

Creating Repositories and Collaborating with Git

// FLATIRON SCHOOL



Git branches

Creating a new feature:

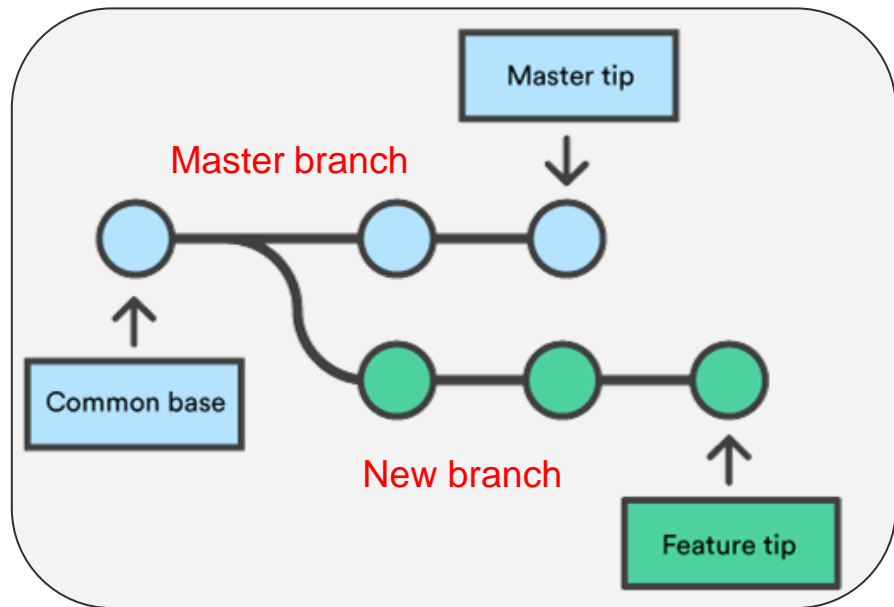
- Want to try out some new stuff.

Don't want to affect main project yet.

Create a branch!

Two ways:

- `git branch <new_branch_name>`
- `git checkout -b <branch_name>`



Creating branches

Creating a new feature:

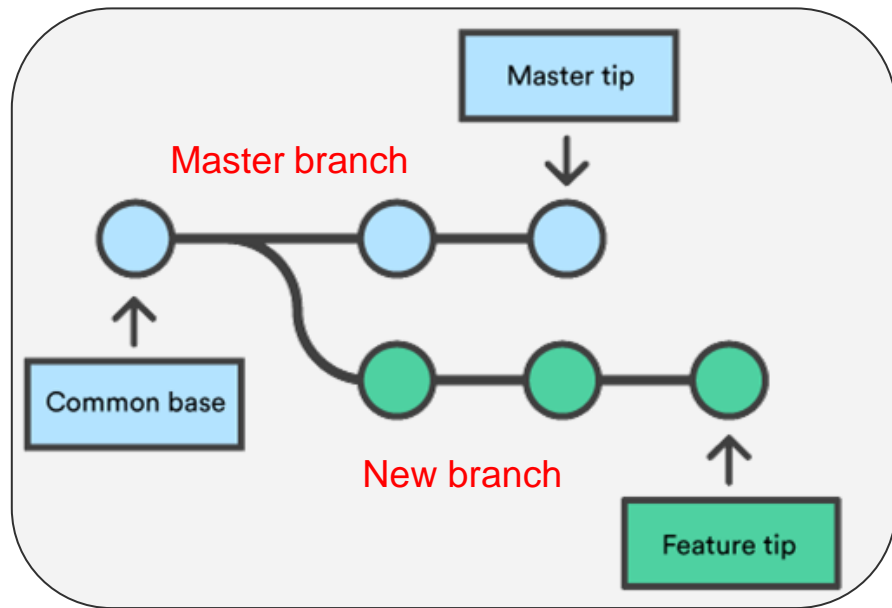
- Want to try out some new stuff.

Don't want to affect main project yet.

Create a branch!

Two ways:

- `git branch <new_branch_name>`
- `git checkout -b <branch_name>`



Creates new branch

Creating branches

Creating a new feature:

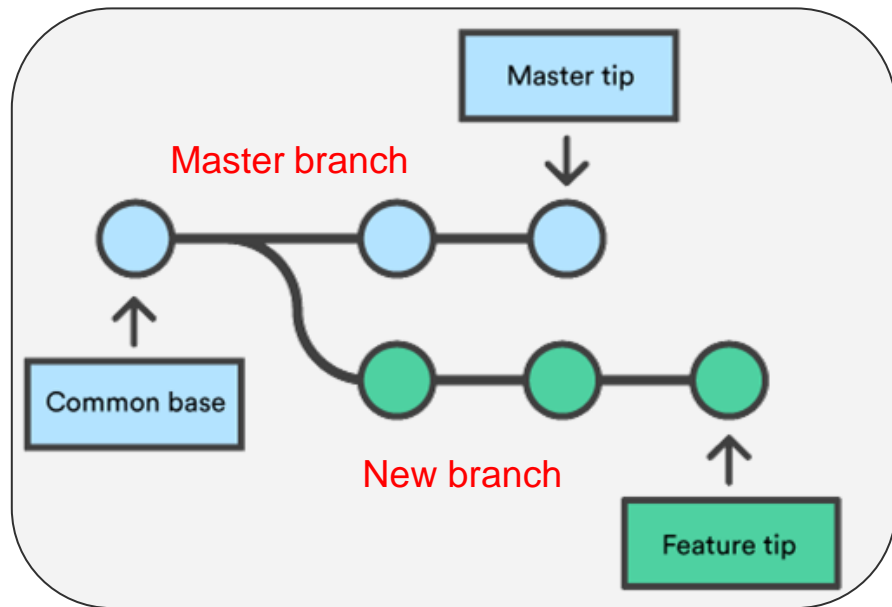
- Want to try out some new stuff.

