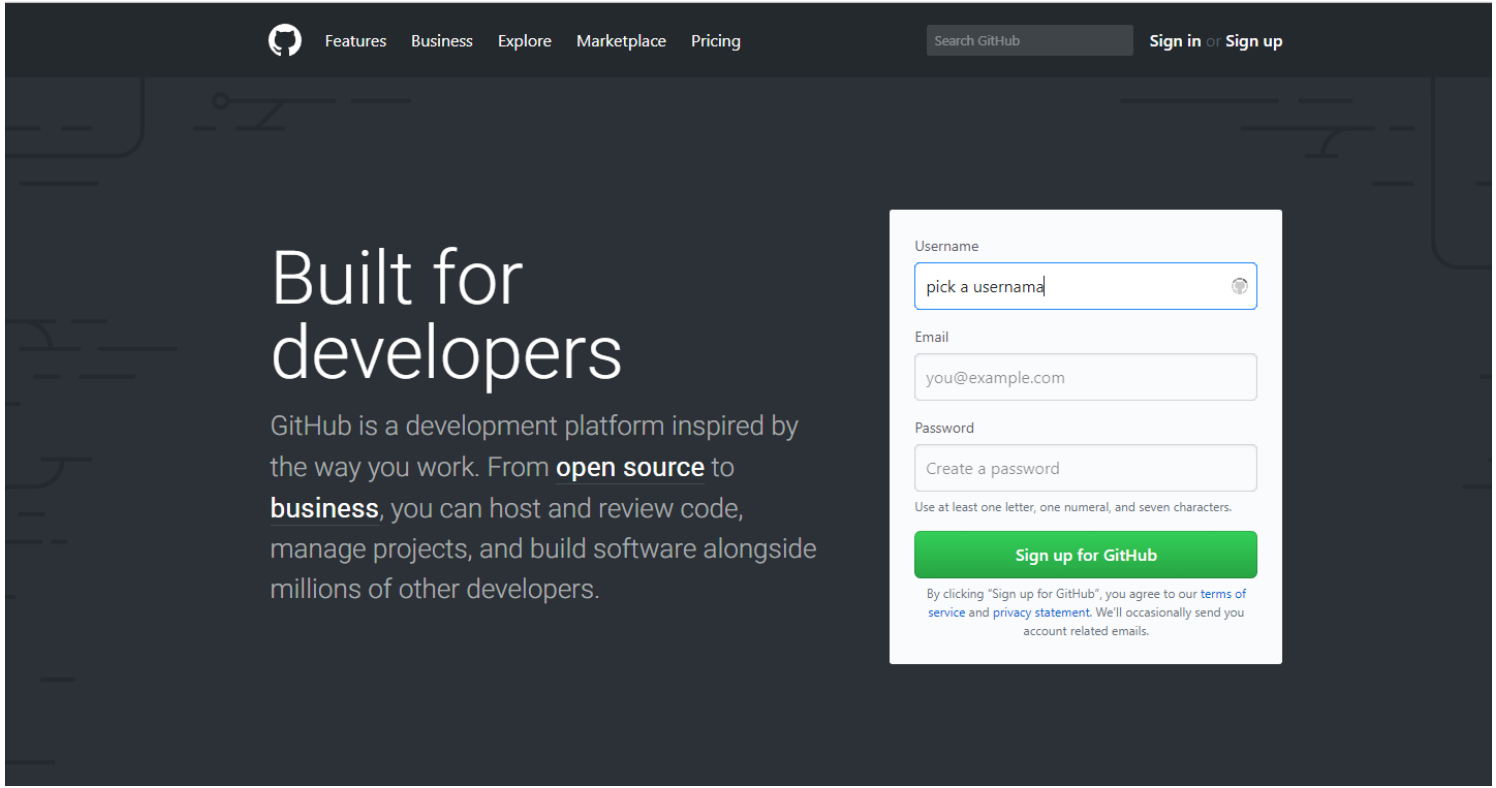
1 Install git and a create GitHub account

Install git

- **Windows**
  - http://git-scm.com/download/win
- **Linux (Debian)**
  - Command: `sudo apt-get install git!`
- **Mac**
  - http://git-scm.com/download/mac

Create GitHub account

- www.github.com
- Free for public repositories


Features
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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.
Username
pick a username
Email
you@example.com
Password
Create a password
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 statement. We'll occasionally send you account related emails.

