git & version control

an introduction by

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table of contents

- why use source control?
- what is it?

why use version control

let's talk workflow

let's talk workflow

imagine writing an essay

what's the process like

the writing process

write the whole thing at once

I love coding. It's lots of fun!

the writing process

write → save → my-essay.txt

I love coding.

the writing process

write → save → my-essay.txt

procrastinate

I love coding.

the writing process

write → save → write → save → my-essay.txt

I love coding. It's lots of fun!

the writing process

write → save → write → save → my-essay.txt

it would be a shame if something bad were to happen…

I love coding. It's lots of fun!

the writing process

write ay.txt

the writing process

write → save → write → save → my-essay.txt

rip progress

~~I love coding. It's lots of fun!~~

the writing process (trial 2)

write → save → my-essay.txt

save backup → my-essay_backup.txt

I love coding. It's lots of fun!

the writing process (trial 2)

write → save → my-essay.txt

save backup

my-essay.txt

I love coding. It's lots of fun!

my-essay_backup.txt

I love coding. It's lots of fun!

the writing process (trial 2)

my-essay.txt

I love coding. It's lots of fun!

my-essay_backup.txt

I love coding. It's lots of fun!

what if we mess up our active copy

the writing process (trial 2)

my-essay.txt

I hate coding. It's hard and boring!

my-essay_backup.txt

I love coding. It's lots of fun!

what if we mess up our active copy

restore from backup

the writing process (trial 2)

my-essay.txt

~~I hate coding. It’s hard and boring!~~

my-essay_backup.txt

I love coding. It's lots of fun!

what if we mess up our active copy

restore from backup

the writing process (trial 2)

my-essay.txt

I love coding. It's lots of fun!

my-essay_backup.txt

I love coding. It's lots of fun!

the writing process (trial 2)

my-essay.txt

my-essay_backup.txt

what if we mess up active copy and overwrite the backup

the writing process (trial 2)

my-essay.txt → save → my-essay_backup.txt

I hate coding. It's hard and boring! → I hate coding. It's hard and boring!

the writing process (trial 2)

my-essay.txt my-essay_backup.txt

uh-oh

we overwrote our backup with a bad copy

the writing process (trial 3)

write → save → my-essay.txt

make iterative backups

I love coding. It's lots of fun!

the writing process (trial 3)

my-essay my-essay_2015-09-01 my-essay_2015-09-10

my-essay_2015-09-19 my-essay_2015-09-28

this gets messy very quickly

however, this system allows us to restore from any given point

new problem

which backup has the info we need

my-essay

my-essay_2015-09-01

my-essay_2015-09-10

my-essay_2015-09-19

my-essay_2015-09-28

ponder that question for a bit…

let's shift gears for a minute…

let's talk *git*

what is git

git: A distributed revision control system with…support for distributed, non-linear workflows. [Wikipedia – Git (software)]

…

what is git

...

try this:

a version control system that allows a user to

store, update, and maintain files and projects.

why use git

you have all these iterative backups

how do you manage them all

going back…

remember this?

new problem

which backup has the info we need

my-essay

my-essay_2015-09-01

my-essay_2015-09-10

my-essay_2015-09-19

my-essay_2015-09-28

new problem

which backup has the info we need

answer is to look at the *metadata*

metadata

a set of data that describes and gives information about other data

backups should contain metadata

metadata

who

what

when

metadata

who: author of the change

what: what was changed

when: date and time of change

when used properly, git is a very powerful tool to manage your workflow

fin

fin

thank you for listening

sorry this presentation is so short

the complete version is far more comprehensive

it is freely available for anyone to view, edit, or reproduce on GitHub

fin

GitHub profile: Nefari0uss

look under presentations → git

https://goo.gl/uyzCs9

i hope you learned something!

Sources

- Git-SCM book: https://git-scm.com/book
- Daniel “paradigm” Thau from Open Source Club at OSU on Git:
  - https://opensource.osu.edu/au10/git
- git – the simple guide: https://rogerdudler.github.io/git-guide/
- Atlassian Git Tutorial: https://www.atlassian.com/git/tutorials/
- Understanding Git Conceptually: http://www.sbf5.com/~cduan/technical/git/
- Wikiepda – Git (software): https://en.wikipedia.org/wiki/Git_(software)
- Git Reference: http://gitref.org/basic/

- Lots of pictures from Git-SCM Book, Wikipedia and Google/Bing Image searches