Remote Repository (GitHub)

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1 Recap- Git Workflow

Recap-Basic Commands

git init

git status

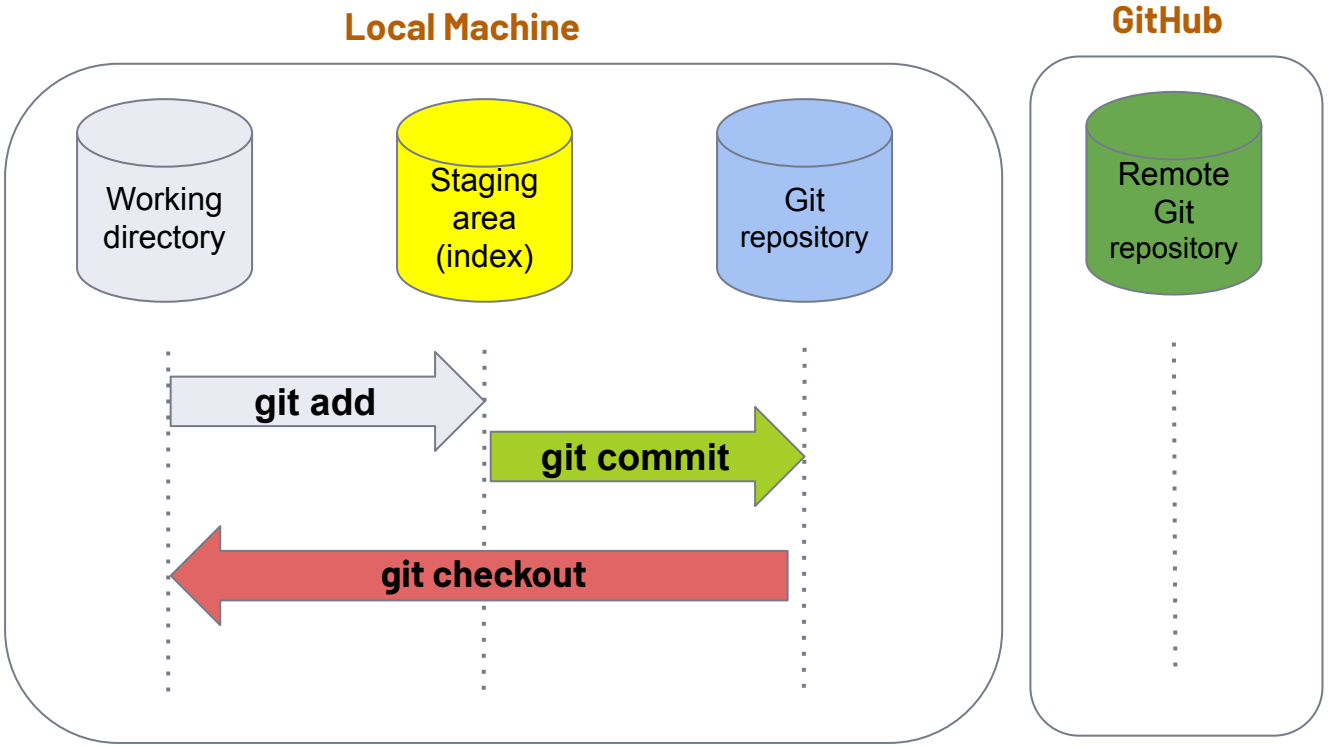
git add .

git rm --cached

git commit -m “abc”