What is version control?

- A system that keeps records of your changes
- Allows for collaborative development
- Allows you to know who made what changes and when
- **Allows you to revert any changes and go back to a previous state**

2 What is git?

Git is a version control system!

- Distributed version control
- Users keep entire code and history on their location machines
- Users can make any changes without internet access
- (Except pushing and pulling changes from a remote server)

What is git?

- Started in 2005
- Created by Linus Torvald to aid in Linux kernel development

Git icon

What is git?

- Git isn’t the only version control system

- But (we think) it’s the best

3 How does git work?

How does git work?

- Can be complicated at first, but there are a few key concepts
- Important git terminology in following slides are blue

Key Concepts: Snapshots

- The way git keeps track of your code history
- Essentially records what all your files look like at a given point in time
- You decide when to take a snapshot, and of what files
- Have the ability to go back to visit any snapshot

Key Concepts: Commit

- The act of creating a snapshot
- Can be a noun or verb

  “I commited code”

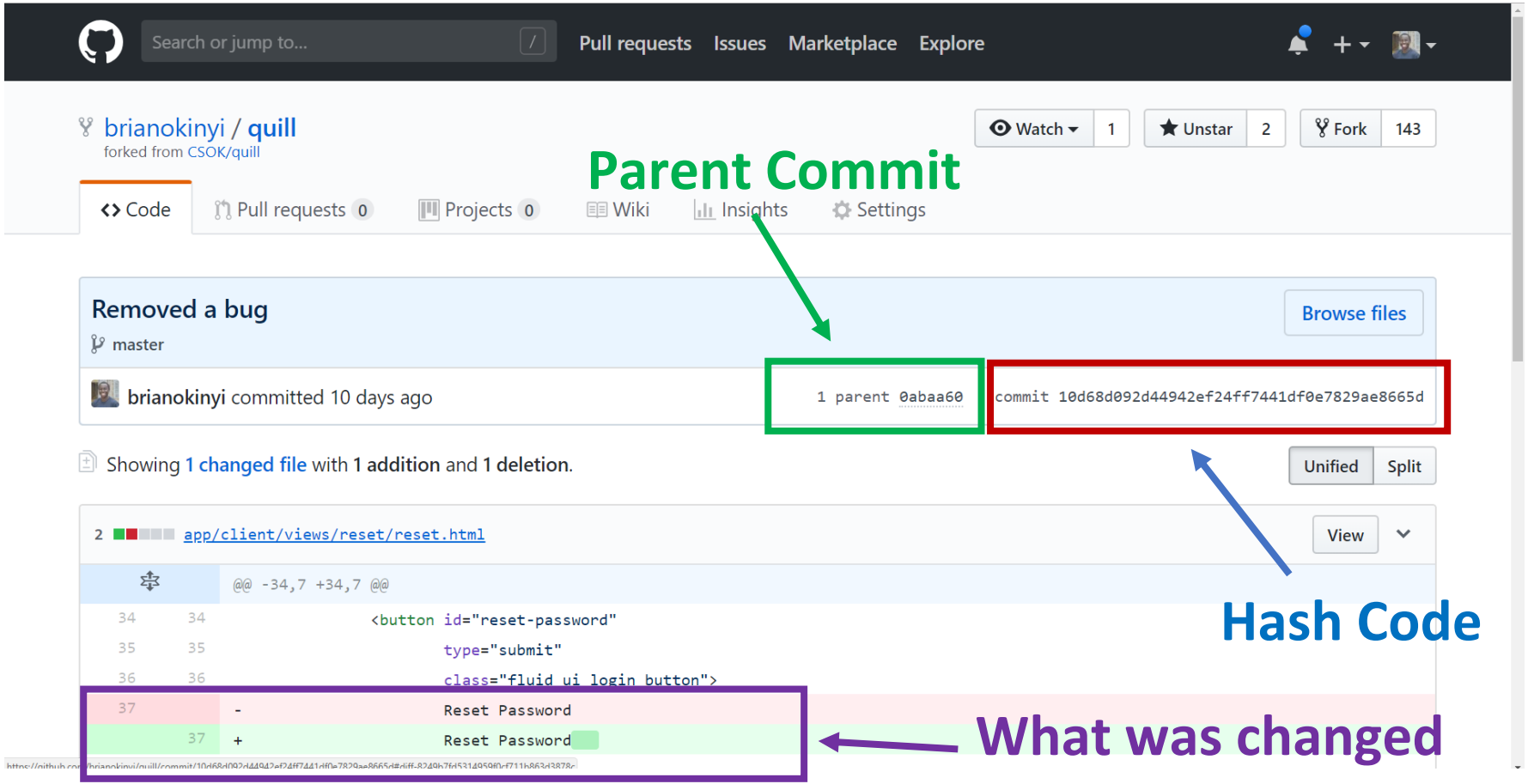
  “I just made a new commit”
- Essentially, a project is made up of a bunch of commits