Don't want to affect main project yet.

Create a branch!

Two ways:

- `git branch <new_branch_name>`
- `git checkout -b <branch_name>`



Creates new branch and switches to branch

Git branches

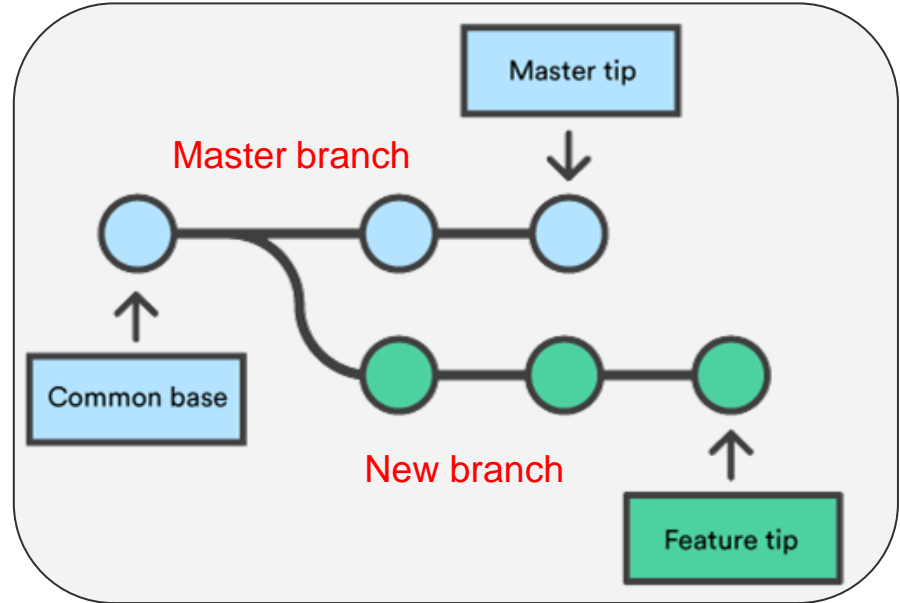
Branch has been created.

- `git branch <new_branch_name>`

Now let's see all the branches in repo:

- `git branch`

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git branch mess_with_stuff
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git branch
* master
  mess_with_stuff
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ |
```



Switching branches (git checkout)

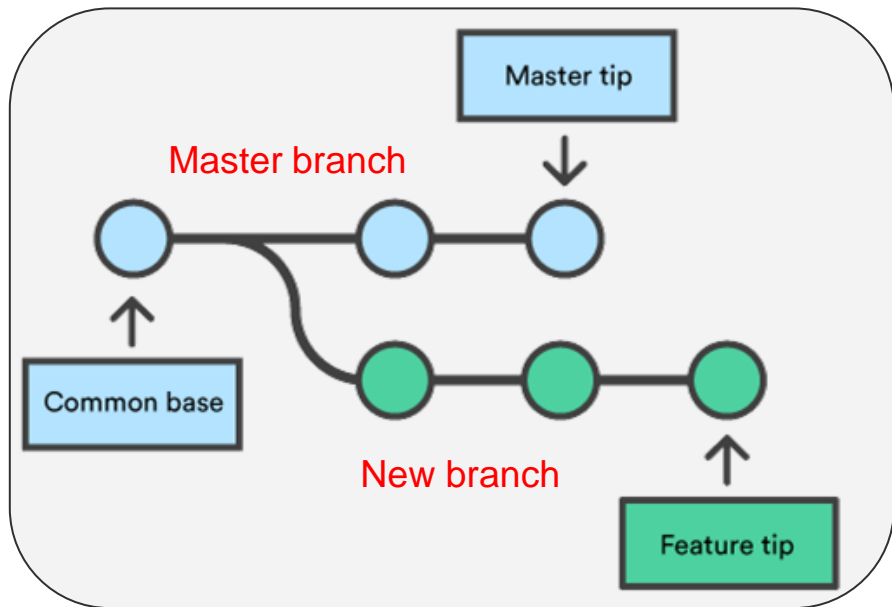
Branch has been created.

- `git branch <new_branch_name>`

Now switch to the new branch:

- `git checkout <branch_name>`

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git branch mess_with_stuff
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git branch
* master
  mess_with_stuff
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git checkout mess_with_stuff
Switched to branch 'mess_with_stuff'
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (mess_with_stuff)
$
```