git log

git checkout commitID



Recap-Branches

git branch branch_name

git branch

git branch -r

git branch -a

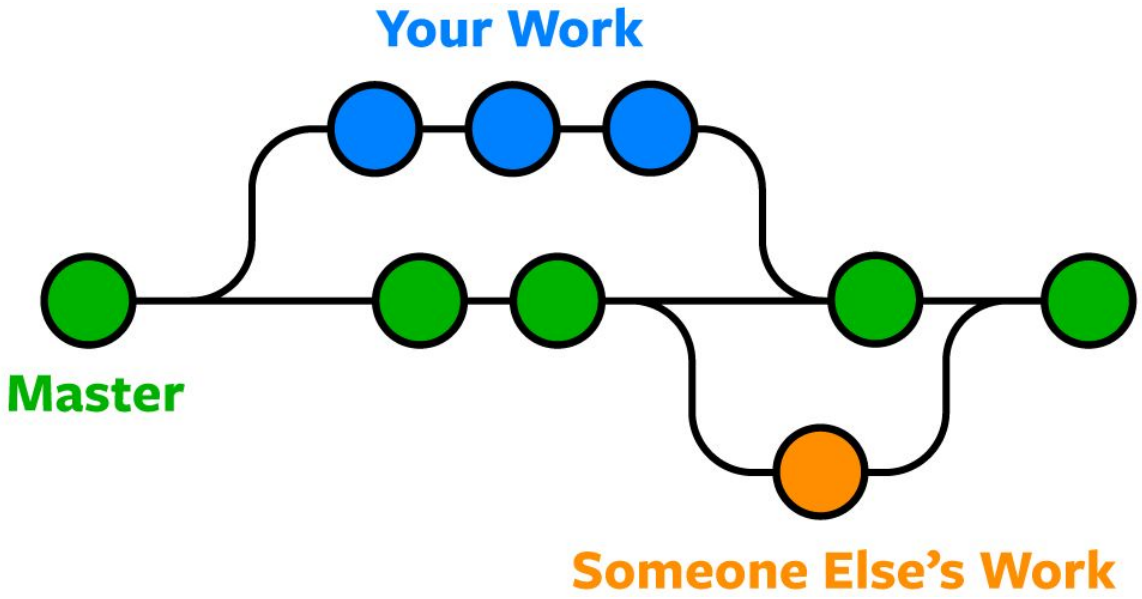
git checkout branch_name

git checkout -b branch_name

git branch -d branch_name

git branch -D branch_name

git merge branch_name

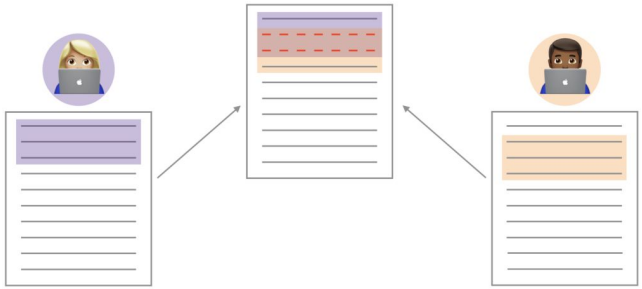


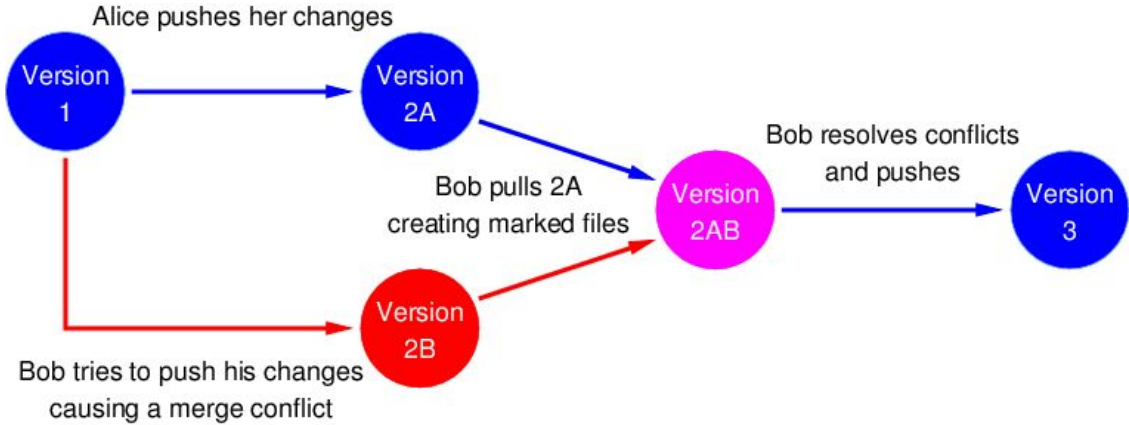
Branch is a new/separate version of the main repository

Merge Conflicts

Merge conflicts happen when you merge branches that have competing commits, and Git needs your help to decide which changes to incorporate in the final merge.