Key Concepts: Commit

- Commits contain three pieces of information:

1. Information about how the files changed from previously
2. A reference to the commit that came before it
   - Called the "parent commit"
3. A hash code name
   - Will look something like:

     fb2d2ec5069fc6776c80b3ad6b7cbde3cade4e


Search or jump to...
Pull requests
Issues
Marketplace
Explore
brianokinyi / quill
forked from CSOK/quill
Watch 1
Unstar 2
Fork 143
Code
Pull requests 0
Projects 0
Wiki
Insights
Settings
Parent Commit
Removed a bug
master
Browse files
brianokinyi committed 10 days ago
1 parent 0abaa60
commit 10d68d092d44942ef24ff7441df0e7829ae8665d
Showing 1 changed file with 1 addition and 1 deletion.
Unified
Split
2
app/client/views/reset/reset.html
View
@@ -34,7 +34,7 @@
<button id="reset-password"
type="submit"
class="fluid ui login button">
- Reset Password
+ Reset Password
Hash Code
What was changed

Key Concepts: Repositories

- Often shortened to ‘repo’
- A collection of all the files and the history of those files
- Consists of all your commits
- Can live on a local machine or on a remote server (GitHub!)

Key Concepts: Cloning

- The act of copying a repository from a remote server is called cloning
- Cloning from a remote server allows teams to work together

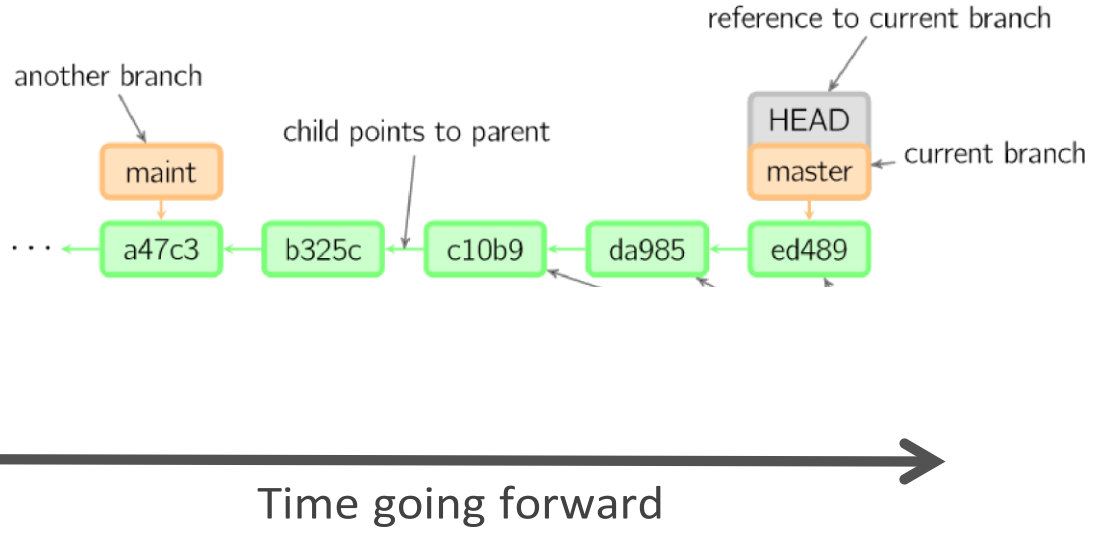
Key Concepts: Pulling

- The process of downloading commits that don’t exist on your machine from a remote repository is called pulling changes

Key Concepts: Pushing

- The process of adding your local changes to the remote repository is called pushing changes

So, what does a typical project look like?