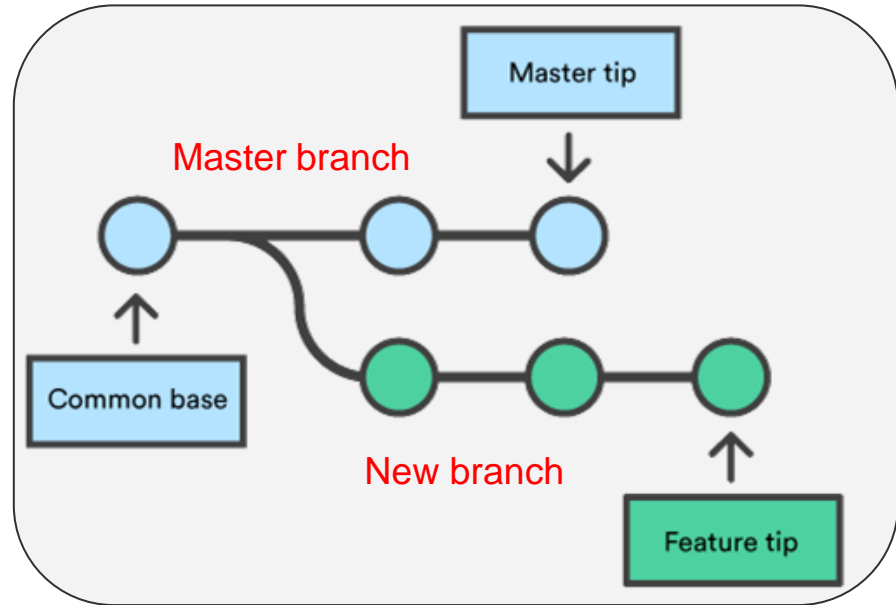


Git branches

Or can do this:

- `git checkout -b <branch_name>`

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git status
On branch master
nothing to commit, working tree clean
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git branch
* master
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git checkout -b mess_with_stuff
Switched to a new branch 'mess_with_stuff'
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (mess_with_stuff)
$ |
```



Git branches

- Make changes to goodfibonacci notebook
- Turn into a class object (will see objects later)

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (mess_with_stuff)
$ git status
On branch mess_with_stuff
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   good_fibonacci.ipynb
```

Fibonacci with Dynamic Programming

(a.k.a don't repeat work)

Fibonacci class

```
class Fibonacci:

    def __init__(self, n):

        self.n = n
        self.result_dict = {0: 1, 1: 1}

    def compute_sequence(self):
        self.__fib(self.n)

    def __fib(self, n):

        if n == 0:
            return 0
        elif n == 1:
            return 1
        else:

            # if already computed, use value in lookup table
            if (n - 1) in self.result_dict.keys():
                fibn1 = self.result_dict[n-1]
            else:
                # otherwise, compute
                fibn1 = self.__fib(n-1)
            # if already computed, use value in lookup table
            if (n - 2) in self.result_dict.keys():
                fibn2 = self.result_dict[n-2]
            else:
                # otherwise, compute
                fibn2 = self.__fib(n-2)
```


Git branches

On new branch:

- Add change to staging area

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (mess_with_stuff)
$ git status
On branch mess_with_stuff
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   good_fibonacci.ipynb
```

And commit.

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (mess_with_stuff)
$ git commit -m "Put dynamic programming solution into class object"
[mess_with_stuff c34afdb] Put dynamic programming solution into class object
1 file changed, 75 insertions(+), 45 deletions(-)
```

Pushing from branch

On new branch:

