A primer on using git & GitHub

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About me

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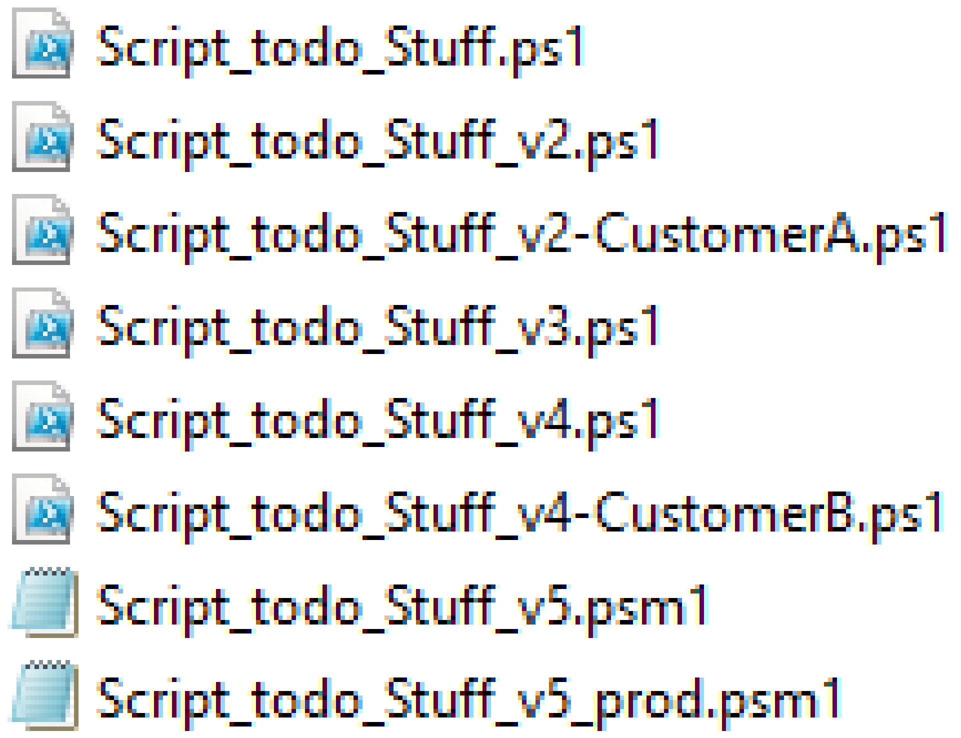
Why exactly would I care?

Rings a bell?

