Tooling for Technical Documentation II

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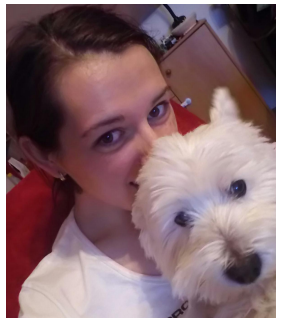

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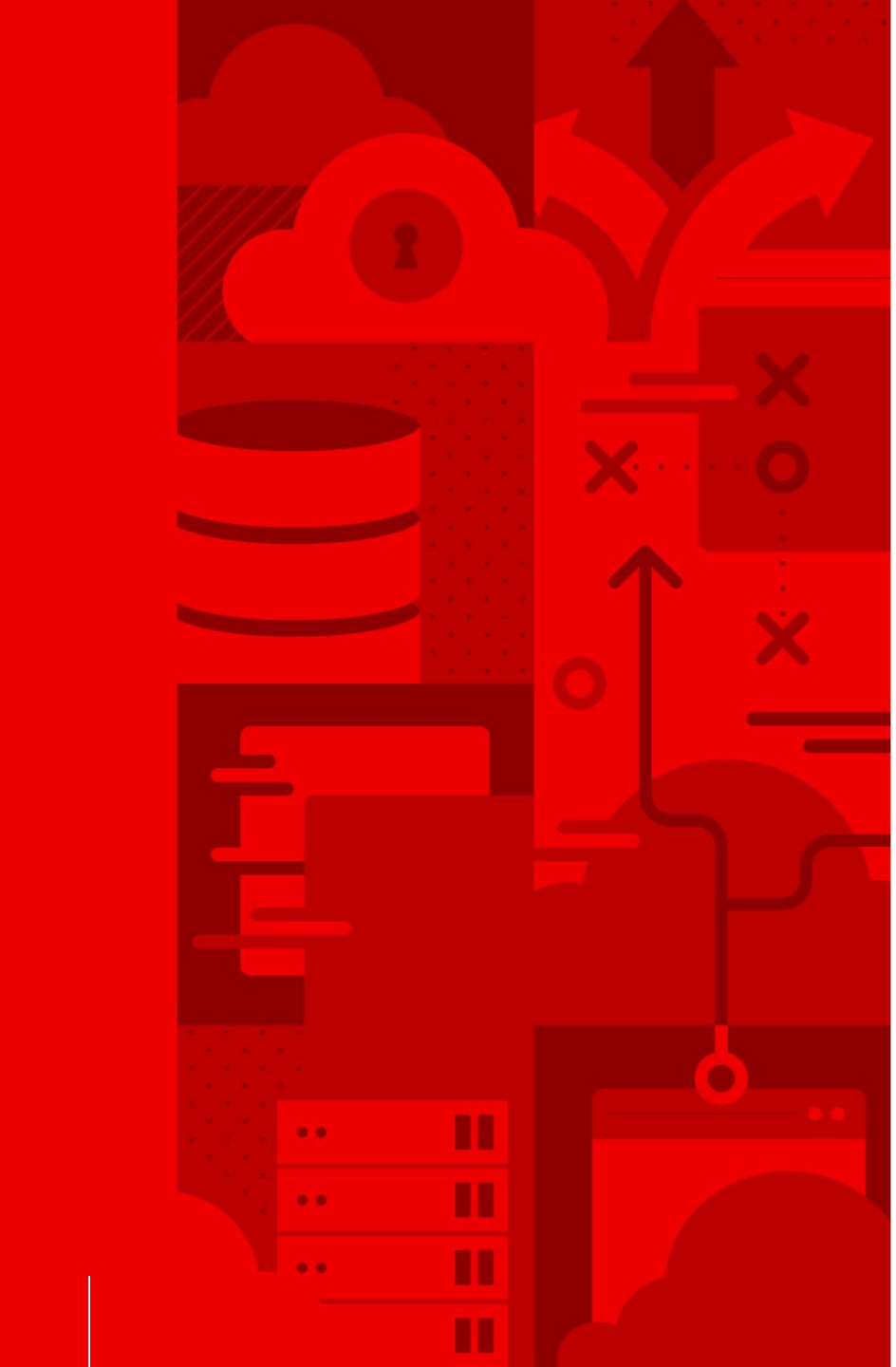
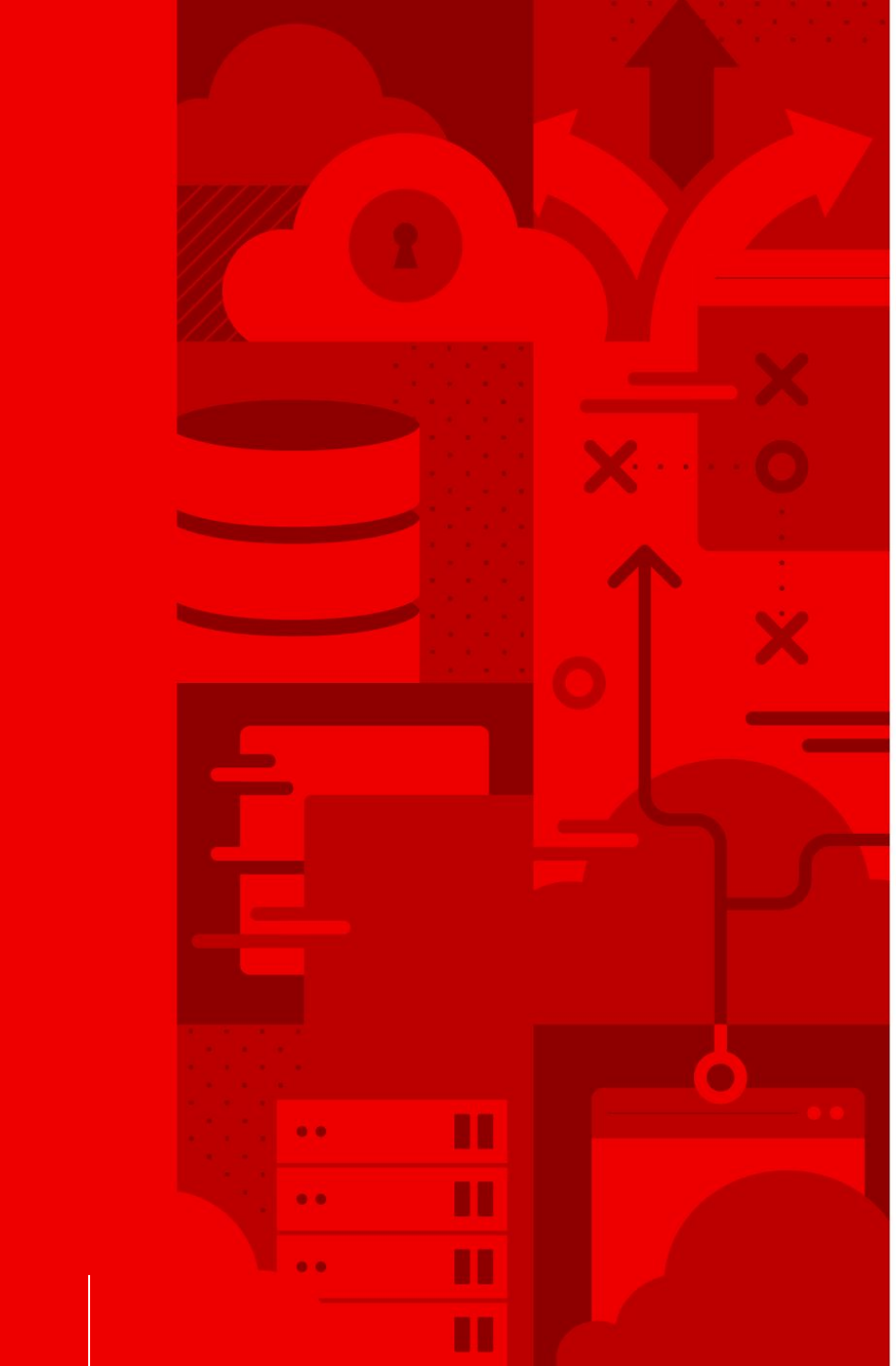


Markdown exercise review

What we'll discuss today

- Version control system
- What is GIT
- GIT Glossary
- GIT Basic Workflow
- Demo
- Exercises
- Additional resources
- Questions



Version Control System

What is version control?