Same files were edited in both branches





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Remote Repository (GitHub)

Github - Remote Repository

Git

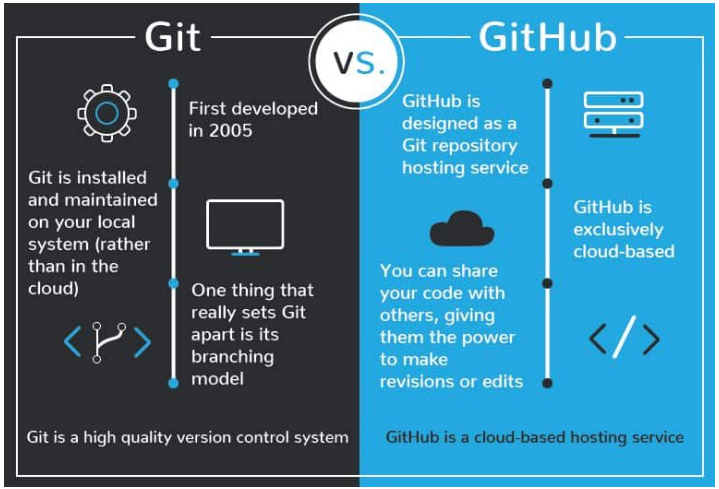
&

GitHub

Distributed version-control system

Repository hosting service

Github - Remote Repository



In Simple Terms

Git is a version control system that lets you manage and keep track of your source code history

Git Hub is a cloud-based hosting service that lets you manage Git repositories

Github - Remote Repository

Bitbucket

+ Follow + I use this

Stacks	Followers	Votes
25.8K	19.2K	2.8K

GitHub

+ Follow + I use this

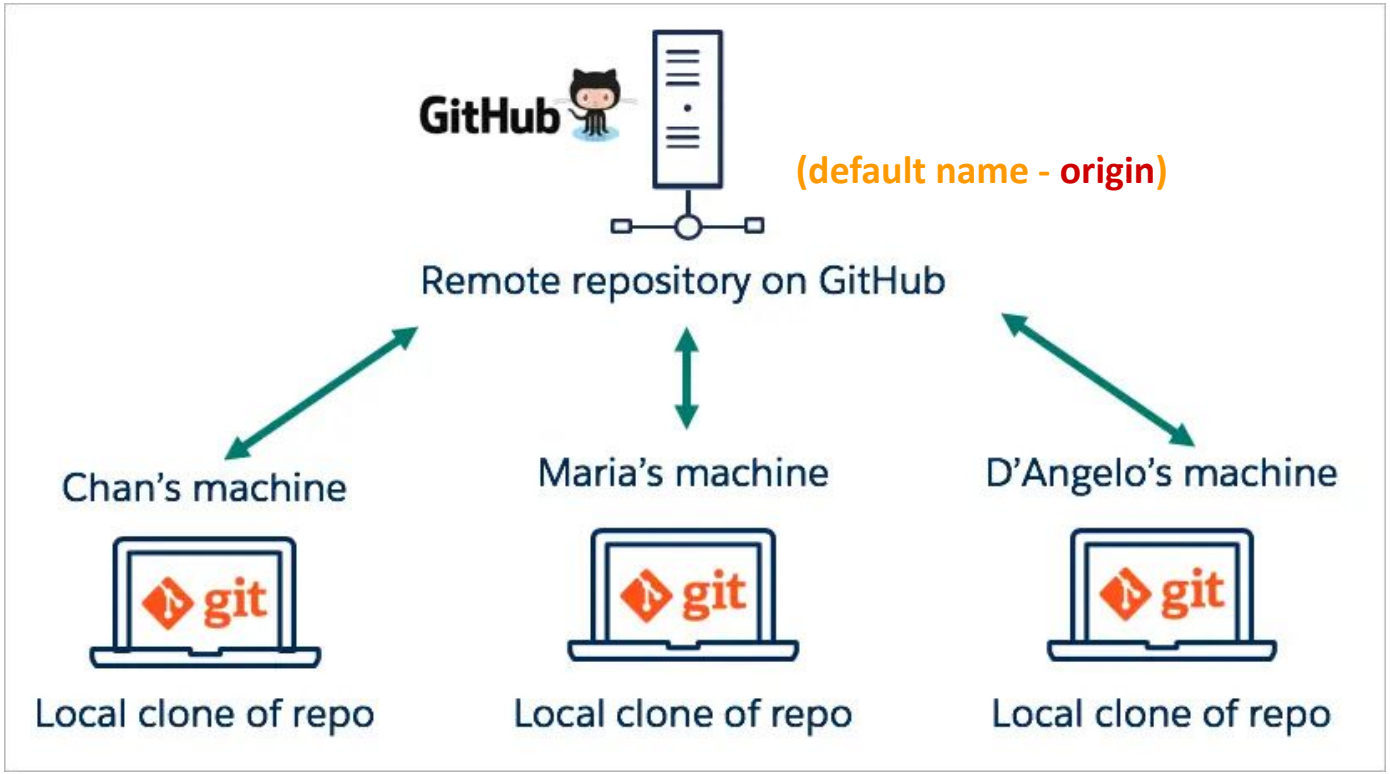
Stacks	Followers	Votes
132.1K	99.8K	10.1K