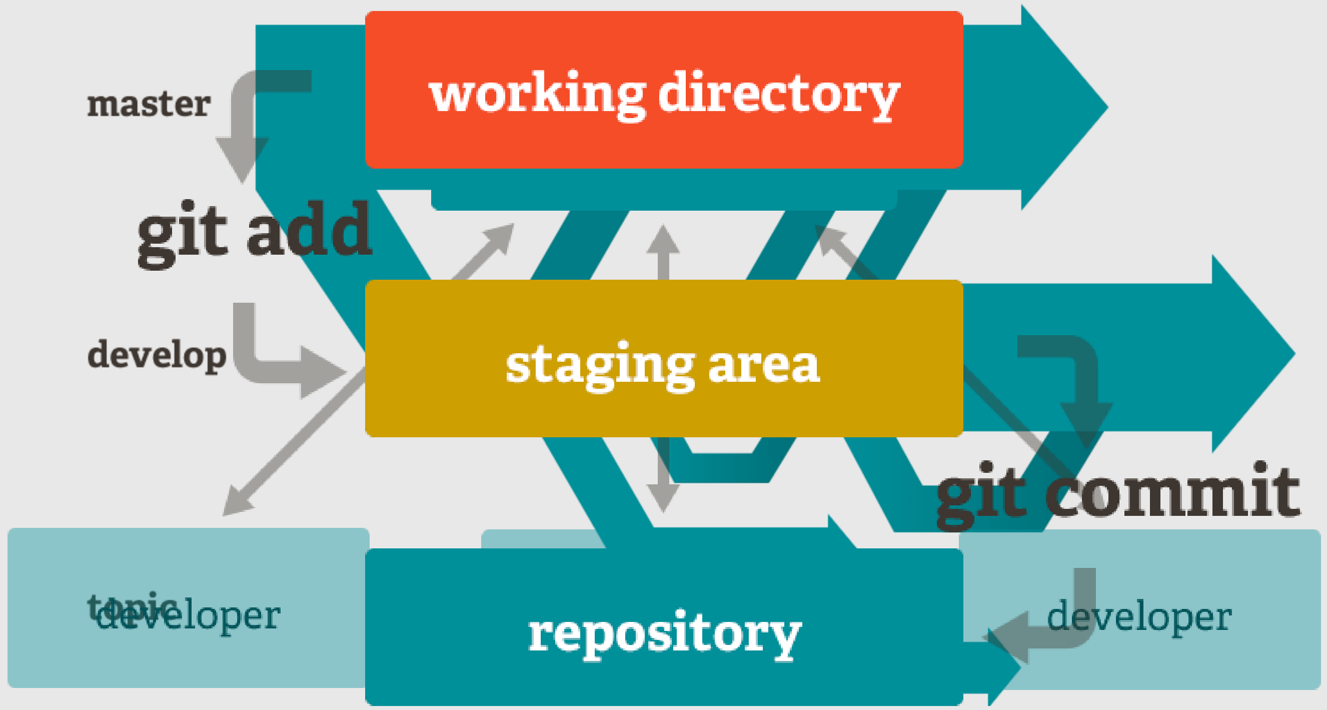


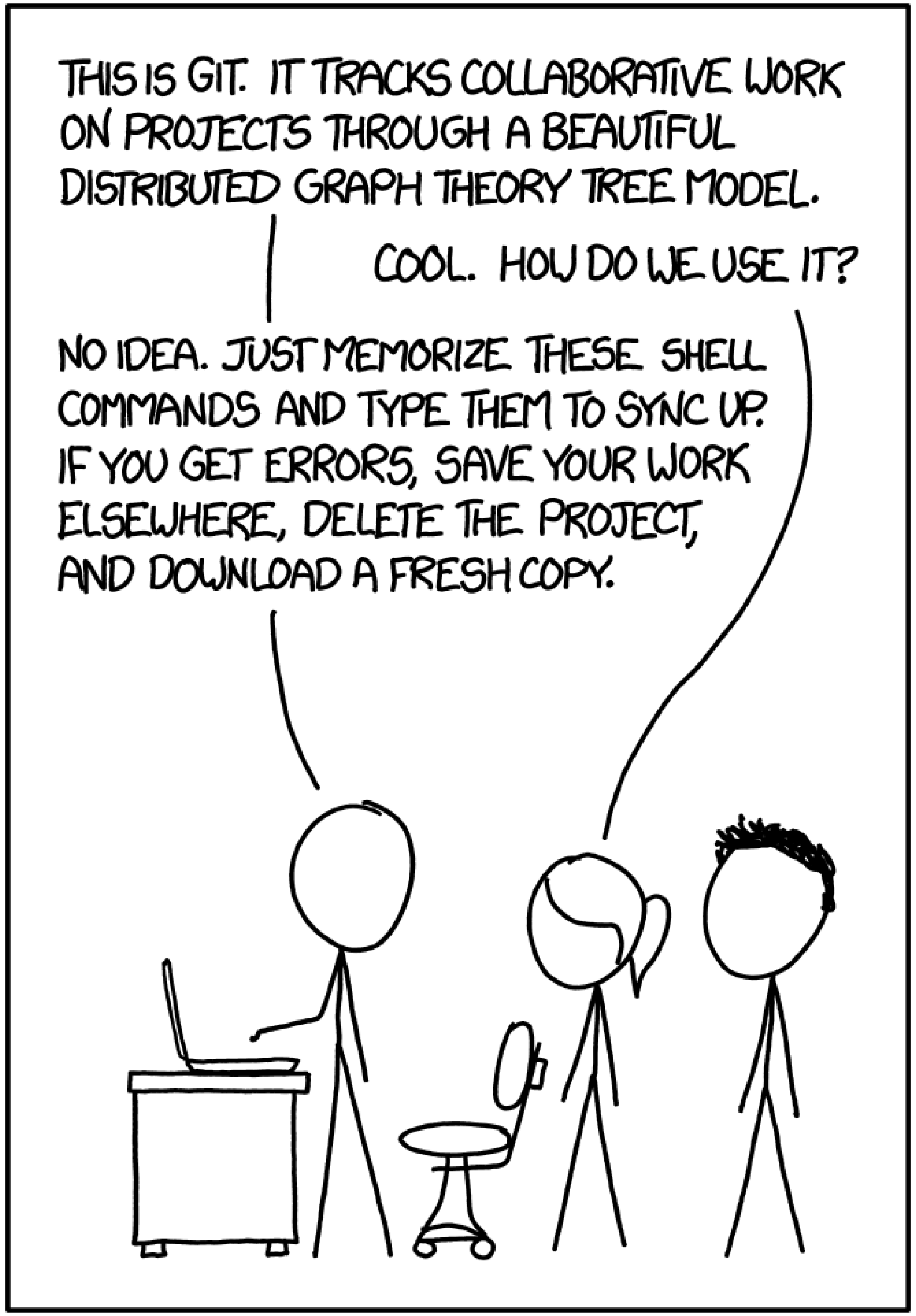
Script_todo_Stuff.ps1
Script_todo_Stuff_v2.ps1
Script_todo_Stuff_v2-CustomerA.ps1
Script_todo_Stuff_v3.ps1
Script_todo_Stuff_v4.ps1
Script_todo_Stuff_v4-CustomerB.ps1
Script_todo_Stuff_v5.psm1
Script_todo_Stuff_v5_prod.psm1