- Add change to staging area

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (mess_with_stuff)
$ git status
On branch mess_with_stuff
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   good_fibonacci.ipynb
```

And commit.

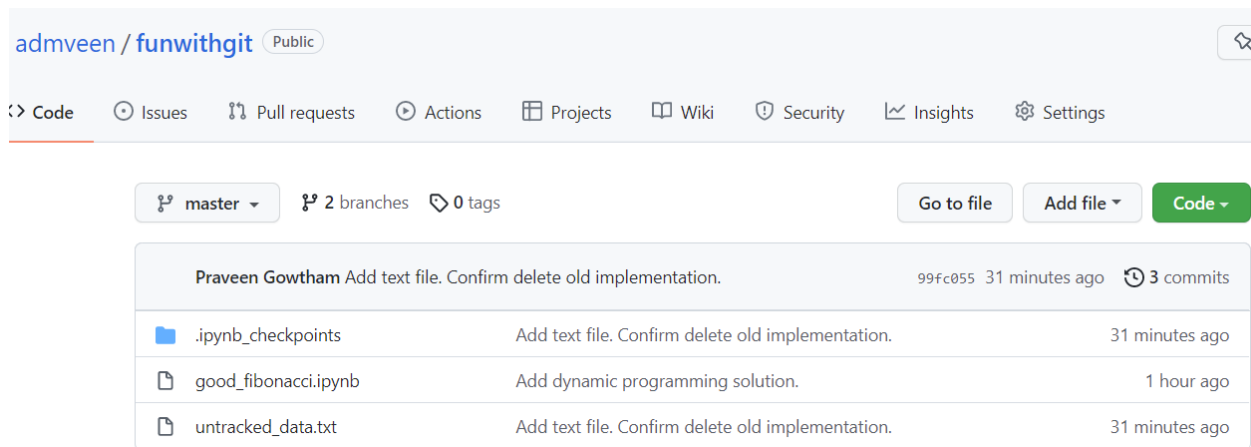
```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (mess_with_stuff)
$ git commit -m "Put dynamic programming solution into class object"
[mess_with_stuff c34afdb] Put dynamic programming solution into class object
1 file changed, 75 insertions(+), 45 deletions(-)
```

git push origin **new_branch**

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (mess_with_stuff)
$ git push origin mess_with_stuff
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 840 bytes | 420.00 KiB/s, done.
Total 3 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
remote:
remote: Create a pull request for 'mess_with_stuff' on GitHub by visiting:
remote:   https://github.com/admveen/funwithgit/pull/new/mess_with_stuff
remote:
To https://github.com/admveen/funwithgit.git
 * [new branch]      mess_with_stuff -> mess_with_stuff
```

Github before new branch

Before changes/commit on new branch



The screenshot shows the GitHub interface for the repository 'admveen / funwithgit'. The repository is public. The navigation bar includes links for Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. The 'Code' tab is selected. Below the navigation bar, there are buttons for 'Go to file', 'Add file', and 'Code'. The commit history table shows three commits by Praveen Gowtham.

admveen / funwithgit (Public)

<> Code Issues Pull requests Actions Projects Wiki Security Insights Settings


master 2 branches 0 tags Go to file Add file Code




Praveen Gowtham Add text file. Confirm delete old implementation.		99fc055 31 minutes ago 3 commits
ipynb_checkpoints	Add text file. Confirm delete old implementation.	31 minutes ago
good_fibonacci.ipynb	Add dynamic programming solution.	1 hour ago
untracked_data.txt	Add text file. Confirm delete old implementation.	31 minutes ago





After pushing new branch

Github repo now looks like this!


On the master branch:




 mess_with_stuff had recent pushes 3 minutes ago [Compare & pull request](#)


 master  3 branches  0 tags [Go to file](#) [Add file](#) [Code](#)





 Praveen Gowtham	Add text file. Confirm delete old implementation.	99fc055 2 days ago ⌚ 3 commits
 .ipynb_checkpoints	Add text file. Confirm delete old implementation.	2 days ago
 good_fibonacci.ipynb	Add dynamic programming solution.	2 days ago
 untracked_data.txt	Add text file. Confirm delete old implementation.	2 days ago

There's a new branch!

 mess_with_stuff had recent pushes 7 minutes ago [Compare & pull request](#)

 mess_with_stuff  3 branches  0 tags [Go to file](#) [Add file](#) [Code](#)

This branch is 1 commit ahead of master.  Contribute

 Praveen Gowtham	Put dynamic programming solution into class object	c34afdb 19 minutes ago ⌚ 4 commits
 .ipynb_checkpoints	Add text file. Confirm delete old implementation.	2 days ago
 good_fibonacci.ipynb	Put dynamic programming solution into class object	19 minutes ago
 untracked_data.txt	Add text file. Confirm delete old implementation.	2 days ago

Will talk about compare/pull requests later.

git merge

Say that:

- Didn't mess up anything else.
- Like new changes:

Want to combine changes in new branch into master workflow.

Our case: simple.

- Merge two local branches (mess_with_stuff into master)

Step 1: go into destination branch

`git checkout <destination_branch>`



Step 2: merge the source branch into destination

`git merge <source_branch>`




```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (mess_with_stuff)
$ git checkout master
Switched to branch 'master'
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git merge mess_with_stuff
Updating 99fc055..c34afdb
Fast-forward
 good_fibonacci.ipynb | 120 ++++++-----
 1 file changed, 75 insertions(+), 45 deletions(-)
```




Git branches

Bam! Our class object based solution is now in master.

 admveen / funwithgit Public 

[Code](#) [Issues](#) [Pull requests](#) [Actions](#) [Projects](#) [Wiki](#) [Security](#) [Insights](#) [Settings](#)

 master  3 branches  0 tags [Go to file](#) [Add file](#) [Code](#)

Praveen Gowtham Put dynamic programming solution into class object		c34afdb 2 hours ago 4 commits
 .ipynb_checkpoints	Add text file. Confirm delete old implementation.	2 days ago
 good_fibonacci.ipynb	Put dynamic programming solution into class object	2 hours ago
 untracked_data.txt	Add text file. Confirm delete old implementation.	2 days ago

git branch -d (deleting branches)

Merge complete.

Don't want/need new branch
(mess_with_stuff)

`git branch -d <branch_name>`

Deletes branch if safe to do so (i.e obsolete branch).

