Learning to use Git and GitHub to collaborate ♡

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What is Git?

Intro

It's version control

Intro

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What?

Intro

Suppose you're working on code

Suppose you're working on code

make some changes

Suppose you're working on code

make some changes

    still works

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    still works

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Intro

Suppose you're working on code
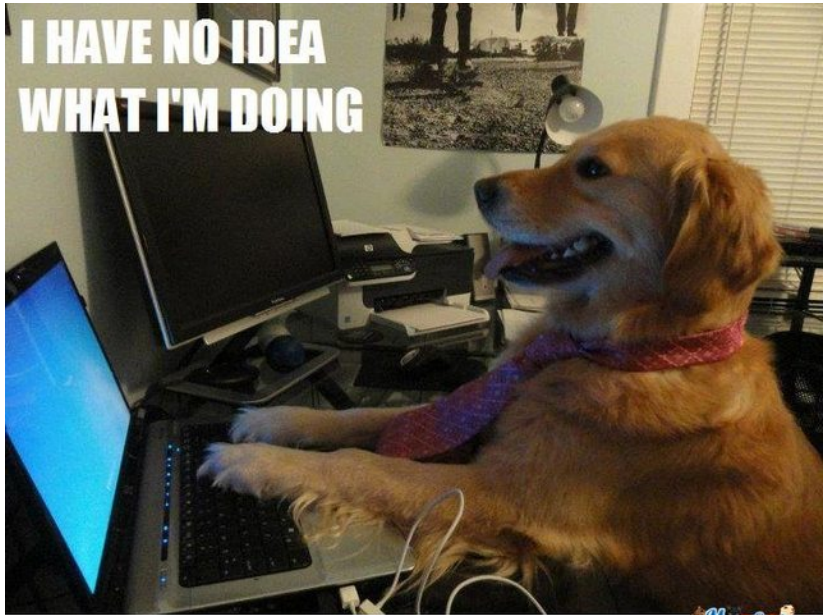
make some changes

   still works

make some changes

   still works

make some changes

Intro

Suppose you're working on code

make some changes

   still works

make some changes

   still works

make some changes

   broken?!

Broken?

Broken?

but where?

Broken?

    but where?

        start /* commenting */ things out

Intro

Broken?

  but where?

    start /* commenting */ things out

      you start to lose your mind

Do not want.

Sharing code

Sharing code

somebody wants a copy of your code

Sharing code

somebody wants a copy of your code

they make changes to their copy

Sharing code

      somebody wants a copy of your code

           they make changes to their copy

           you make changes to your copy

Sharing code

    somebody wants a copy of your code

        they make changes to their copy

        you make changes to your copy

        AT THE SAME TIME

Sharing code

somebody wants a copy of your code

they make changes to their copy

you make changes to your copy

AT THE SAME TIME

Now you want to share the changes with each other

Sharing code

    somebody wants a copy of your code

        they make changes to their copy

        you make changes to your copy

        AT THE SAME TIME

    Now you want to share the changes with each other

        . . .

Sharing code

somebody wants a copy of your code

they make changes to their copy

you make changes to your copy

AT THE SAME TIME

Now you want to share the changes with each other

. . .

. . . merging?
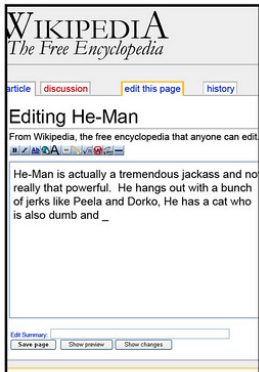
Intro

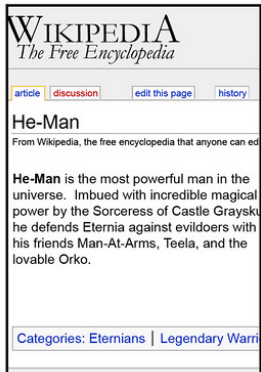Ever seen a project folder like:

```
main.c
main.c.old
main.c.fixed
main.c.actually_fixed
main.c.this_one_really
main.c.final
```

Intro

Wikipedia's page history

Wikipedia's page history

`diff` (Unix tool)

Intro

Wikipedia's page history

`diff` (Unix tool)

Longest common subsequence problem

Basics of version control

    fetch a specific version of a file

Intro

Basics of version control

   fetch a specific version of a file

   store the changes to relative to a specific version of a file

Lots of version control software exists

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CVS, Subversion, Team Foundation Server, Perforce

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client-server model

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client-server model

you need a network

Intro

Git is distributed

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all commands are done locally

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each copy contains all older versions

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developed by Linus Torvalds for Linux kernel development

Intro

Git is distributed

    all commands are done locally

        each copy contains all older versions

    developed by Linus Torvalds for Linux kernel development

        need for fast branching/merging

        (more on this in a bit)

$$<http://try.github.com/>$$

Installing git

Debian/Ubuntu

apt-get install git

Installing git

Debian/Ubuntu

    apt-get install git

Windows

    <http://msysgit.github.com/>

Setting it up

```
git config --global user.name "Batman"
git config --global user.email "batman@jl.org"
```

Upload slides

GitHub clients (more graphical)

<http://eclipse.github.com/>

<http://mac.github.com/>

<http://windows.github.com/>

Why upload and contribute your code? I

improve your skills

> reading good books makes you a better writer
> reading good code makes you a better coder

show your skills

> many tech-oriented companies will look for your code online
>> portfolio
> at a job interview: "I helped write some of the code you use daily"

collaborate with others all around the world

>> you may not share the same mother tongue, but
>> you can both speak with code
>> programming in the large
>>> how code is managed in projects

don't have enough skills yet?

>> you can lend a hand in other ways
>>> graphic design...
>>> documentation...
>> <http://open-advice.org/>

Learn more?

Pro Git book <http://git-scm.com/book>

man pages (reference) <http://git-scm.com/docs>

IRC: #git on freenode <http://jk.gs/git/>

git for computer scientists <http://eagain.net/articles/git-for-computer-scientists/>

git concepts simplified <http://sitaramc.github.com/gcs/>