

Getting started with Git



1. Why and what



3. Let's get cloning



5. What about GitHub



2. Installing the bits



4. I want my own repo



6. Let's do a pull request

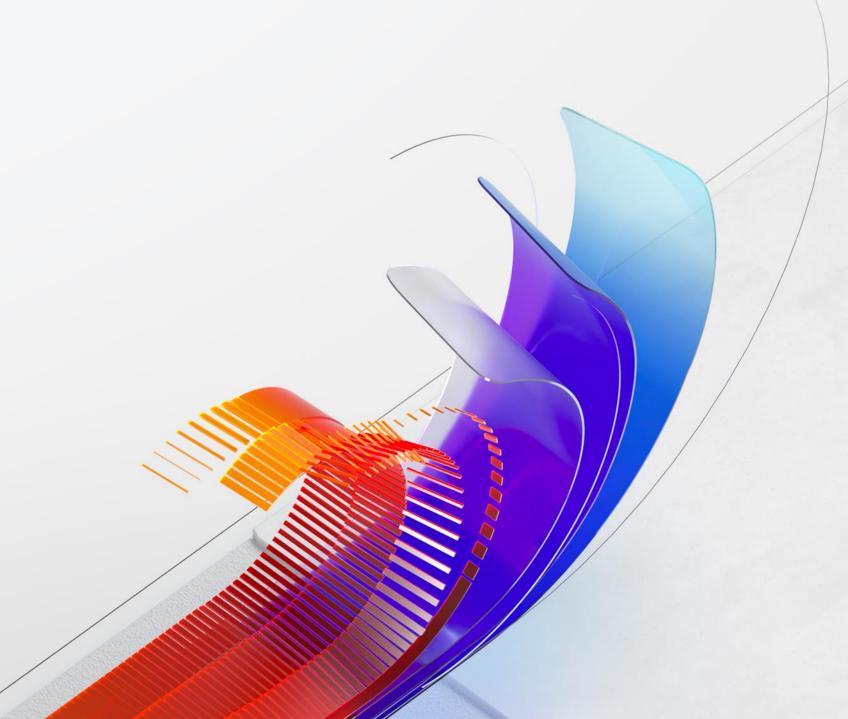


Hands on, a bit challenging, let's have fun



Why and what?

Ahmed Salijee



What is Git?

From Wikipedia

Git is a *distributed version-control system* for tracking changes in source code during software development.

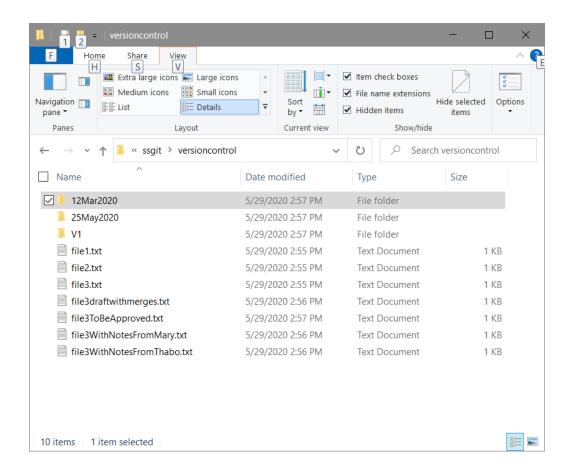
Not totally accurate – does not need to be source code or software dev. It can track and manage changes in general

Why a version control system

 Keeping track of changes is challenging.

VCS

- Tools that help a team manage changes to source code (files) over time.
- keeps track of every modification to the code (files)
- in a special kind of database.
- Who made the changes, when and maybe why
- Go back in time
- Work in isolation if needed



I am not a dev – this is not important...

Your customers have devs ©

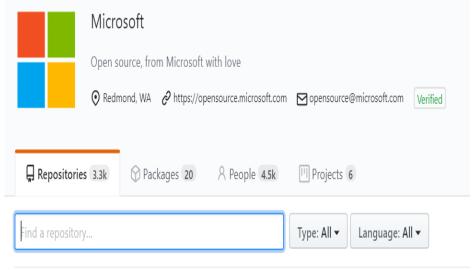
Git and GitHub are collaboration tools Used beyond software development

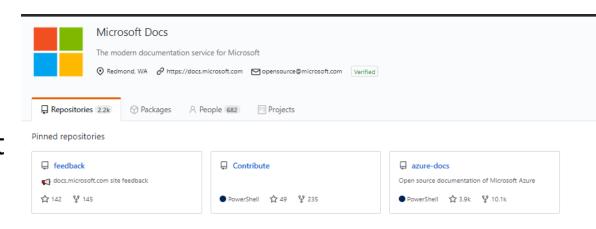
Microsoft docs using Git/GitHub

Many workshops/material posted on GitHub

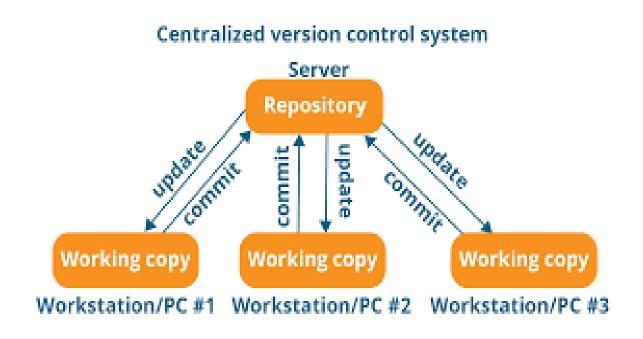
GitHub (and Azure DevOps) is more than just Git.

Think of it as social network



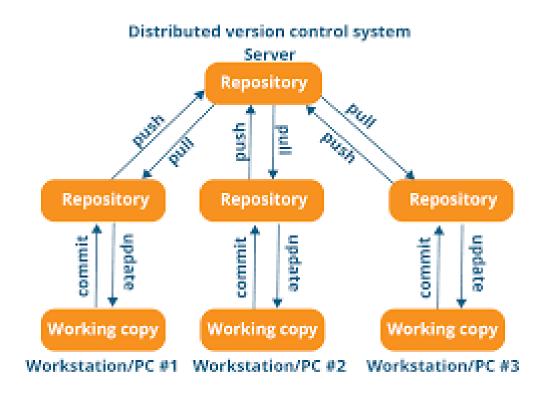


Central vs distributed



A single server that contains all the versioned files, and a number of clients that check out files from that central place

Eg CVS, TFVC, Sourcesafe, Subversion



Clients don't just check out the latest snapshot of the files; rather, they fully mirror (download) the repository, including its full history. Eg Git, Mercurial, Bazaar or Darcs

Git vs GitHub

Git is a version control system (and associated protocols) that lets you manage and keep track of your files.

GitHub is a cloud-based hosting service that lets you manage Git repositories (and more!)