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git branch -d mess_with_stuff
Deleted branch mess_with_stuff (was c34afdb).
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git branch
* master
(base)
```

git branch -d (deleting branches)

Merge complete.

Don't want/need new branch
(mess_with_stuff)

`git branch -d <branch_name>`

Deletes branch if safe to do so (i.e obsolete branch).

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git branch -d mess_with_stuff
Deleted branch mess_with_stuff (was c34afdb).
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git branch
* master
(base)
```

Pushes branch deletion onto remote github repo

`git push remote_name :deleted_branch`

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git push origin :mess_with_stuff
To https://github.com/admveen/funwithgit.git
- [deleted]          mess_with_stuff
```

The screenshot shows a GitHub repository page for 'funwithgit'. At the top, it indicates '2 branches' and '0 tags'. A dropdown menu for 'Switch branches/tags' is open, showing a search bar 'Find or create a branch...' and a list of branches: 'master' (checked) and 'main'. The 'master' branch is marked as 'default'. Below the branch list, there is a link 'View all branches'. The main content area shows a commit history table with the following entries:

Commit Message	Commit Hash	Time Ago	Commits
Adding solution into class object	c34afdb	3 hours ago	4 commits
Add text file. Confirm delete old implementation.		2 days ago	
Put dynamic programming solution into class object		3 hours ago	
Add text file. Confirm delete old implementation.		2 days ago	

At the bottom of the page, there is a green button labeled 'Add a README'.

Git branches

Creating a new feature:

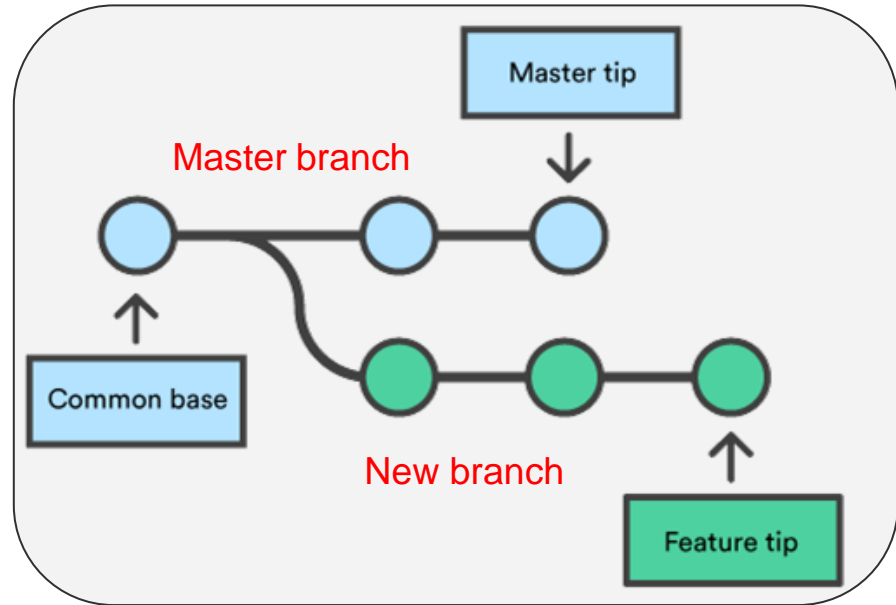
- Want to try out some new stuff.

Don't want to affect main project yet.

Create a branch!

Two ways:

- `git branch <new_branch_name>`
- `git checkout -b <branch_name>`



Creates new branch and switches to branch

Restoring a previous state

Boss hates everything except first, old
(crappy) implementation

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git log --graph
* commit c34afdb910aa96c7668253fd7525eb6796094d75 (HEAD -> master, origin/master)
  Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
  Date: Wed Feb 23 20:08:38 2022 -0500

    Put dynamic programming solution into class object

* commit 99fc0555ff0a98a221ca22f2fad45ca01c2cbb48
  Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
  Date: Mon Feb 21 14:30:58 2022 -0500

    Add text file. Confirm delete old implementation.

* commit 847e7582b0d7deb7bf0e3258256c2e88beb822cb
  Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
  Date: Mon Feb 21 14:13:13 2022 -0500

    Add dynamic programming solution.

* commit 3bc106469af06625930ff9fa6ac0762f1170fee3
  Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
  Date: Mon Feb 21 12:53:04 2022 -0500

    Add naive implementation of Fibonacci
```

Git hash identifier for commit:
First 7 or so characters enough.

Restoring via new branch

Boss hates everything except first, old (crappy) implementation

Create new branch with contents of branch as referenced commit state

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git log --graph
* commit c34afdb910aa96c7668253fd7525eb6796094d75 (HEAD -> master, origin/master)
  Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
  Date:   Wed Feb 23 20:08:38 2022 -0500

    Put dynamic programming solution into class object

* commit 99fc0555ff0a98a221ca22f2fad45ca01c2cbb48
  Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
  Date:   Mon Feb 21 14:30:58 2022 -0500

    Add text file. Confirm delete old implementation.