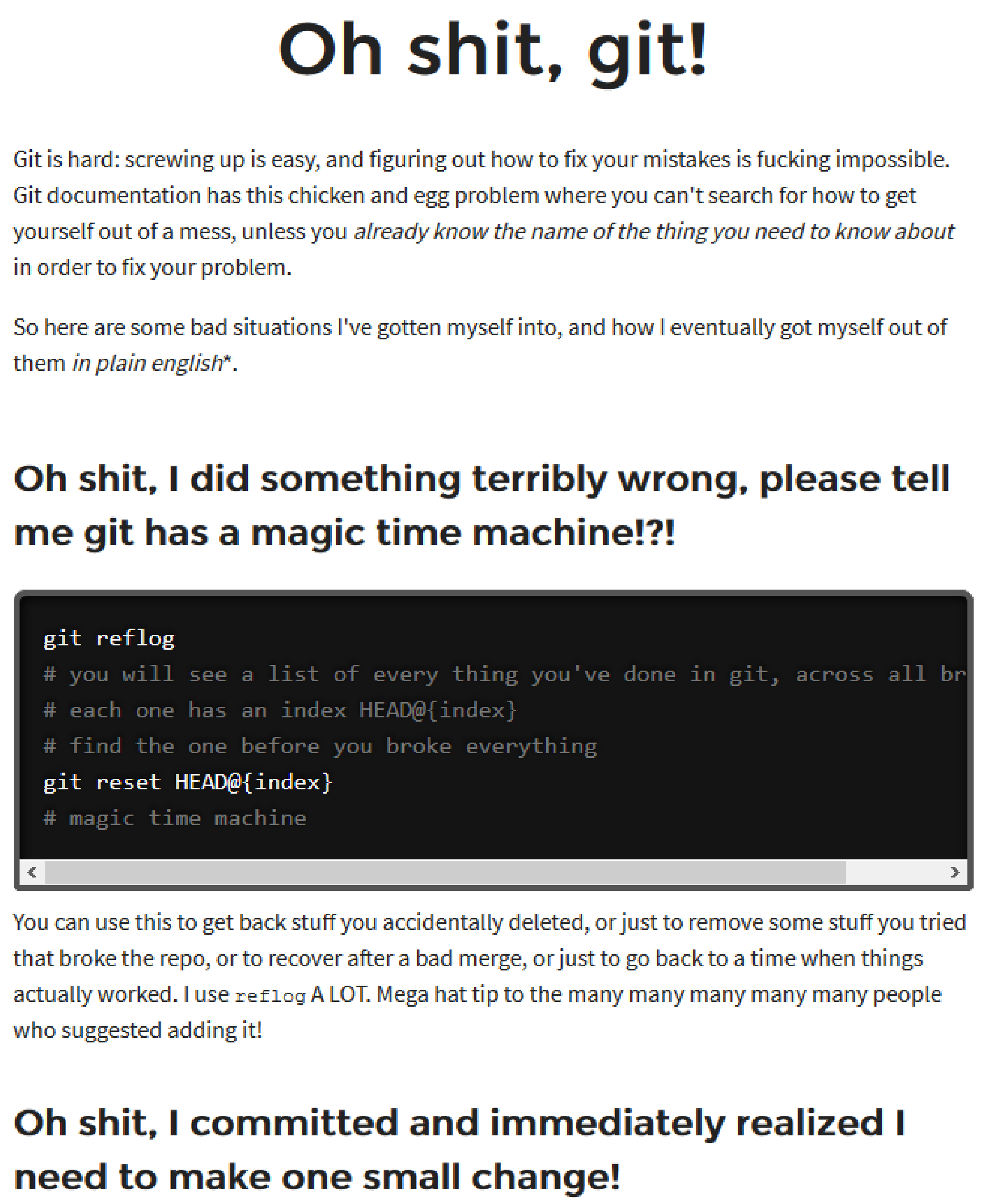
Git is a free and open-source distributed version control system