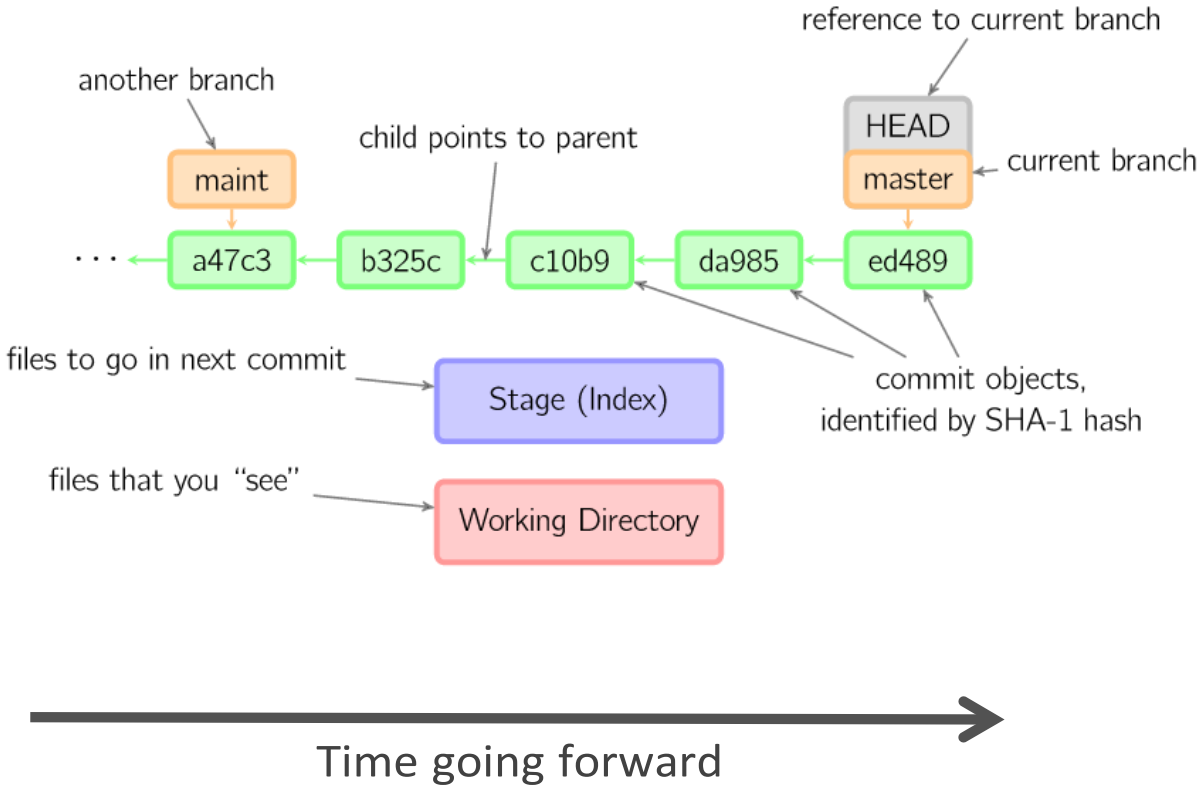


How do you make a commit anyway?

- There are a lot of ‘states’ and ‘places’ a file can be
- Local on your computer: the ‘working directory’
- When a file is ready to be put in a commit you add it onto the ‘index’ or ‘staging’

The process:

- Make some changes to a file
- Use the ‘git add’ command to put the file onto the staging environment
- Use the ‘git commit’ command to create a new commit’


reference to current branch
another branch
HEAD
child points to parent
maint
master
current branch
. . .
a47c3
b325c
c10b9
da985
ed489
files to go in next commit
Stage (Index)
commit objects,
identified by SHA-1 hash
files that you "see"
Working Directory
Time going forward

4 What is GitHub?

What is GitHub?

- Largest web-based git repository hosting service
- Allows for code collaboration with anyone online
- Adds **extra functionality** on top of git
- *UI, documentation, bug tracking, feature requests, pull requests, and more!*

Octocat!

What is GitHub?

- Founded in 2008
- Also has an Enterprise edition for businesses

Octocat!

Additional Resources

Additional Resources

- Official git site and tutorial:
  https://git-scm.com/
- GitHub guides:
  https://guides.github.com/
- Command cheatsheet:
  https://training.github.com/kit/downloads/github-git-cheat-sheet.pdf