GitLab

+ Follow + I use this

Stacks	Followers	Votes
30.5K	23.4K	2.3K

Github - Remote Repository



Github - Remote Repository

- Act of copying a repository from remote server to your local machine is called **cloning**
- Cloning allows team to work together
- Downloading commits from others : **fetch, merge**
- Downloading commits from others : **pull (fetch + merge)**
- Uploading your commits (local changes) to remote : **push**

Connecting your local with remote

- connect to remote repo

```
git remote add origin Repo address
```

```
git remote -v
```

origin = alias for your repo address

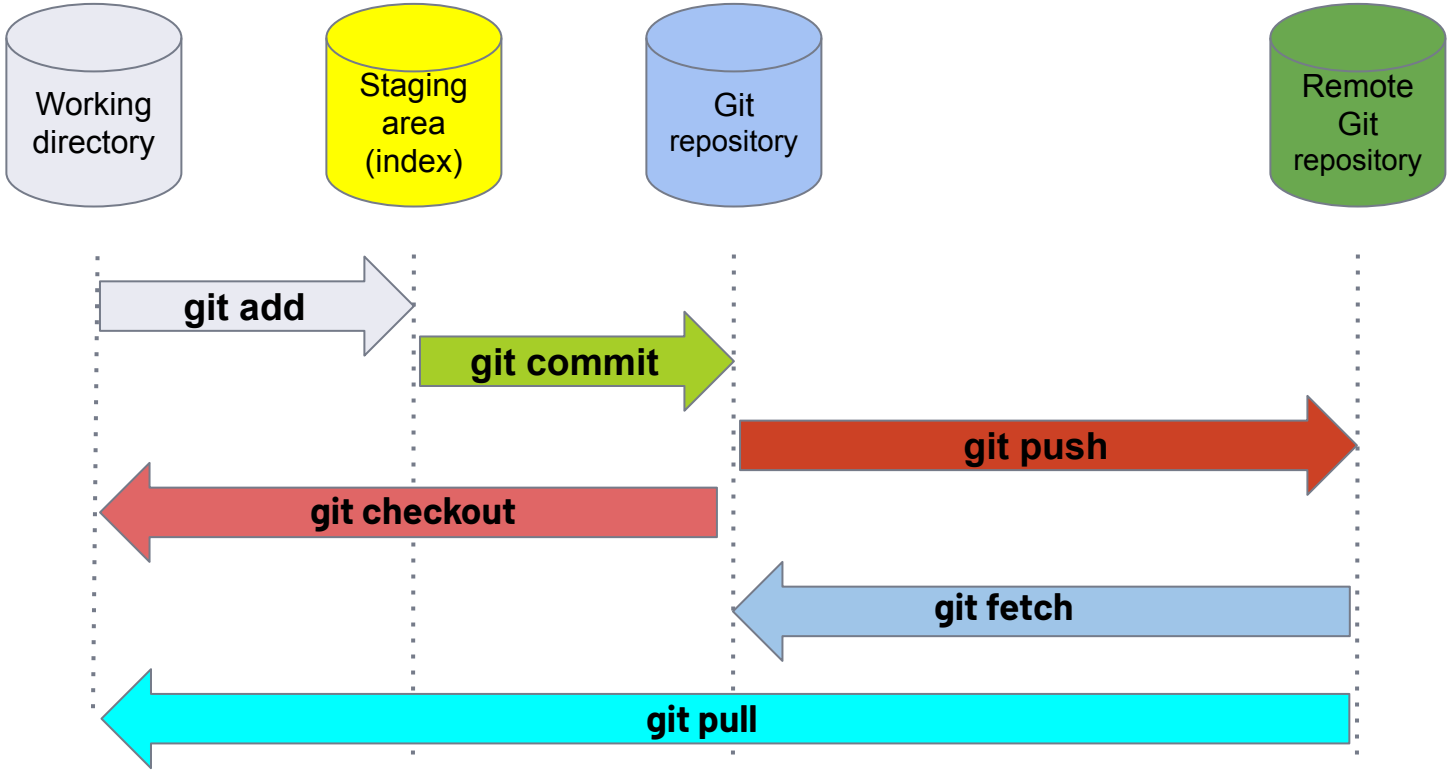
- first push

```
git push -u origin master
```