<u>IMPORTANT</u> - There are other Git hosting services (onprem, cloud based)

- Azure Repos (part of Azure DevOps)
- BitBucket
- GitLab
- •

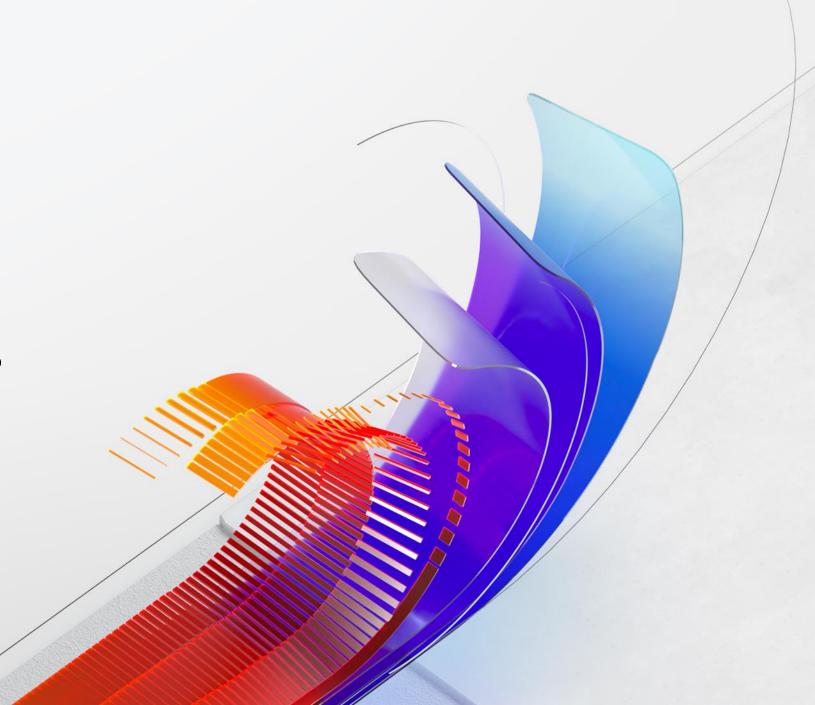
All of these a lot more services (managing work, issues, test case, deployments etc)

If a customer says they want a Git repo, GitHub is just one of many options for hosting it - just like hosting a website



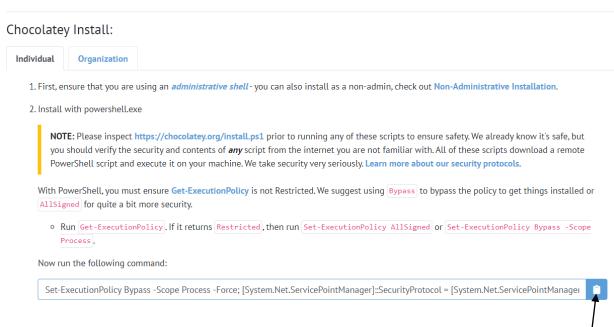
Installing the bits

Ahmed Salijee

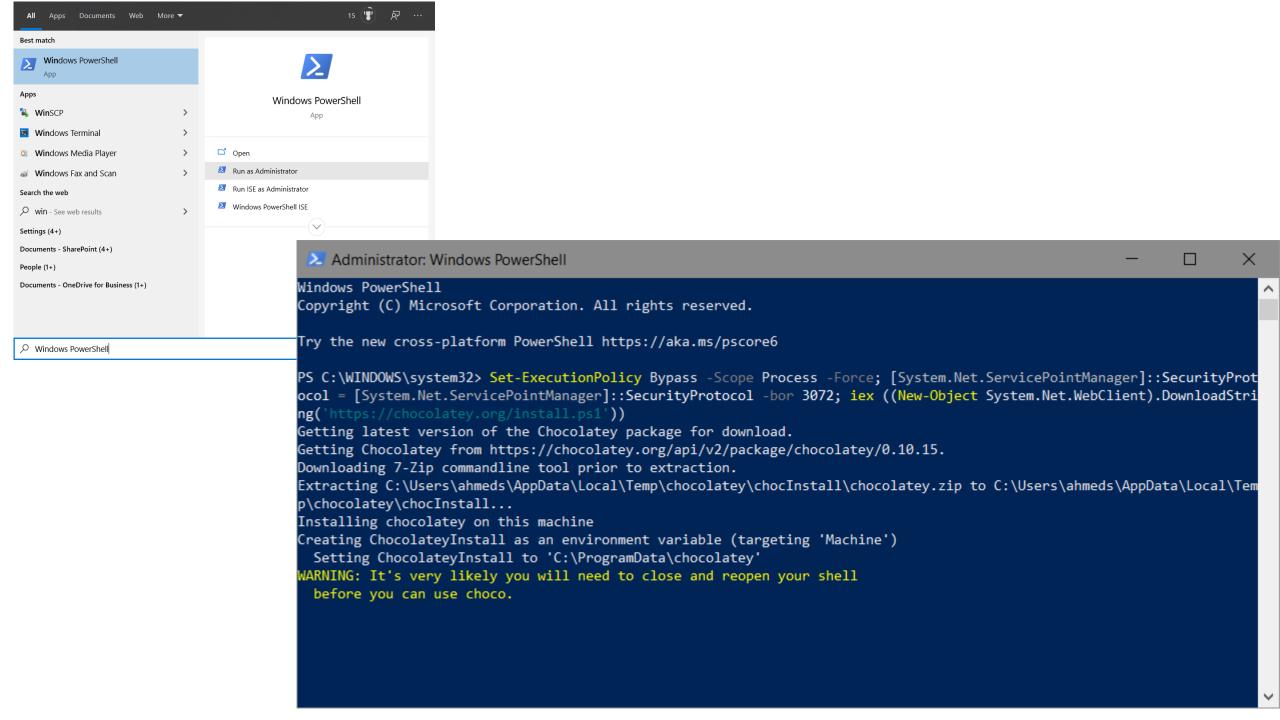


Installing the Bits

- · We are not going to do this..
 - You can visit https://git-scm.com/downloads
 - · download and install Git
- Let's try something different
 - · Install Chocolatey a package manager
 - STEPS Visit https://chocolatey.org/install
 - Open Powershell in Admin mode (Admin mode!)
 - · Copy,paste and run in powershell window the script from website (or the bit below)

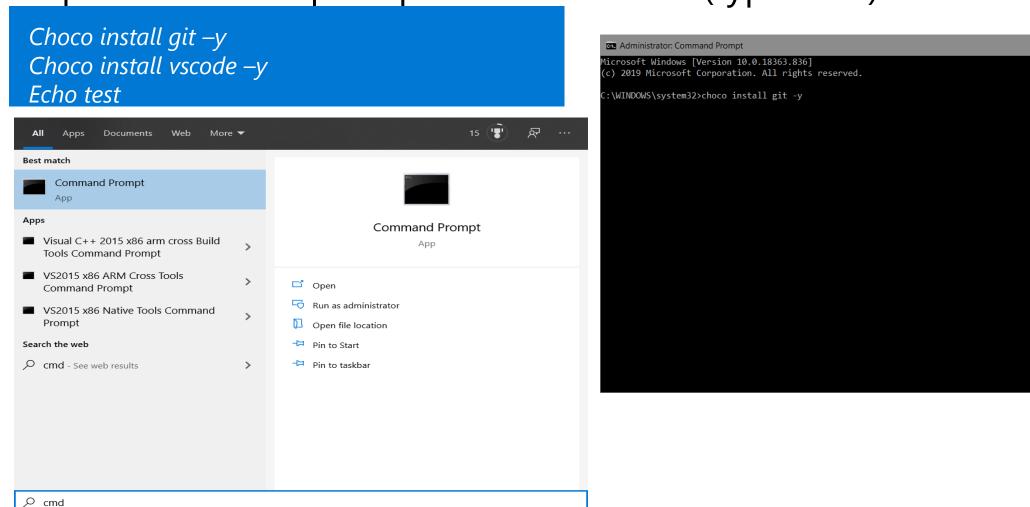


Set-ExecutionPolicy Bypass -Scope Process -Force; [System.Net.ServicePointManager]::SecurityProtocol = [System.Net.ServicePointManager]::SecurityProtocol -bor 3072; iex ((New-Object System.Net.WebClient).DownloadString('https://chocolatey.org/install.ps1'))



Installing the bits

· Open command prompt in admin mode (type cmd)