* commit 847e7582b0d7deb7bf0e3258256c2e88beb822cb
  Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
  Date:   Mon Feb 21 14:13:13 2022 -0500

    Add dynamic programming solution.

* commit 3bc106469af06625930ff9fa6ac0762f1170fee3
  Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
  Date:   Mon Feb 21 12:53:04 2022 -0500

    Add naive implementation of Fibonacci
```

`git checkout -b branchname commit_hash`

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git checkout -b naive_old_state 3bc1064
Switched to a new branch 'naive_old_state'
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (naive_old_state)
$ ls
naivefibonacci.ipynb
```

Git hash identifier for commit:
First 7 or so characters enough.

Restoring via new branch on Github




Create new branch with contents of branch as referenced commit state

`git checkout -b branchname commit_hash`

After push:

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (naive_old_state)
$ git push origin naive_old_state
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'naive_old_state' on GitHub by visiting:
remote:   https://github.com/admveen/funwithgit/pull/new/naive_old_state
remote:
To https://github.com/admveen/funwithgit.git
 * [new branch]      naive_old_state -> naive_old_state
```

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git checkout -b naive_old_state 3bc1064
Switched to a new branch 'naive_old_state'
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (naive_old_state)
$ ls
naivefibonacci.ipynb
```


 naive_old_state ▾  3 branches  0 tags

[Go to file](#) [Add file ▾](#) [Code ▾](#)

This branch is 3 commits behind master. [Contribute ▾](#)

Praveen Gowtham Add naive implementation of Fibonacci

3bc1064 2 days ago 1 commit

 naivefibonacci.ipynb

Add naive implementation of Fibonacci

2 days ago

git revert

This reverts a certain commit

Really nice: it logs the undoing as a commit.

`git revert commit_hash`

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git revert 99fc0555
[master 810ca80] This reverts commit 99fc0555ff0a98a221ca22f2fad45ca01c2cbb48.
3 files changed, 100 deletions(-)
delete mode 100644 .ipynb_checkpoints/good_fibonacci-checkpoint.ipynb
rename .ipynb_checkpoints/naivefibonacci-checkpoint.ipynb => naivefibonacci.ipynb (100%)
delete mode 100644 untracked_data.txt
```

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git log --graph
* commit c34afdb910aa96c7668253fd7525eb6796094d75 (HEAD -> master, origin/master)
  Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
  Date: Wed Feb 23 20:08:38 2022 -0500

    Put dynamic programming solution into class object

* commit 99fc0555ff0a98a221ca22f2fad45ca01c2cbb48
  Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
  Date: Mon Feb 21 14:30:58 2022 -0500

    Add text file. Confirm delete old implementation.

* commit 847e7582b0d7deb7bf0e3258256c2e88beb822cb
  Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
  Date: Mon Feb 21 14:13:13 2022 -0500

    Add dynamic programming solution.

* commit 3bc106469af06625930ff9fa6ac0762f1170fee3
  Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
  Date: Mon Feb 21 12:53:04 2022 -0500

    Add naive implementation of Fibonacci
```

Undo all changes made by this commit.

git revert

This reverts a certain commit

Really nice: it logs the undoing as a commit.

Text editor pops up with revert details for editing. :wq to exit when done.

```
Revert "Add text file. Confirm delete old implementation."
```

```
This reverts commit 99fc0555ff0a98a221ca22f2fad45ca01c2cbb48.
```

```
# Please enter the commit message for your changes. Lines starting  
# with '#' will be ignored, and an empty message aborts the commit.  
#
```

```
# On branch master
```

```
# Changes to be committed:
```

```
#   deleted:    .ipynb_checkpoints/good_fibonacci-checkpoint.ipynb  
#   renamed:    .ipynb_checkpoints/naivefibonacci-checkpoint.ipynb -> naivefibonacci.ipynb  
#   deleted:    untracked_data.txt  
#
```

git revert

This reverts a certain commit

Really nice: it logs the undoing as a commit.

- Text file gone.
- Naïve implementation recovered.
- Dynamic programming solution: class implementation still there.

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git log
commit 810ca80ef81d12b41621c1bdadb90fab1088fed8 (HEAD -> master)
Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
Date: Thu Feb 24 06:17:04 2022 -0500

    This reverts commit 99fc0555ff0a98a221ca22f2fad45ca01c2cbb48.

commit c34afdb910aa96c7668253fd7525eb6796094d75 (origin/master)
Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
Date: Wed Feb 23 20:08:38 2022 -0500

    Put dynamic programming solution into class object

commit 99fc0555ff0a98a221ca22f2fad45ca01c2cbb48
Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
Date: Mon Feb 21 14:30:58 2022 -0500

    Add text file. Confirm delete old implementation.

commit 847e7582b0d7deb7bf0e3258256c2e88beb822cb
Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
Date: Mon Feb 21 14:13:13 2022 -0500

    Add dynamic programming solution.


commit 3bc106469af06625930ff9fa6ac0762f1170fee3 (origin/naive_old_state, naive_old_state)
Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
Date: Mon Feb 21 12:53:04 2022 -0500