Key concepts

- Distributed
- Branching & merging
- Staging area




THIS IS GIT. IT TRACKS COLLABORATIVE WORK ON PROJECTS THROUGH A BEAUTIFUL DISTRIBUTED GRAPH THEORY TREE MODEL.
COOL. HOW DO WE USE IT?
NO IDEA. JUST MEMORIZE THESE SHELL COMMANDS AND TYPE THEM TO SYNC UP. IF YOU GET ERRORS, SAVE YOUR WORK ELSEWHERE, DELETE THE PROJECT, AND DOWNLOAD A FRESH COPY.



Oh shit, git!

Git is hard: screwing up is easy, and figuring out how to fix your mistakes is fucking impossible. Git documentation has this chicken and egg problem where you can't search for how to get yourself out of a mess, unless you *already know the name of the thing you need to know about* in order to fix your problem.

So here are some bad situations I've gotten myself into, and how I eventually got myself out of them *in plain english**.

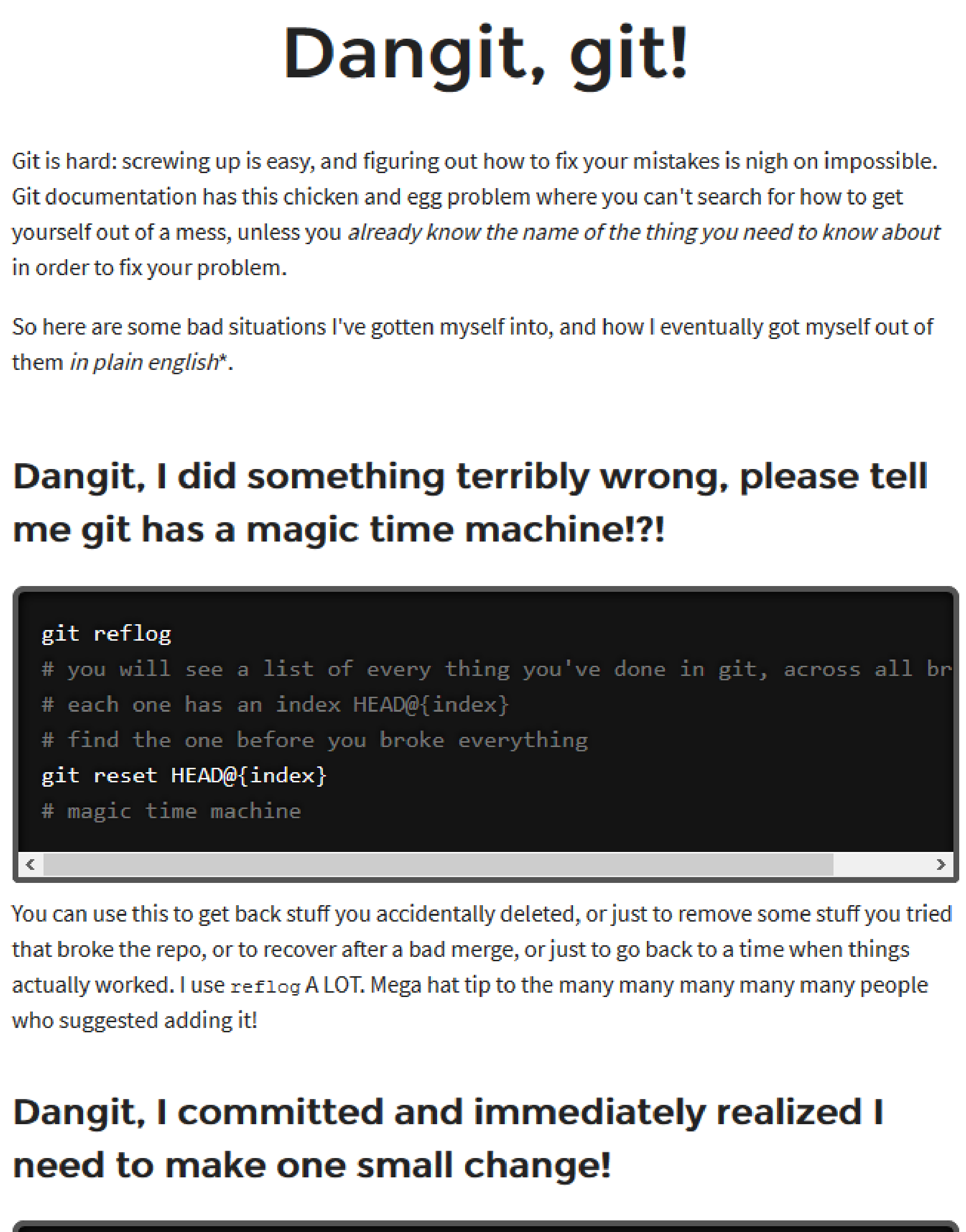
Oh shit, I did something terribly wrong, please tell me git has a magic time machine!?!

```
git reflog
# you will see a list of every thing you've done in git, across all br
# each one has an index HEAD@{index}
# find the one before you broke everything
git reset HEAD@{index}
# magic time machine
```

You can use this to get back stuff you accidentally deleted, or just to remove some stuff you tried that broke the repo, or to recover after a bad merge, or just to go back to a time when things actually worked. I use `reflog` A LOT. Mega hat tip to the many many many many many people who suggested adding it!

Oh shit, I committed and immediately realized I need to make one small change!

https://ohshitgit.com/



Dangit, git!

Git is hard: screwing up is easy, and figuring out how to fix your mistakes is nigh on impossible. Git documentation has this chicken and egg problem where you can't search for how to get yourself out of a mess, unless you *already know the name of the thing you need to know about* in order to fix your problem.

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https://dangitgit.com/

What about GitHub then?