Make sure git is installed and get directory in place

- · Close current command prompt
- Open a new command prompt
- Type

git

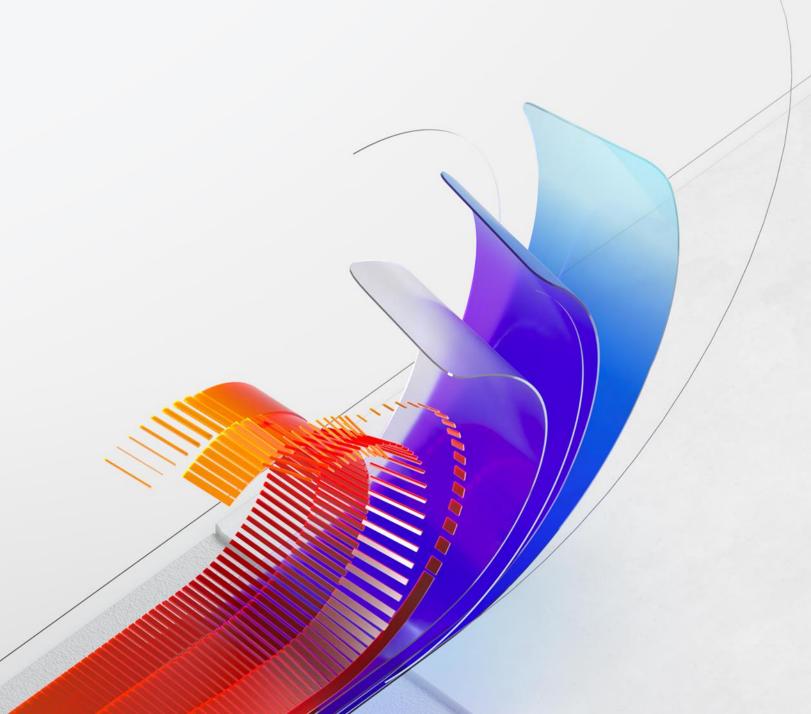
- You should get something back
- · Copy and paste

```
cd \
mkdir ssgit
cd ssgit
mkdir mygitrepo
dir
```

```
Administrator: Command Prompt
             Move or rename a file, a directory, or a symlink
  reset
            Reset current HEAD to the specified state
            Remove files from the working tree and from the index
 mamine the history and state (see also: git help revisions)
            Use binary search to find the commit that introduced a bug
            Print lines matching a pattern
  grep
  log
            Show commit logs
            Show various types of objects
            Show the working tree status
 row, mark and tweak your common history
            List, create, or delete branches
            Switch branches or restore working tree files
             Record changes to the repository
  diff
             Show changes between commits, commit and working tree, etc
             Join two or more development histories together
  merge
  rebase
            Reapply commits on top of another base tip
            Create, list, delete or verify a tag object signed with GPG
 ollaborate (see also: git help workflows)
            Download objects and refs from another repository
  pull
            Fetch from and integrate with another repository or a local branch
            Update remote refs along with associated objects
git help -a' and 'git help -g' list available subcommands and some
concept guides. See 'git help <command>' or 'git help <concept>'
to read about a specific subcommand or concept.
```

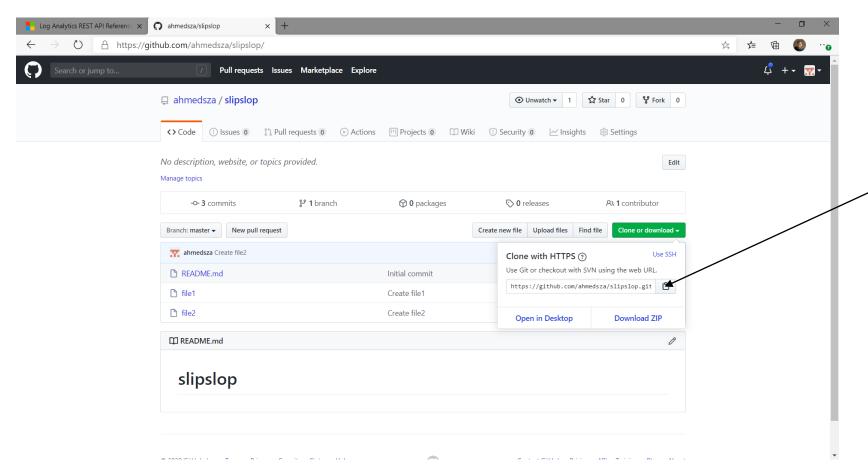


Let's get cloning



Let's get cloning

- Visit https://github.com/ahmedsza/slipslop/
- · Click the green clone or download button
- · Copy URL



Git clone

· In your command prompt window, type

```
git clone
```

· And then paste the URL (make sure there is a space). Press enter

```
C:\ssgit>git clone https://github.com/ahmedsza/slipslop.git

C:\ssgit>git clone https://github.com/ahmedsza/slipslop.git

C:\ssgit>git clone https://github.com/ahmedsza/slipslop.git

Cloning into 'slipslop'...
remote: Enumerating objects: 9, done.
remote: Counting objects: 100% (9/9), done.
remote: Total 9 (delta 1), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (9/9), done.

C:\ssgit>
```

There should be a directory slipslop, check it out - C:\ssgit\slipslop

You might need this..

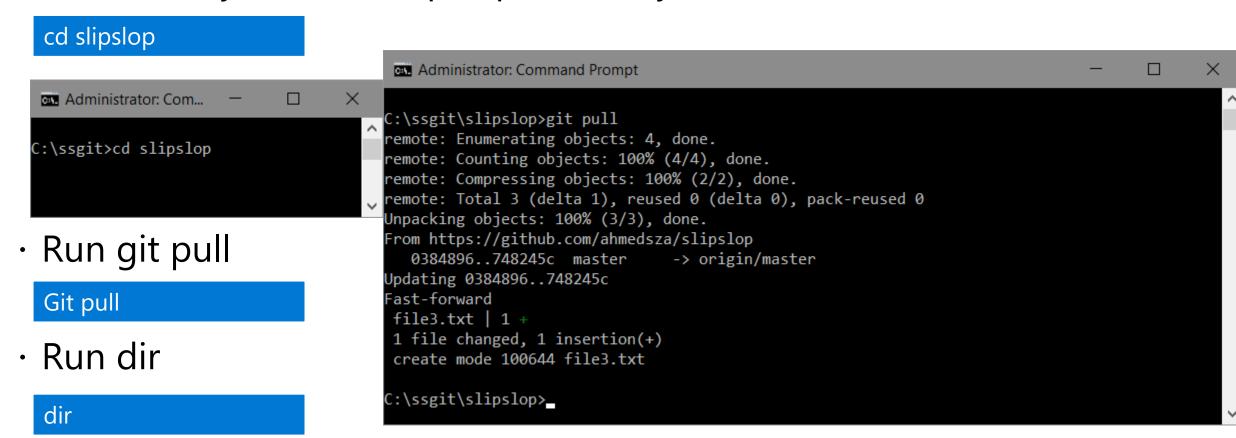
git config --global user.name "Your Name"

git config --global user.email "your_email@youremail.com"

Use email you signed up with.

What if I add or make changes to the repository?