    Add naive implementation of Fibonacci
```


```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ ls
good_fibonacci.ipynb  naivefibonacci.ipynb
```

Pushing reversion

Before:

 master ▾





 3 branches

 0 tags


Go to file


Add file ▾


Code ▾

Praveen Gowtham Put dynamic programming solution into class object			c34afdb 2 hours ago	 4 commits
	.ipynb_checkpoints	Add text file. Confirm delete old implementation.	2 days ago	
	good_fibonacci.ipynb	Put dynamic programming solution into class object	2 hours ago	
	untracked_data.txt	Add text file. Confirm delete old implementation.	2 days ago	

After:

 master ▾




 3 branches

 0 tags

Go to file

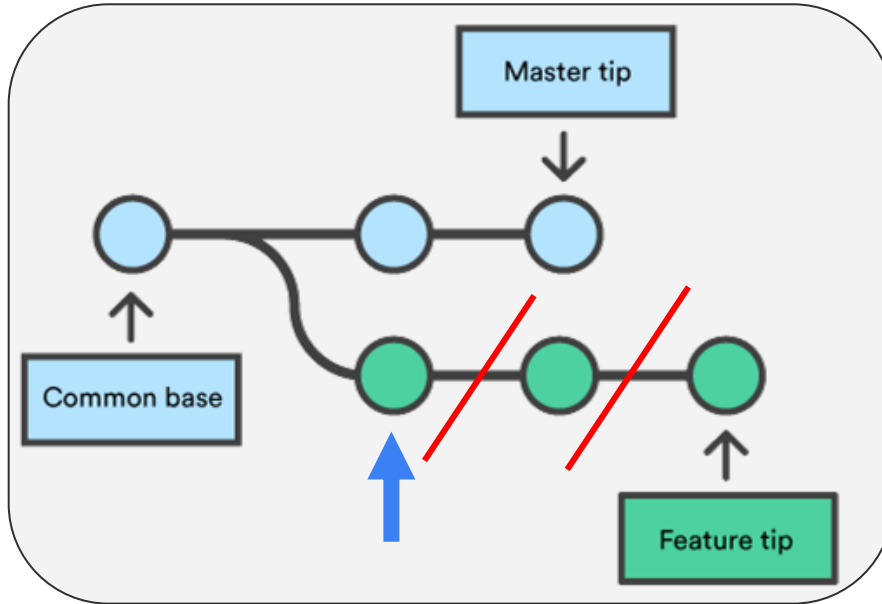
Add file ▾

Code ▾

Praveen Gowtham This reverts commit 99fc055 .			810ca80 30 minutes ago	 5 commits
	good_fibonacci.ipynb	Put dynamic programming solution into class object	11 hours ago	
	naivefibonacci.ipynb	This reverts commit 99fc055 .	30 minutes ago	

One last way: git reset

`git reset --hard <commit_hash>`



Destructive!!! Deletes files and rewrites history. Could be very bad news.

git fetch

So far: creating, merging and pushing local branches.

Sometimes want to create a branch that points to a branch in remote repository.

Case: Alfie has been working on one of the branches: `naïve_old_state`

- Says he's made some fun changes.
- I want to check it out (but don't want to pull directly)

The screenshot shows a GitHub repository interface. At the top, there's a header with the branch name 'naive_old_state', indicating 3 branches and 0 tags. Navigation buttons include 'Go to file', 'Add file', and 'Code'. A status bar below the header states 'This branch is 1 commit ahead, 4 commits behind master.' with a 'Contribute' button. The commit history shows a recent commit by 'admveen' titled 'Update naivefibonacci.ipynb' with commit hash '5b6e3e2' and timestamp '20 seconds ago', containing '2 commits'. Below this, a file entry for 'naivefibonacci.ipynb' is shown with a link to 'Update naivefibonacci.ipynb' and a timestamp of '20 seconds ago'. At the bottom, a light blue banner prompts the user to 'Help people interested in this repository understand your project by adding a README.' with an 'Add a README' button. A tooltip is visible over the file entry, displaying the commit message 'Update naivefibonacci.ipynb' and a snippet of the file's content: 'Alfie being a punk.'

git fetch

So far: creating, merging and pushing local branches.

Sometimes want to create a branch that points to a branch in remote repository.

Case: Alfie has been working on one of the branches: naïve_old_state

- Says he's made some fun changes.
- I want to check it out (but don't want to pull directly)

```
git fetch <remote_name> <remote_branch_name>
```

git fetch

So far: creating, merging and pushing local branches.

Sometimes want to create a branch that points to a branch in remote repository.

Case: Alfie has been working on one of the branches: naïve_old_state

- Says he's made some fun changes.
- I want to check it out (but don't want to pull directly)

```
git fetch <remote_name> <remote_branch_name>
```

```
git fetch origin naïve_old_state
```

git fetch

So far: creating, merging and pushing local branches.

Sometimes want to create a branch that points to a branch in remote repository.

Case: Alfie has been working on one of the branches: `naïve_old_state`

- Says he's made some fun changes.
- I want to check it out (but don't want to pull directly)

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git fetch origin naive_old_state
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), 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), 756 bytes | 63.00 KiB/s, done.
From https://github.com/admveen/funwithgit
* branch          naive_old_state -> FETCH_HEAD
   3bc1064..5b6e3e2 naive_old_state -> origin/naive_old_state
```

Updated information we have on origin/`naïve_old_state` .