- remove remote origin

```
git remote rm origin
```

Github - Remote Repository



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Pull Request

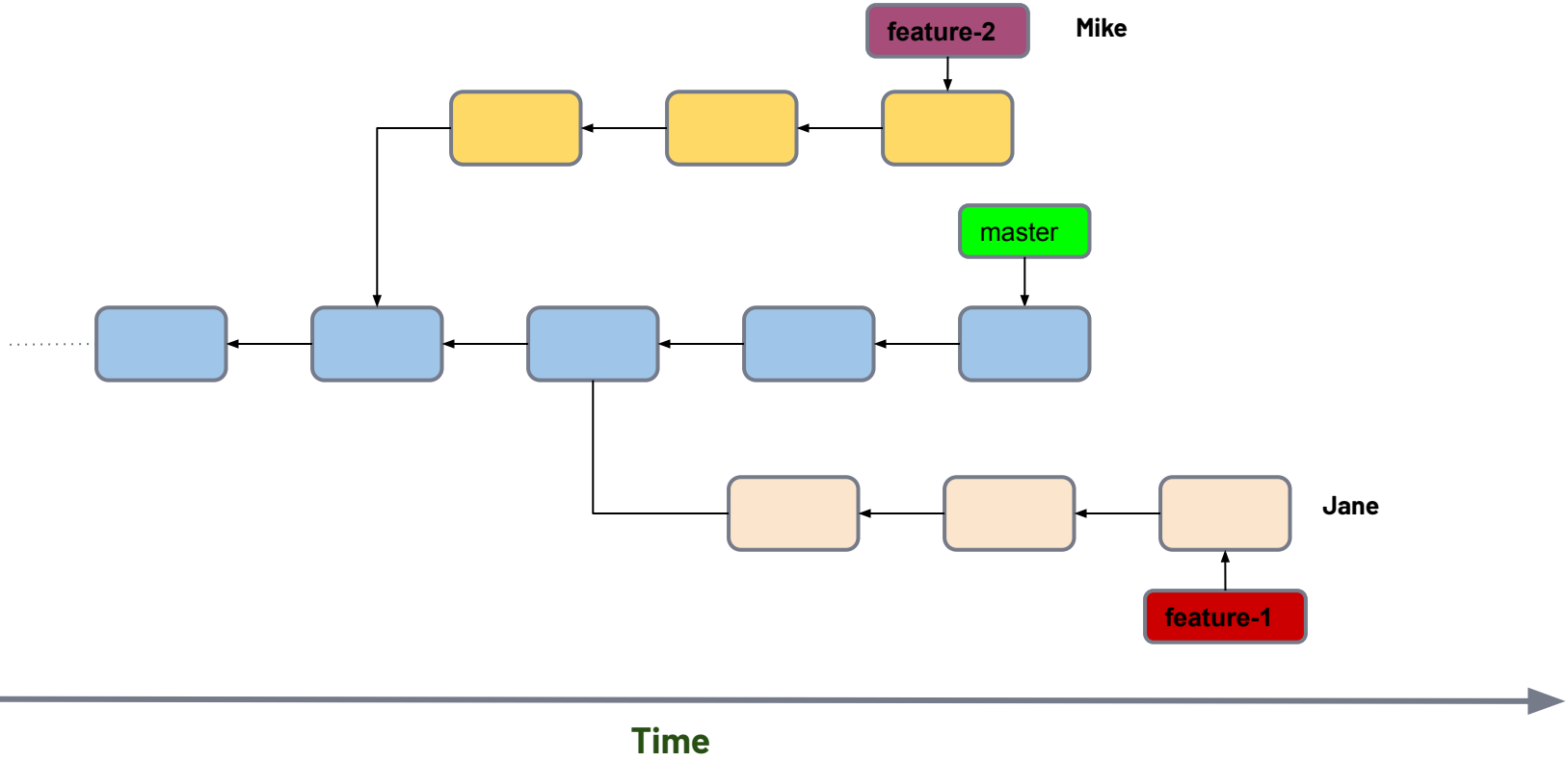
Github - Pull Request

- Github’s feature not Git’s feature
- It allows you to contribute to other projects

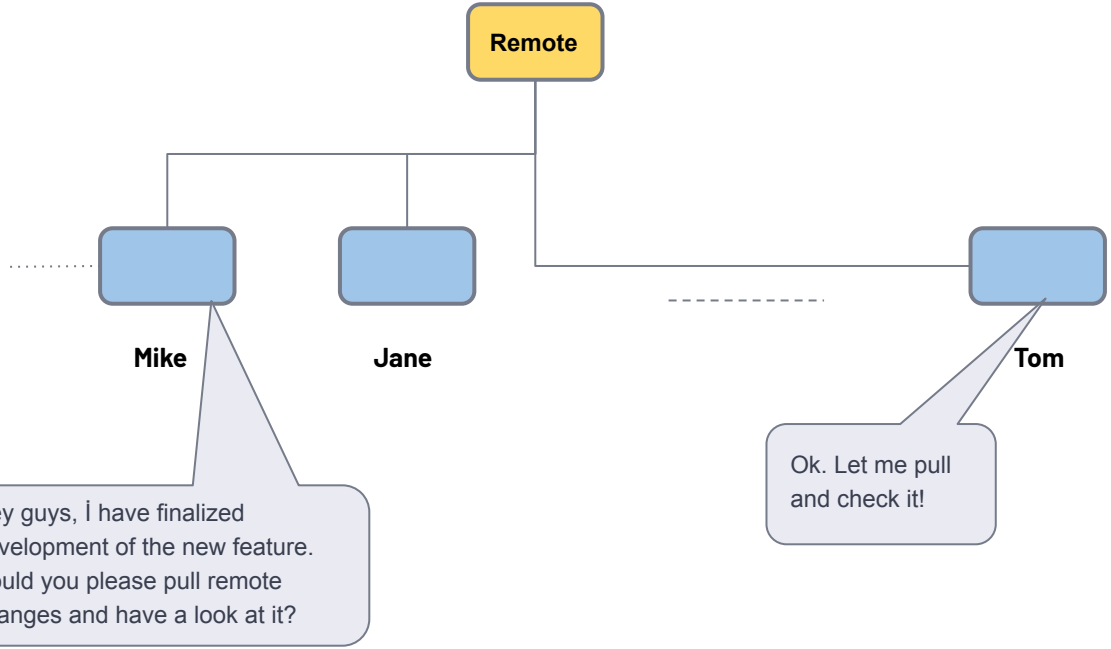
Github - Pull Request

- **Pull Requests (PR)** let you tell others about changes you've pushed to a branch in a repository on GitHub
- You create a pull request to propose and collaborate on changes to a repository. These changes are proposed in a branch, which ensures that the master branch only contains finished and approved work.