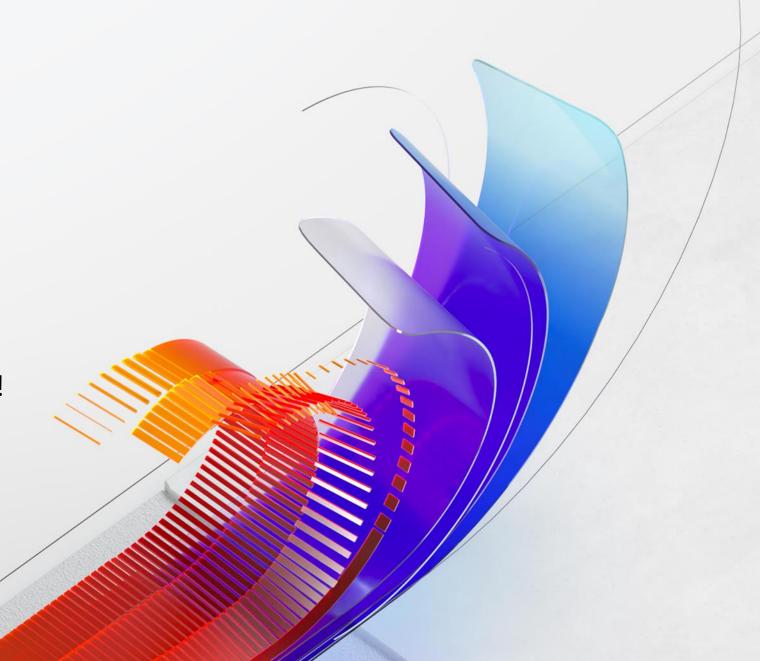
- What if you want to get updates
- · Make sure you are in slipslop directory

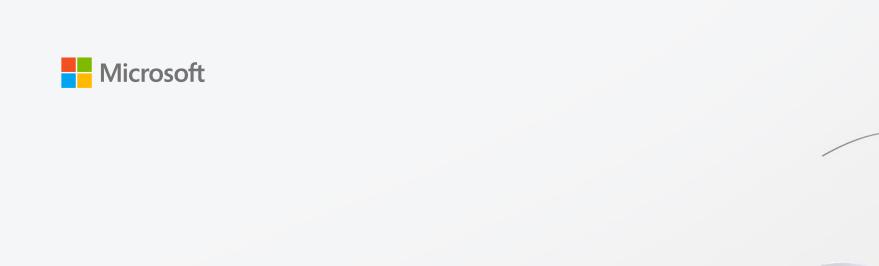




Congratulations!!

Try it out with another GitHub repo!





I want my own repo

My own git repo

· Make sure we are in mygit repo directory

```
cd c:\ssgit\mygitrepo
```

· To make this a git repo

git init

```
Administrator: Command Prompt — X

c:\ssgit\mygitrepo>git init
Initialized empty Git repository in c:/ssgit/mygitrepo/.git/
c:\ssgit\mygitrepo>_
```

· A hidden directory is created

dir /A:H

My own git repo

· Create a file in that directory, put some text – and save it

```
notepad f1.txt
```

Now we must let git know about it

```
git add f1.txt
git commit –m "added my first git file, put whatever comment"
```

```
Administrator: Command Prompt

c:\ssgit\mygitrepo>git add f1.txt

c:\ssgit\mygitrepo>git commit -m "added f1"

[master (root-commit) 8250034] added f1

1 file changed, 1 insertion(+)

create mode 100644 f1.txt

c:\ssgit\mygitrepo>
```

```
git log

Administrator: Command Prompt — 

c:\ssgit\mygitrepo>git log
commit 8250034b44af52ba83df1411cda6231f7b7ba172 (HEAD -> master)
Author: ahmeds <ahmeds@ms.com>
Date: Thu May 28 15:53:14 2020 +0200

added f1

c:\ssgit\mygitrepo>
```

Rinse and repeat

· Add another file, and commit it

```
echo "f2" >> f2.txt
git add f2.txt
git commit –m "added my second git file, put whatever comment"
git log
```

Rinse and repeat

- · Create a file in that directory, put some text and save it
- · One step at a time.

```
echo "f3" >> f3.txt
notepad f1.txt
git add .
git commit -m "added f3 and changed f1"
git log --name-status
git log --oneline
```





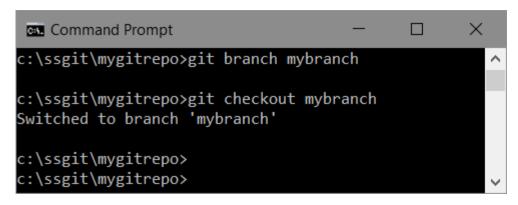
Mini advanced stuff Back to the future..

· Do this one at a time

```
git log --oneline
dir
Git checkout <enter the number>
Dir
Git checkout master
```

```
Command Prompt
c:\ssgit\mygitrepo>git log --oneline
 L78e31a (HEAD -> mybranch, master) f2
 250034 added f1
c:\ssgit\mygitrepo>dir
 Volume in drive C is OSDisk
 Volume Serial Number is DCFC-90BB
Directory of c:\ssgit\mygitrepo
05/28/2020 04:04 PM
                        <DIR>
05/28/2020 04:04 PM
                        <DIR>
05/28/2020 03:51 PM
                                    6 f1.txt
05/28/2020 04:04 PM
                                    4 f2.txt
              2 File(s)
                                    10 bytes
              2 Dir(s) 22,847,279,104 bytes free
c:\ssgit\mygitrepo>git checkout 8250034
Note: checking out '8250034'.
You are in 'detached HEAD' state. You can look around, make experimental
changes and commit them, and you can discard any commits you make in this
state without impacting any branches by performing another checkout.
If you want to create a new branch to retain commits you create, you may
do so (now or later) by using -b with the checkout command again. Example:
 git checkout -b <new-branch-name>
HEAD is now at 8250034 added f1
c:\ssgit\mygitrepo>dir
 Volume in drive C is OSDisk
 Volume Serial Number is DCFC-90BB
 Directory of c:\ssgit\mygitrepo
05/28/2020 04:07 PM
                        <DIR>
05/28/2020 04:07 PM
                        <DIR>
05/28/2020 03:51 PM
                                    6 f1.txt
              1 File(s)
                                     6 bytes
              2 Dir(s) 22,847,127,552 bytes free
c:\ssgit\mygitrepo>
```

Mini advanced stuff Branching



<one at a time>
git branch mybranch
git checkout mybranch
Notepad f3.txt (save it)
git add f3.txt
git commit -m "added f3 in branch"
Dir
git checkout master
Dir

```
Command Prompt
c:\ssgit\mygitrepo>notepad f3.txt
c:\ssgit\mygitrepo>git add f3.txt
c:\ssgit\mygitrepo>git commit -m "added f3 file in new branch"
[mybranch de2fed9] added f3 file in new branch
 1 file changed, 1 insertion(+)
 create mode 100644 f3.txt
c:\ssgit\mygitrepo>dir
 Volume in drive C is OSDisk
 Volume Serial Number is DCFC-90BB
 Directory of c:\ssgit\mygitrepo
05/28/2020 04:11 PM
                       <DIR>
05/28/2020 04:11 PM
                       <DIR>
05/28/2020 03:51 PM
                                    6 f1.txt
05/28/2020 04:10 PM
                                    4 f2.txt
05/28/2020 04:11 PM
                                    2 f3.txt
              3 File(s)
                                    12 bytes
              2 Dir(s) 22,841,503,744 bytes free
c:\ssgit\mygitrepo>git checkout master
Switched to branch 'master'
c:\ssgit\mygitrepo>dir
Volume in drive C is OSDisk
 Volume Serial Number is DCFC-90BB
 Directory of c:\ssgit\mygitrepo
05/28/2020 04:12 PM
                       <DIR>
05/28/2020 04:12 PM
                       <DIR>
05/28/2020 03:51 PM
                                    6 f1.txt
05/28/2020 04:10 PM
                                    4 f2.txt
              2 File(s)
                                    10 bytes
              2 Dir(s) 22,849,486,848 bytes free
c:\ssgit\mygitrepo>_
```