Wanna check out what Alfie did.

git fetch

So far: creating, merging and pushing local branches.

Sometimes want to create a branch that points to a branch in remote repository.

Case: Alfie has been working on one of the branches: `naïve_old_state`

- Says he's made some fun changes.
- I want to check it out (but don't want to pull directly)

- Create local branch.
- Want local branch to contain current history of `naïve_old_state`

```
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git checkout -b alfie_naive origin/naive_old_state
Switched to a new branch 'alfie_naive'
branch 'alfie_naive' set up to track 'origin/naive_old_state'.
```

Updated information we have on `origin/naïve_old_state`.

git fetch

So far: creating, merging and pushing local branches.

Sometimes want to create a branch that points to a branch in remote repository.

- Create local branch.
- Want local branch to contain current history of naïve_old_state

Case: Alfie has been working on one of the branches: naïve_old_state

- Says he's made some fun changes.
- I want to check it out (but don't want to pull directly)

```
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (master)
$ git checkout -b alfie_naive origin/naive_old_state
Switched to a new branch 'alfie_naive'
branch 'alfie_naive' set up to track 'origin/naive_old_state'.
```

Updated information we have on origin/naïve_old_state .

git fetch

So far: creating, merging and pushing local branches.

Sometimes want to create a branch that points to a branch in remote repository.

Case: Alfie has been working on one of the branches: `naive_old_state`

- Says he's made some fun changes.
- I want to check it out (but don't want to pull directly)

Commit history? What did Alfie do?

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (alfie_naive)
$ git log
commit 5b6e3e280a507314e59e14a2f24e7ad8e3074355 (HEAD -> alfie_naive, origin/naive_old_state)
Author: Praveen Gowtham <73244466+admveen@users.noreply.github.com>
Date: Thu Feb 24 07:56:12 2022 -0500

    Update naivefibonacci.ipynb

    Alfie being a punk.

commit 3bc106469af06625930ff9fa6ac0762f1170fee3 (naive_old_state)
Author: Praveen Gowtham <praveen.gowtham@flatironschool.com>
Date: Mon Feb 21 12:53:04 2022 -0500

    Add naive implementation of Fibonacci
```


git diff

Can check the files and actual changes
that were made

`git diff old_branch new_branch`

`git diff naïve_old_state alfie_naive`

What did Alfie do?

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (alfie_naive)
$ git diff naïve_old_state alfie_naive
diff --git a/naivefibonacci.ipynb b/naivefibonacci.ipynb
index 9abd20c..d85adc8 100644
--- a/naivefibonacci.ipynb
+++ b/naivefibonacci.ipynb
@@ -9,7 +9,9 @@
     "\n",
     "Implement the Fibonacci sequence with recursion naively. Element sum of previous two elements.\n",
     "\n",
-    "0,1,1,2,3,5,8,13,21,34..."
+    "0,1,1,2,3,5,8,13,21,34...",
+    "\n",
+    "I'm Alfie and I make fun changes to things.\n"
 ]
 },
 {
```

git diff

Can check the files and actual changes
that were made

`git diff old_branch new_branch`

`git diff naïve_old_state alfie_naive`

What did Alfie do?

```
(base)
prave@LAPTOP-JA891BKF MINGW64 ~/Funwithgit (alfie_naive)
$ git diff naïve_old_state alfie_naive
diff --git a/naivefibonacci.ipynb b/naivefibonacci.ipynb
index 9abd20c..d85adc8 100644
--- a/naivefibonacci.ipynb
+++ b/naivefibonacci.ipynb
@@ -9,7 +9,9 @@
     "\n",
     "Implement the Fibonacci sequence with recursion naively. Element sum of previous two elements.\n",
     "\n",
-    "0,1,1,2,3,5,8,13,21,34..."
+    "0,1,1,2,3,5,8,13,21,34...",
+    "\n",
+    "I'm Alfie and I make fun changes to things.\n"
 ]
 },
 {
```

... Alfie ... dropping silly
markdown comments again.

Take it or leave it

We can accept the change by merging:

naïve_old_state and alfie_naive

`git merge naïve-old_state alfie_naive`

Drop it by deleting alfie's branch!

`git branch -d alfie_naive`

I decided to not incorporate his changes in my repo.

```
(base)
prave@LAPTOP-JA8918KF MINGW64 ~/Funwithgit (master)
$ git branch -d alfie_naive
warning: deleting branch 'alfie_naive' that has been merged to
      'refs/remotes/origin/naive_old_state', but not yet merged to HEAD.
Deleted branch alfie_naive (was 5b6e3e2).
(base)
```



Any Questions?