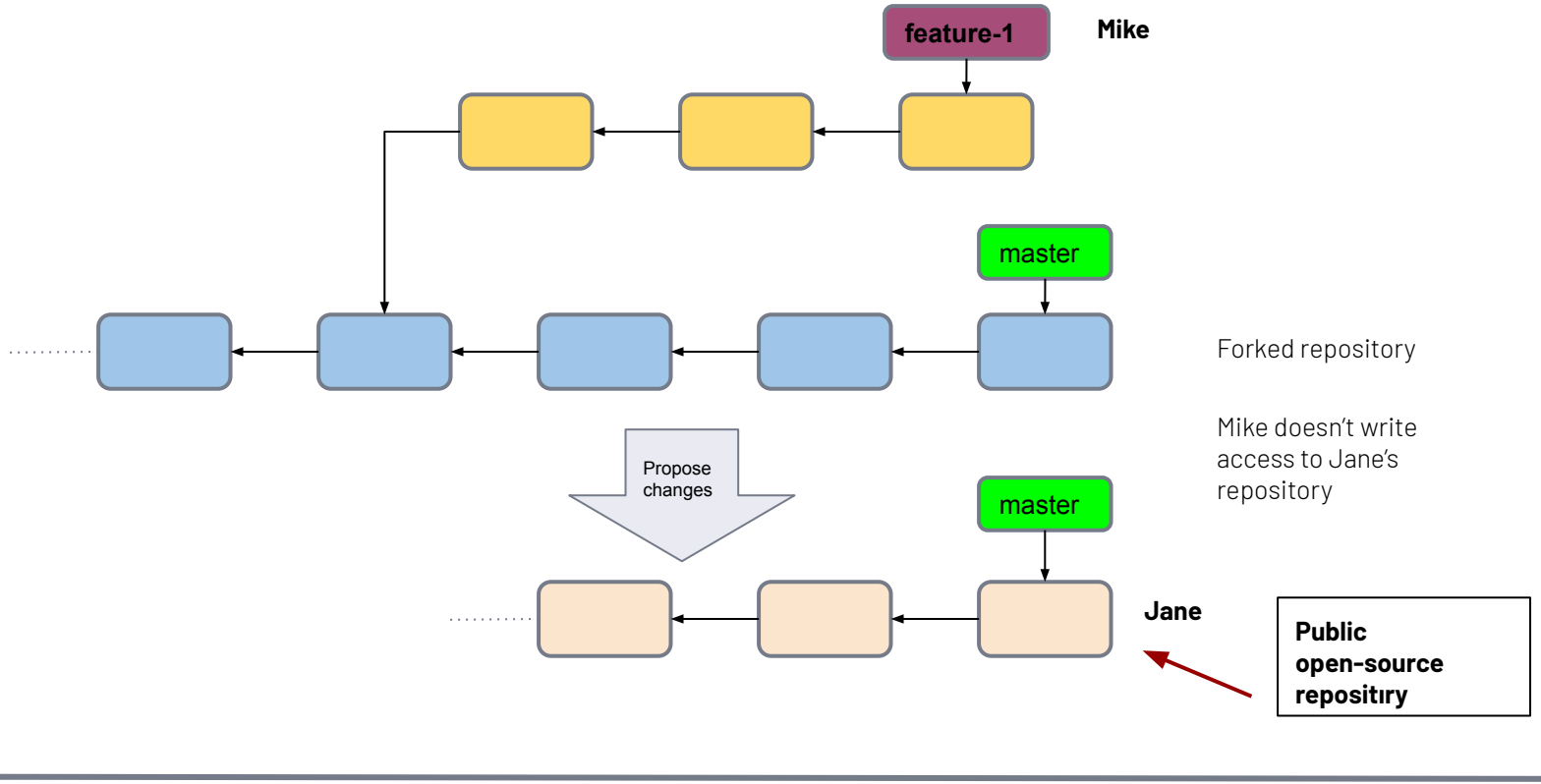
How collaborators communicate?



Why “pull” request?



How collaborators communicate?



Github - Pull Request process

Time

Mike

Creates new local branch — **feature-1**

Commits changes to feature-1 locally — **commit**

Mike is happy with changes and feature works as expected

Pushes changes to remote by creating remote feature-1 branch — **feature-1**

Creates pull request to start review process by other collaborators

Mike requests Jane to review newly opened pull request

Jane

Jane starts review of the Mike's pull request

Optionally **pulls** updates and checkouts **feature-1** branch to verify how new feature works.