Mini advanced Merge your changes

```
git merge mybranch
Dir
git status
git log --oneline
```

```
c:\ssgit\mygitrepo>git merge mybranch
Updating 178e31a..de2fed9
Fast-forward
f3.txt | 1 +
1 file changed, 1 insertion(+)
create mode 100644 f3.txt
c:\ssgit\mygitrepo>dir
Volume in drive C is OSDisk
Volume Serial Number is DCFC-90BB
Directory of c:\ssgit\mygitrepo
05/28/2020 04:13 PM
                       <DIR>
05/28/2020 04:13 PM
                       <DIR>
                                    6 f1.txt
05/28/2020 03:51 PM
                                   4 f2.txt
05/28/2020 04:10 PM
05/28/2020 04:13 PM
                                   2 f3.txt
              3 File(s)
                                   12 bytes
              2 Dir(s) 22,854,336,512 bytes free
c:\ssgit\mygitrepo>git status
On branch master
nothing to commit, working tree clean
c:\ssgit\mygitrepo>git log --one-line
fatal: unrecognized argument: --one-line
c:\ssgit\mygitrepo>git log --oneline
de2fed9 (HEAD -> master, mybranch) added f3 file in new branch
178e31a f2
8250034 added f1
c:\ssgit\mygitrepo>_
```