- Hosted git
- Acquired by Microsoft in 2018

Some alternatives

Bitbucket

Gitlab

Azure Repos

Every geek loves tools!

Windows Terminal

Visual Studio Code

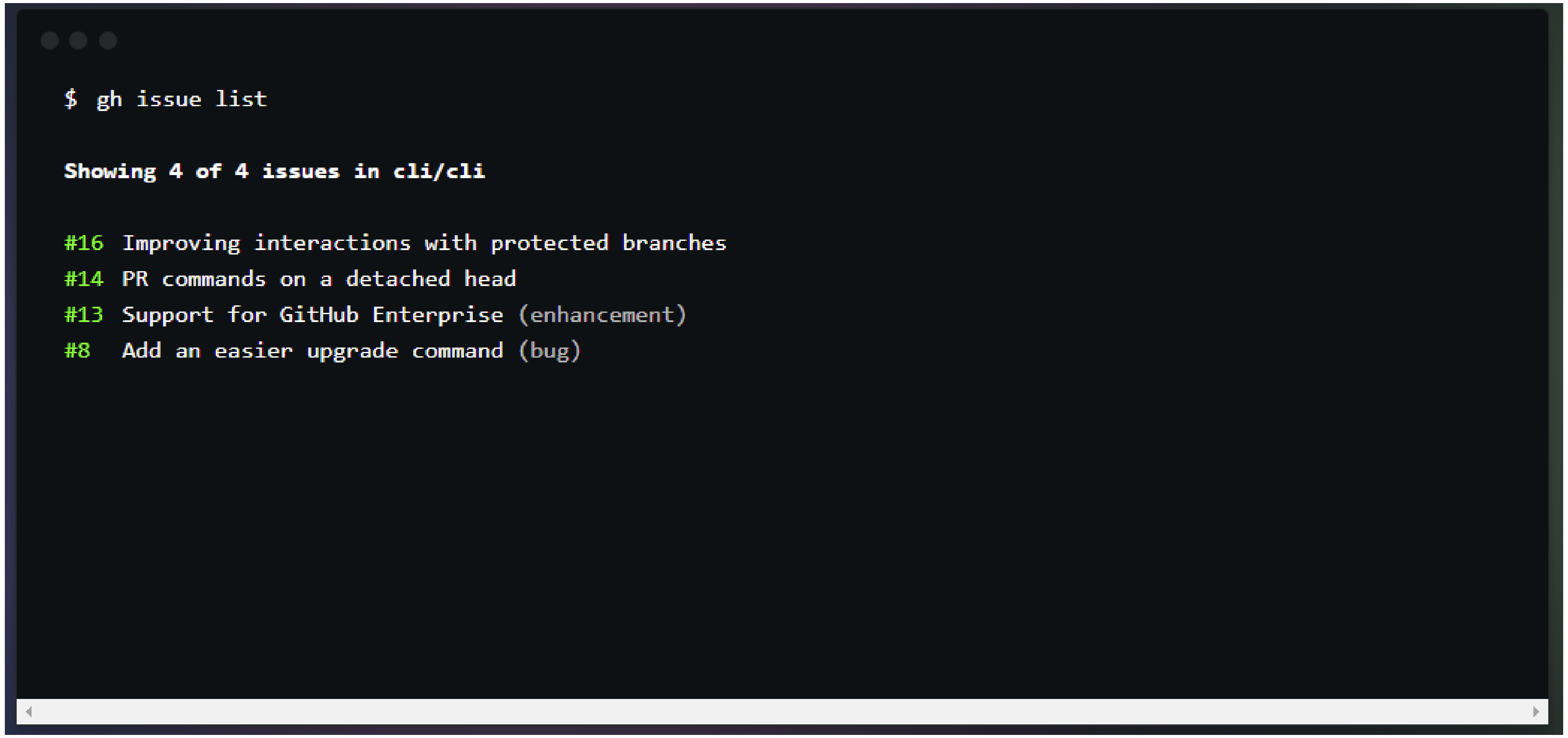
Useful VSCode extensions

GitLens

Git History

GitHub Pull Requests & Issues

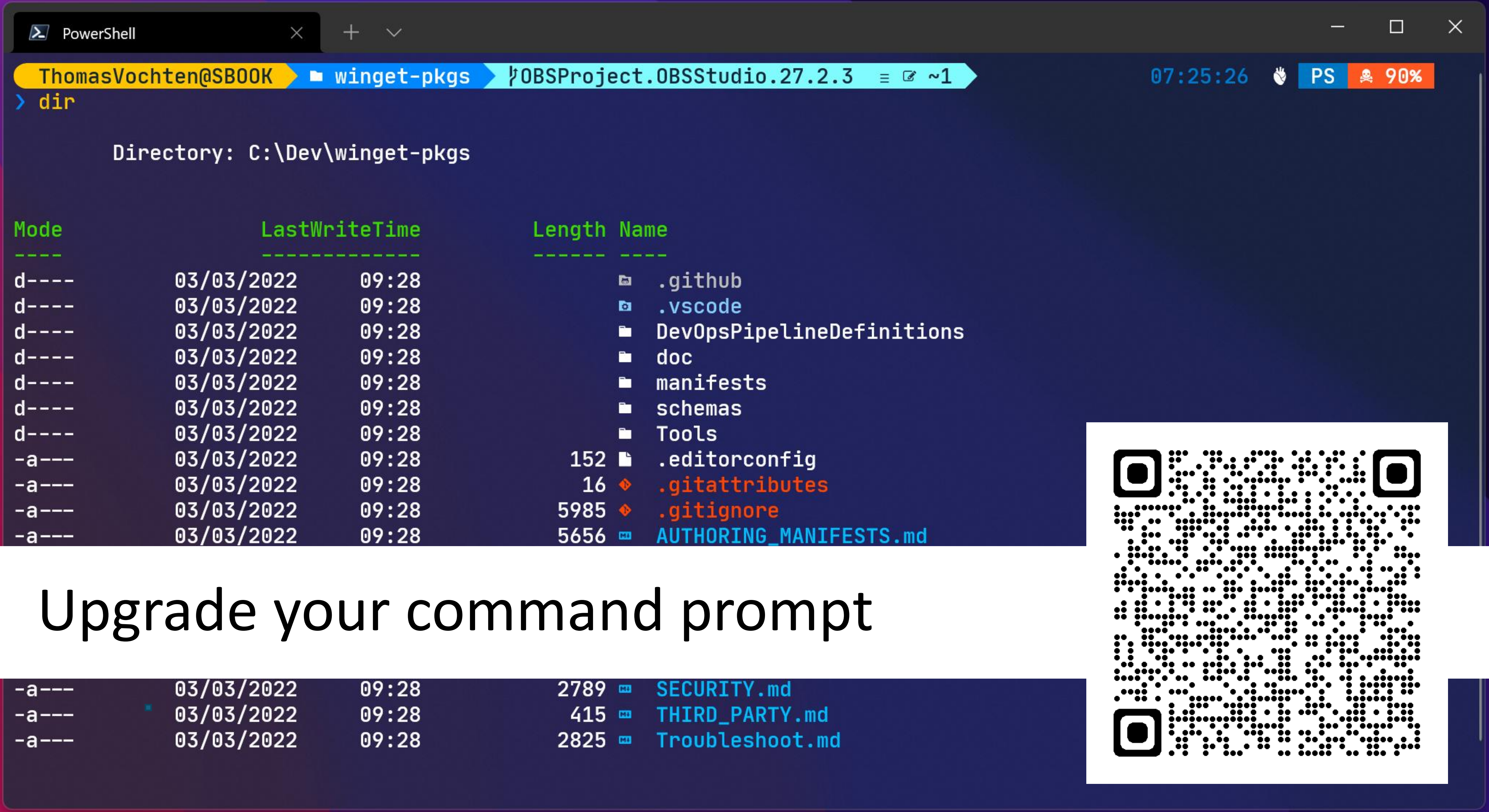
GitHub CLI



```
$ gh issue list

Showing 4 of 4 issues in cli/cli

#16 Improving interactions with protected branches
#14 PR commands on a detached head
#13 Support for GitHub Enterprise (enhancement)
#8  Add an easier upgrade command (bug)
```



```
 ThomasVochten@SBOOK   winget-pkgs  OBSProject.OBSStudio.27.2.3 ≡  ~1                07:25:26  PS  90%
❯ dir

        Directory: C:\Dev\winget-pkgs


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d----          03/03/2022     09:28                  .github
d----          03/03/2022     09:28                  .vscode
d----          03/03/2022     09:28                  DevOpsPipelineDefinitions
d----          03/03/2022     09:28                  doc
d----          03/03/2022     09:28                  manifests
d----          03/03/2022     09:28                  schemas
d----          03/03/2022     09:28                  Tools
-a---          03/03/2022     09:28            152   .editorconfig
-a---          03/03/2022     09:28             16   .gitattributes
-a---          03/03/2022     09:28           5985   .gitignore
-a---          03/03/2022     09:28           5656   AUTHORING_MANIFESTS.md
-a---          03/03/2022     09:28           2789   SECURITY.md
-a---          03/03/2022     09:28            415   THIRD_PARTY.md
-a---          03/03/2022     09:28           2825   Troubleshoot.md
```