Add some comments for specific blocks of code and asks for changes — **comments**

Github - Pull Request process

Time

Mike

Mike is notified about comments and requested changes

Makes additional changes requested by Jane

commit

Pushes changes to remote

Jane

Jane is notified about new commits

Happy with new changes and **approves** pull request

Mike

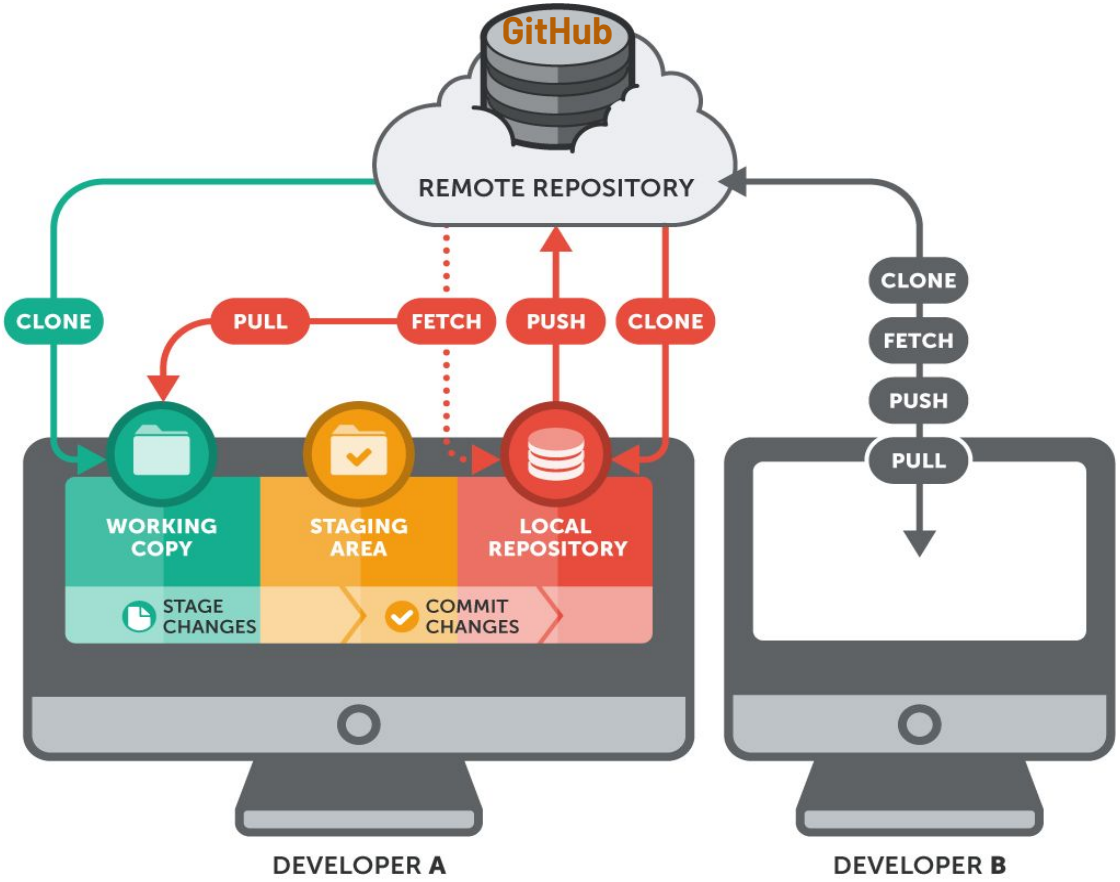
Merges changes from the feature-1 branch to the main **master** or **release** branch

Closes pull request and deletes feature-1 branch

New feature implemented !

Summary

Git Basics


GitHub
REMOTE REPOSITORY
CLONE
PULL
FETCH
PUSH
CLONE
CLONE
FETCH
PUSH
PULL
WORKING COPY
STAGING AREA
LOCAL REPOSITORY
STAGE CHANGES
COMMIT CHANGES
DEVELOPER A
DEVELOPER B

Git Basics - Common Terms

What is the origin in Git?
In Git, "origin" is a shorthand name for the remote repository that a project was originally cloned from. More precisely, it is used instead of that original repository URL - and thereby makes referencing much easier.

What is a Fork in Git?
A fork is a copy of a repository that you manage. Forks let you make changes to a project without affecting the original repository. You can fetch updates from or submit changes to the original repository with pull requests.A fork is nothing but a duplicate copy of someone else's project, whereas a branch is just a version of a repository.

Git Fetch - is the command that tells the local repository that there are changes available in the remote repository without bringing the changes into the local repository.

Git Pull - on the other hand brings the copy of the remote directory changes into the local repository.

THANKS!

Any questions?

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