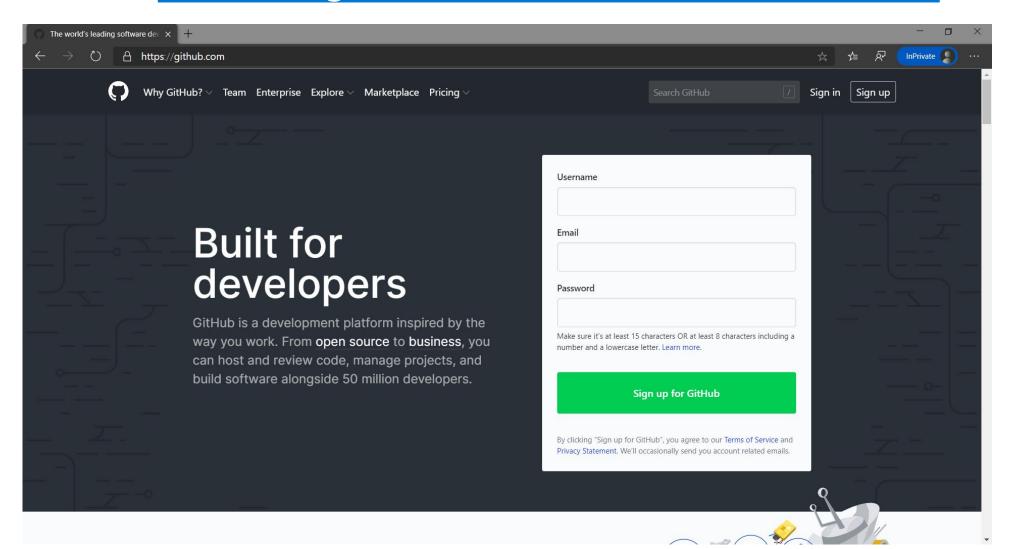
Command Prompt



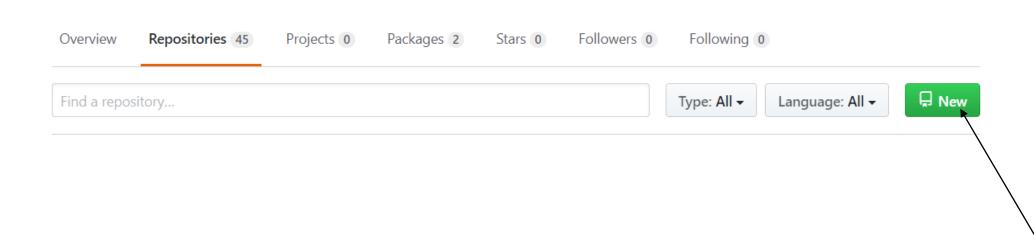


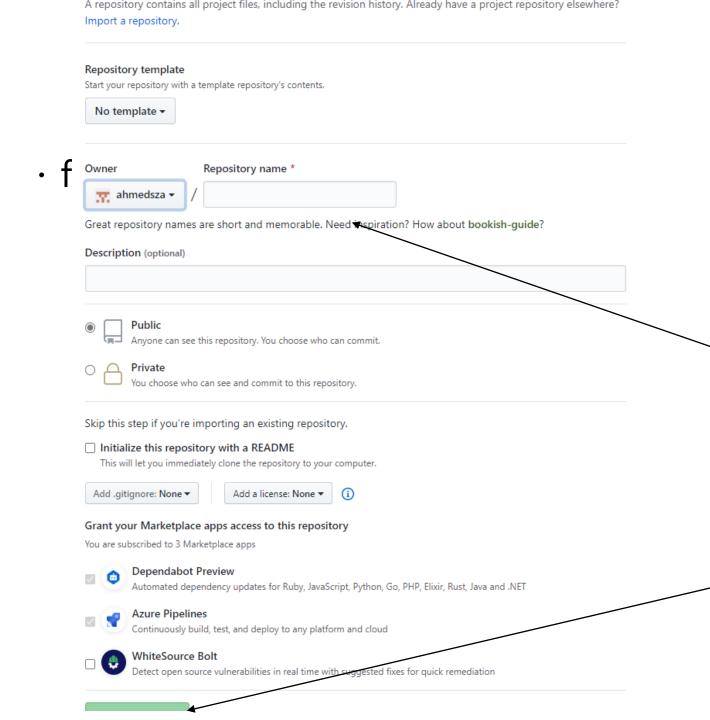
Sign up for GitHub

Visit www.github.com – create an account



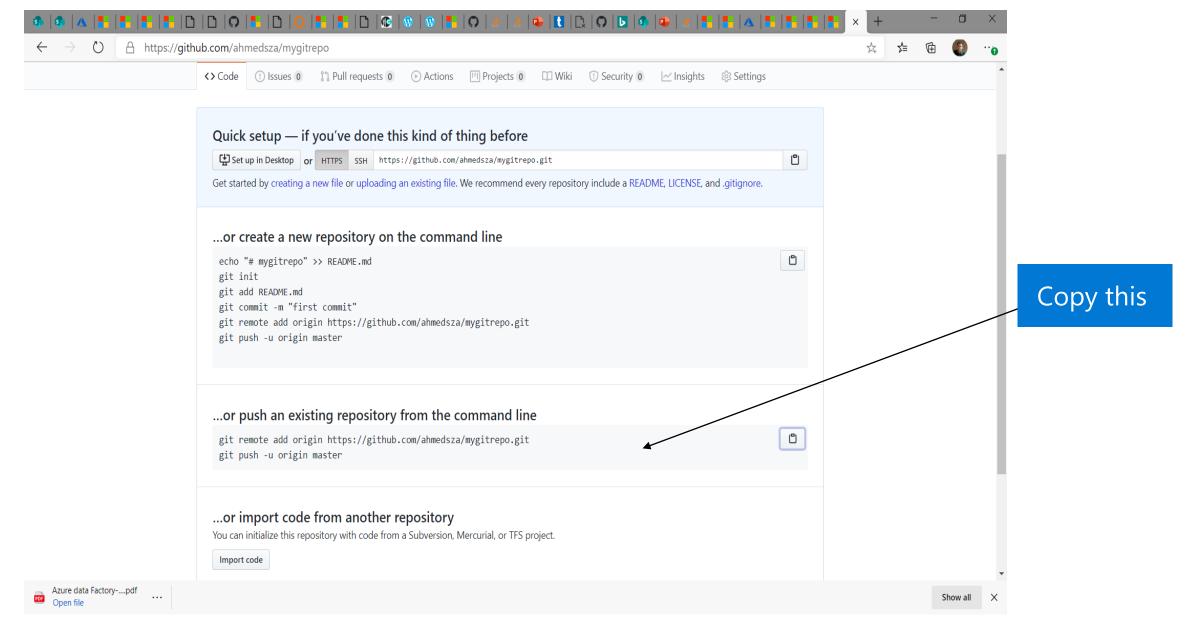
Create a repo

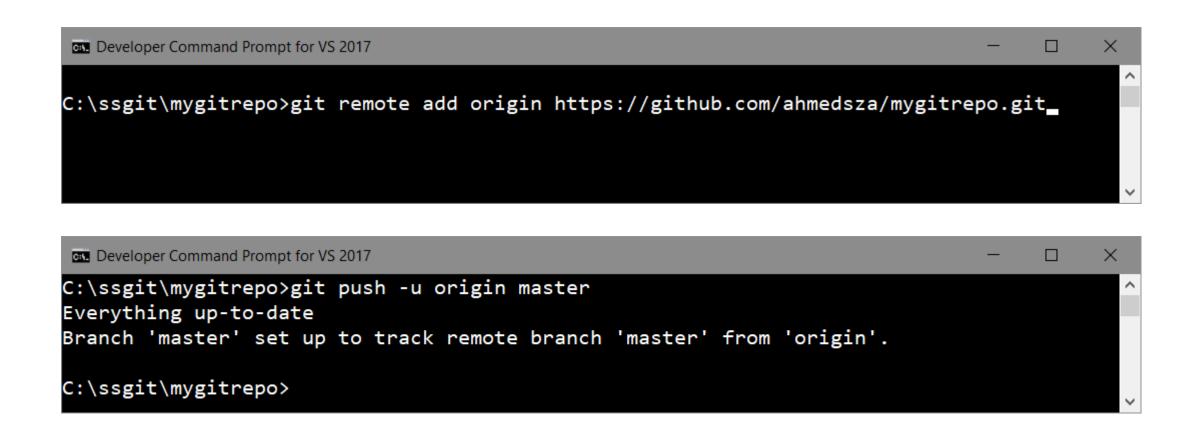




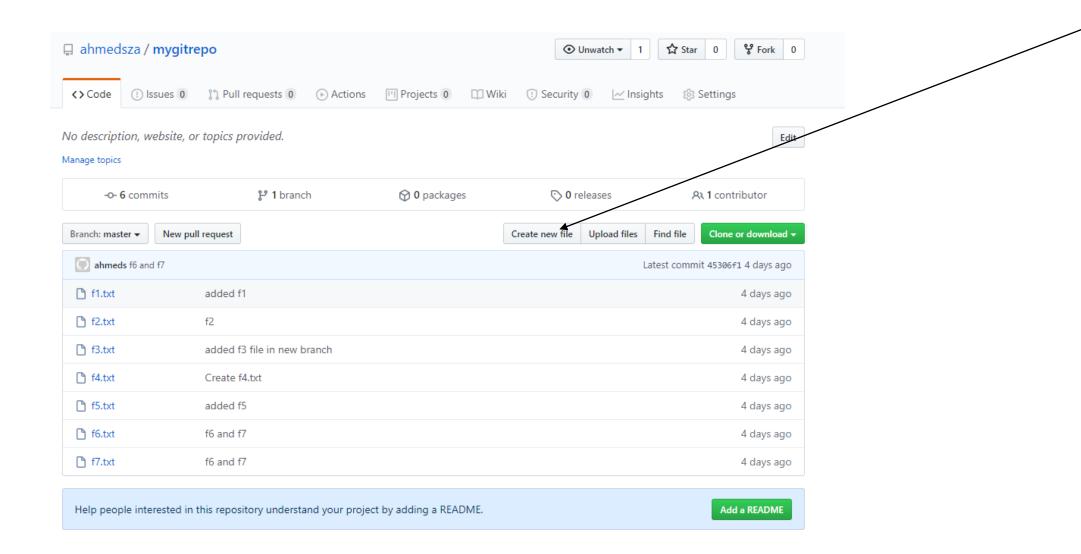
Fill this in and click create repository