Upgrade your command prompt

Demo

Getting started with git & GitHub

Common git & GitHub lingo

- Checking in your changes (committing)
- Download a remote repo to your pc (cloning)
- Copy your changes to a remote repository (pushing)
- Getting changes from the remote repository (pulling)
- Creating a separate area to work on stuff (branching)
- Integrating those changes back in (merging)
- Creating your own version of existing code on GitHub (forking)
- Asking to merge your work into the main copy (pull request)

Basic git workflow

- You clone or create a repo
- You work in your local copy of the repo

You add & commit changes to your local repo

You push to the remote repo (e.g. GitHub) when you're ready

You pull from the remote repo regularly to stay up to date

Open-source contribution workflow

- Fork the repo you want to contribute to
- Create a branch for your change
- Make & test your changes
- Commit your changes to your local repo
- Push your changes to your remote repo
- Create a pull request
- Wait for the pull request to be accepted 🤷
- Remove your fork

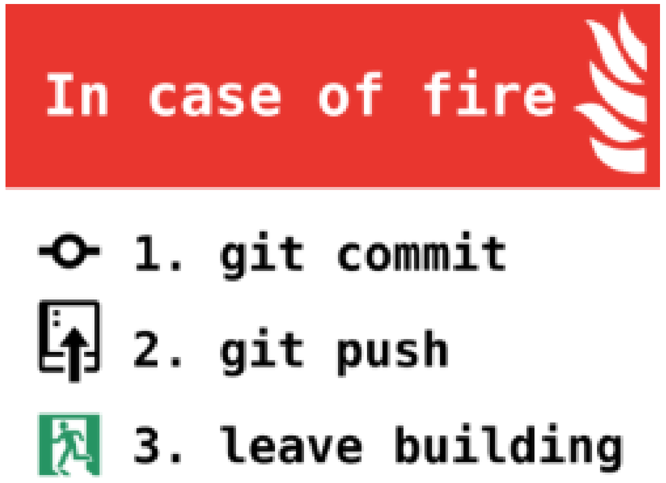
GitHub Skills

https://github.com/skills

git docs: https://git-scm.com/doc

Takeaways

- Learning by doing is key to becoming comfortable with git
- Don’t be afraid of the command line
- Customize and extend your toolbox, it’s not just eye candy
- Commit, push & pull as often as you can!
- Contribute to open source - Sharing is caring 💖


In case of fire

1. git commit
2. git push
3. leave building

Thank you

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