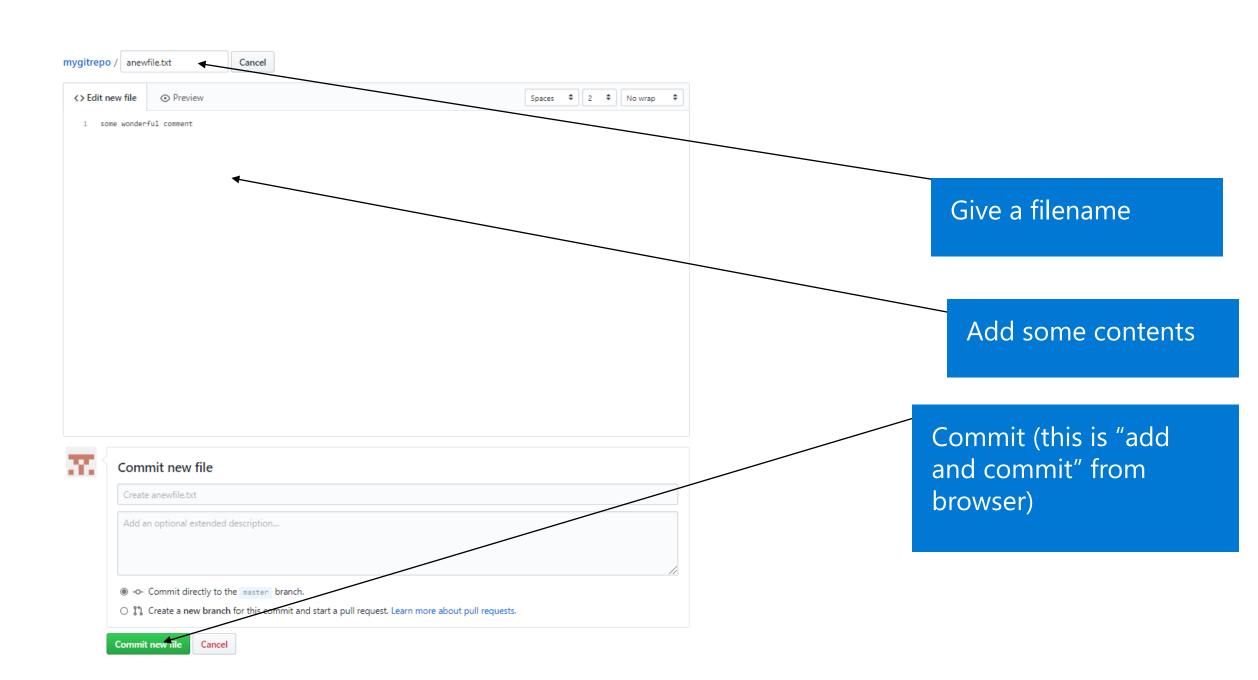
Push our files to GitHub





Make some changes in the browser



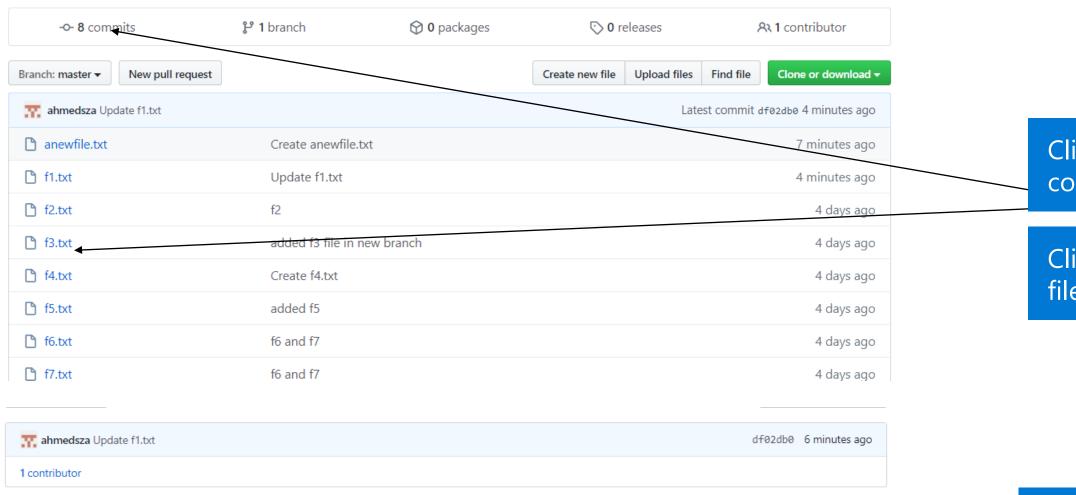


Get the changes locally

Git pull

```
Developer Command Prompt for VS 2017
C:\ssgit\mygitrepo>git pull
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), done.
From https://github.com/ahmedsza/mygitrepo
   45306f1..ae92998 master -> origin/master
Updating 45306f1..ae92998
Fast-forward
 anewfile.txt | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 anewfile.txt
```

Manage topics



Blame History

Click on commits

Click on a filename.

"Play" with these options

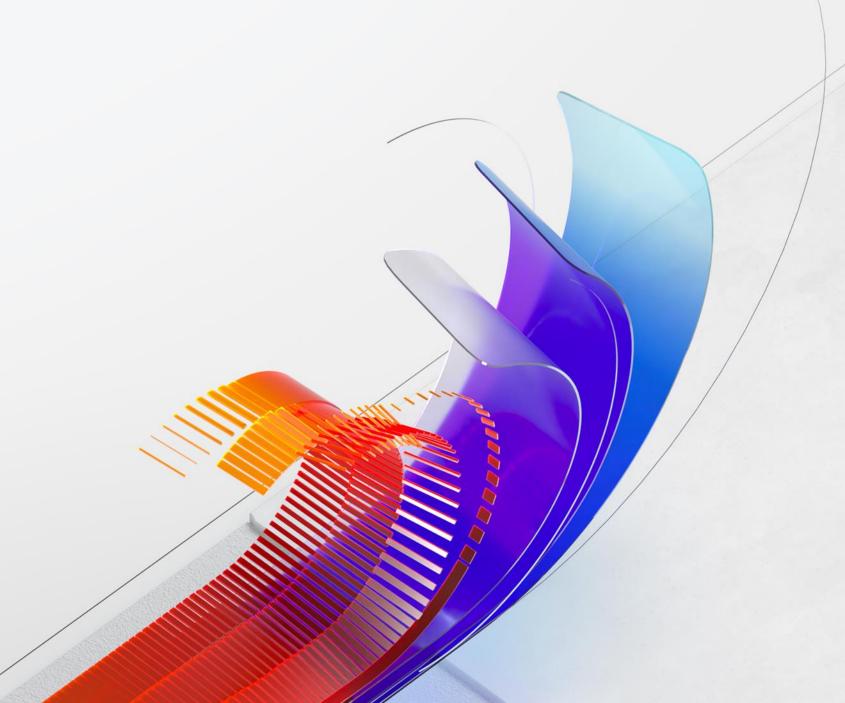
3 lines (2 sloc) 21 Bytes

1 fsafsa

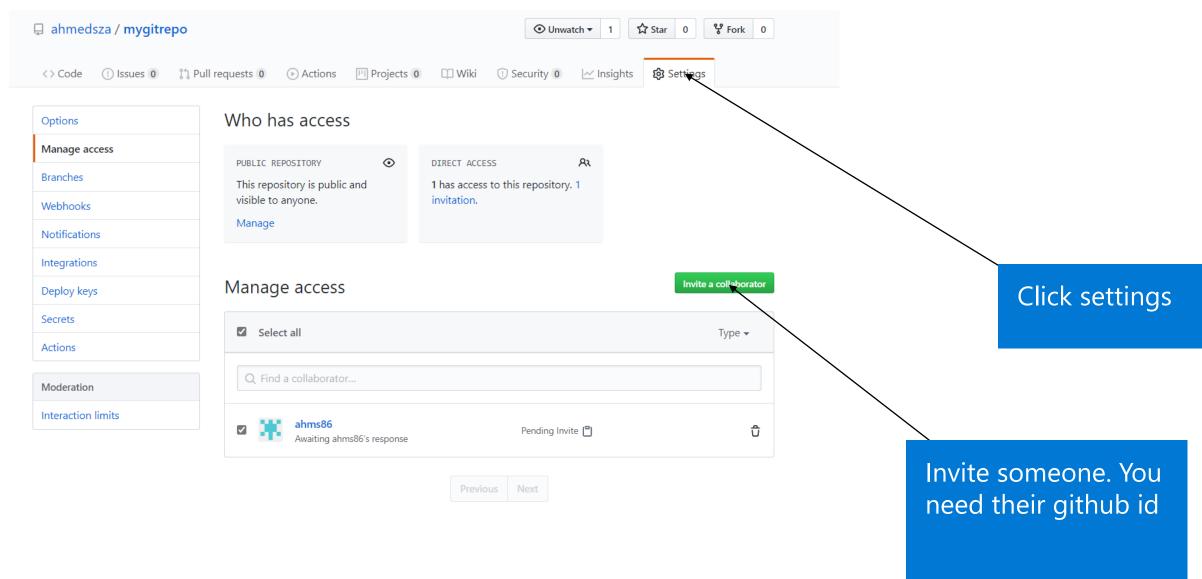
∃ cghange nade



Collaboration

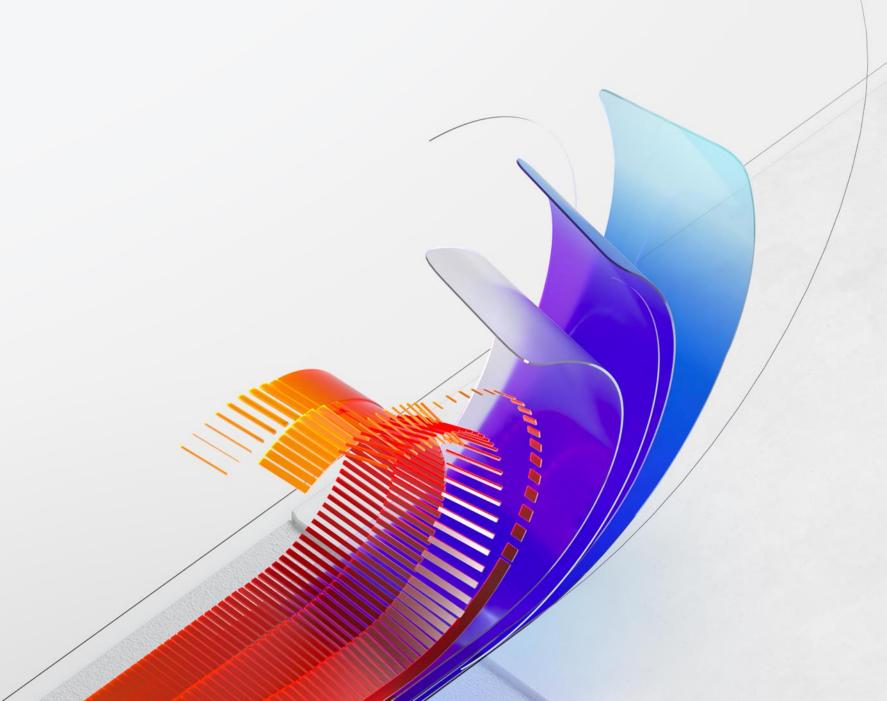


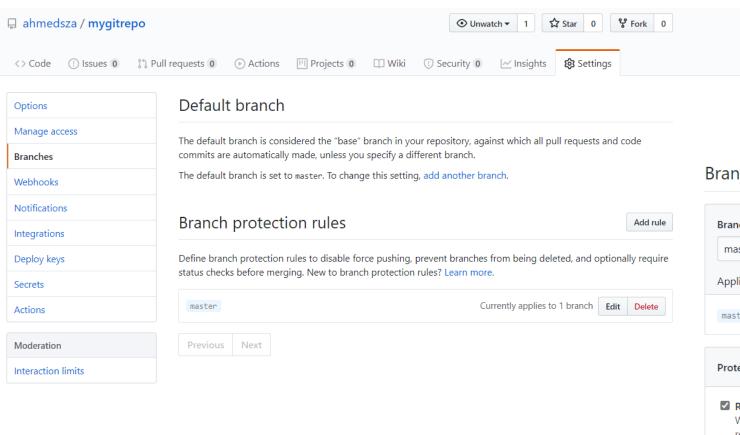
Add collaborators





Pull request



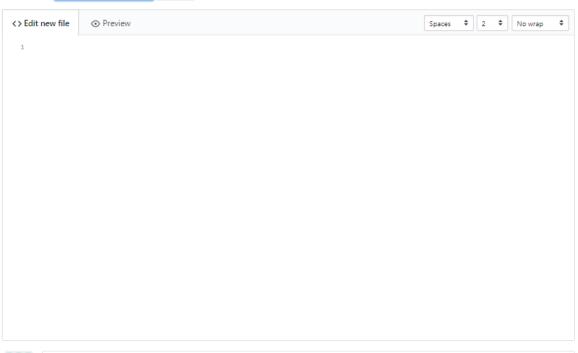


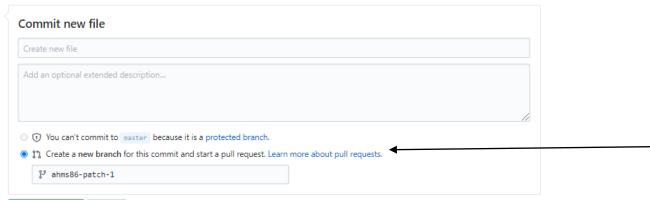
Branch protection rule

Branch name pattern	
master	
applies to 1 branch	
master	
rotect matching branches	
✓ Require pull request reviews When enabled, all commits mus	before merging It be made to a non-protected branch and submitted via a pull request with the
· ·	eviews and no changes requested before it can be merged into a branch that
required number of approving r	reviews and no changes requested before it can be merged into a branch that
required number of approving rematches this rule. Required approving reviews: 1 Dismiss stale pull request New reviewable commits pu	approvals when new commits are pushed shed to a matching branch will dismiss pull request review approvals.
required number of approving rematches this rule. Required approving reviews: 1 To Dismiss stale pull request New reviewable commits put Require review from Code	approvals when new commits are pushed shed to a matching branch will dismiss pull request review approvals.

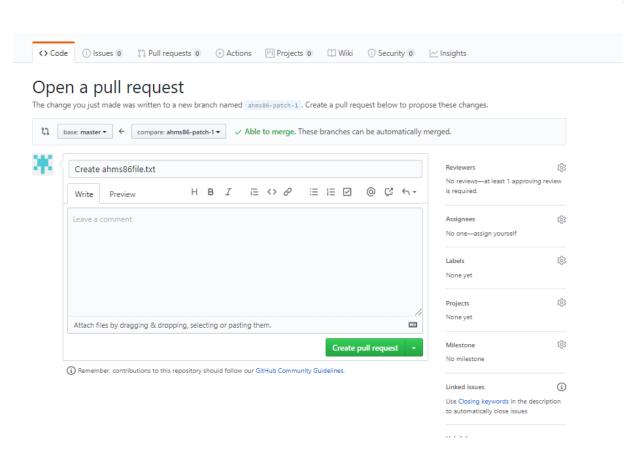
Add a file mygitrepo / Name your file... Cancel

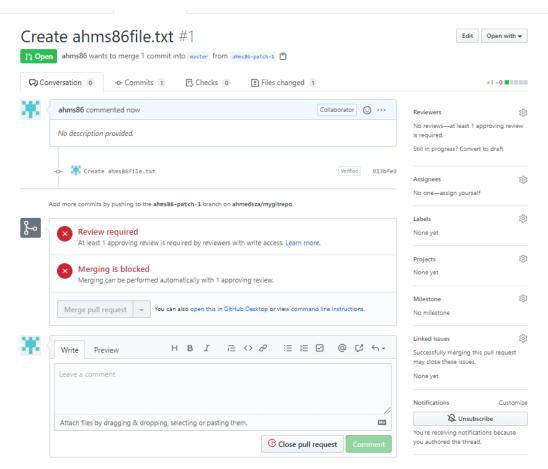
Cancel



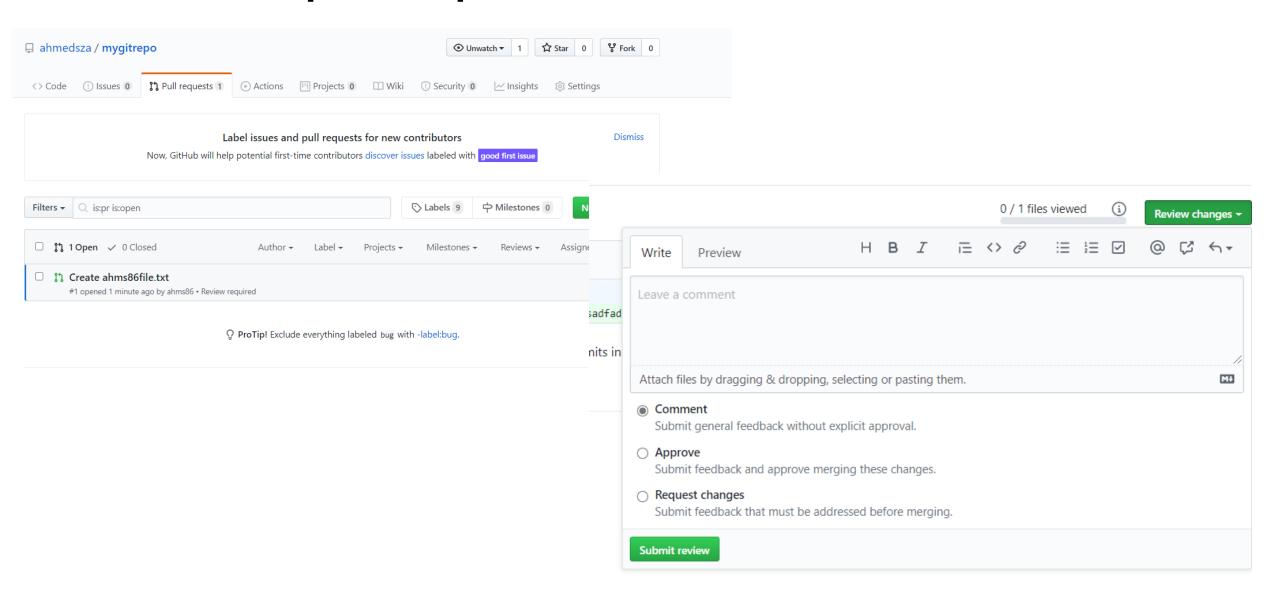


Open a pull request





Review the pull request



Merge it