Version control system is a system for tracking and managing changes to the source code

Three main capabilities

- Reversibility
- Concurrency
- Annotation

Benefits of using version control?

Project history

VCS maintains a detailed history of changes, tracking who made what changes, when, and why

Collaboration and parallel development

Multiple team members can work on different parts of the documentation concurrently

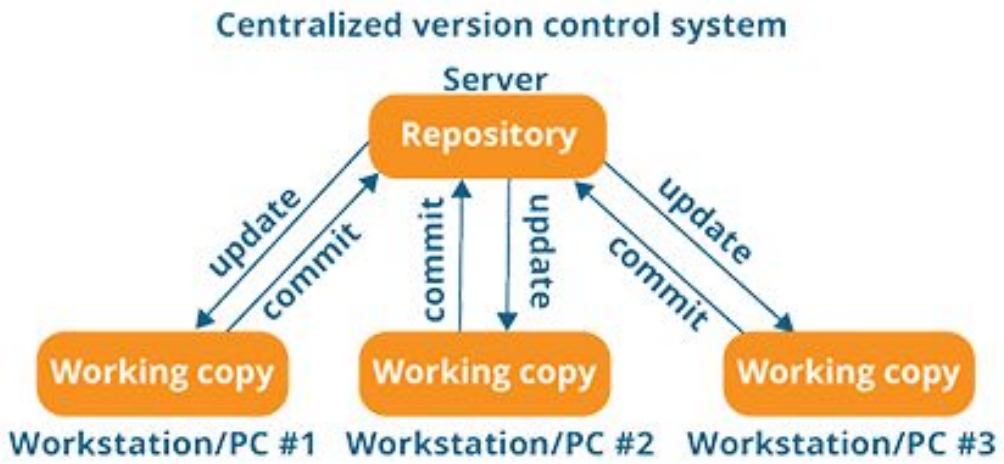
Rollback and revert

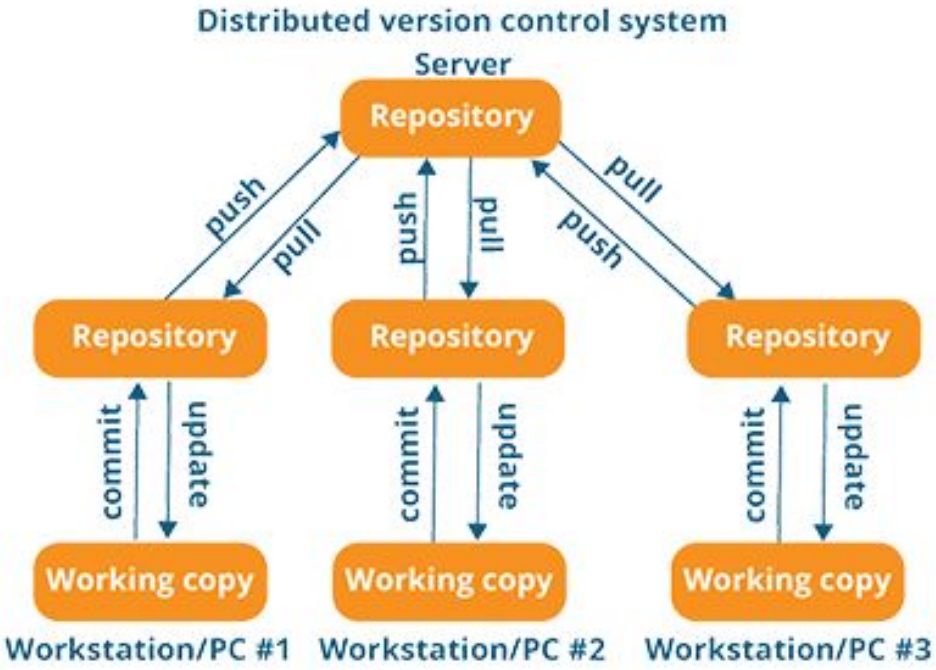
In the case of errors or undesired changes, you can revert back to specific version of the document

Branching and merging

Create branches to work on experimental features without affecting the main documentation

Centralized & Distributed Version Control System

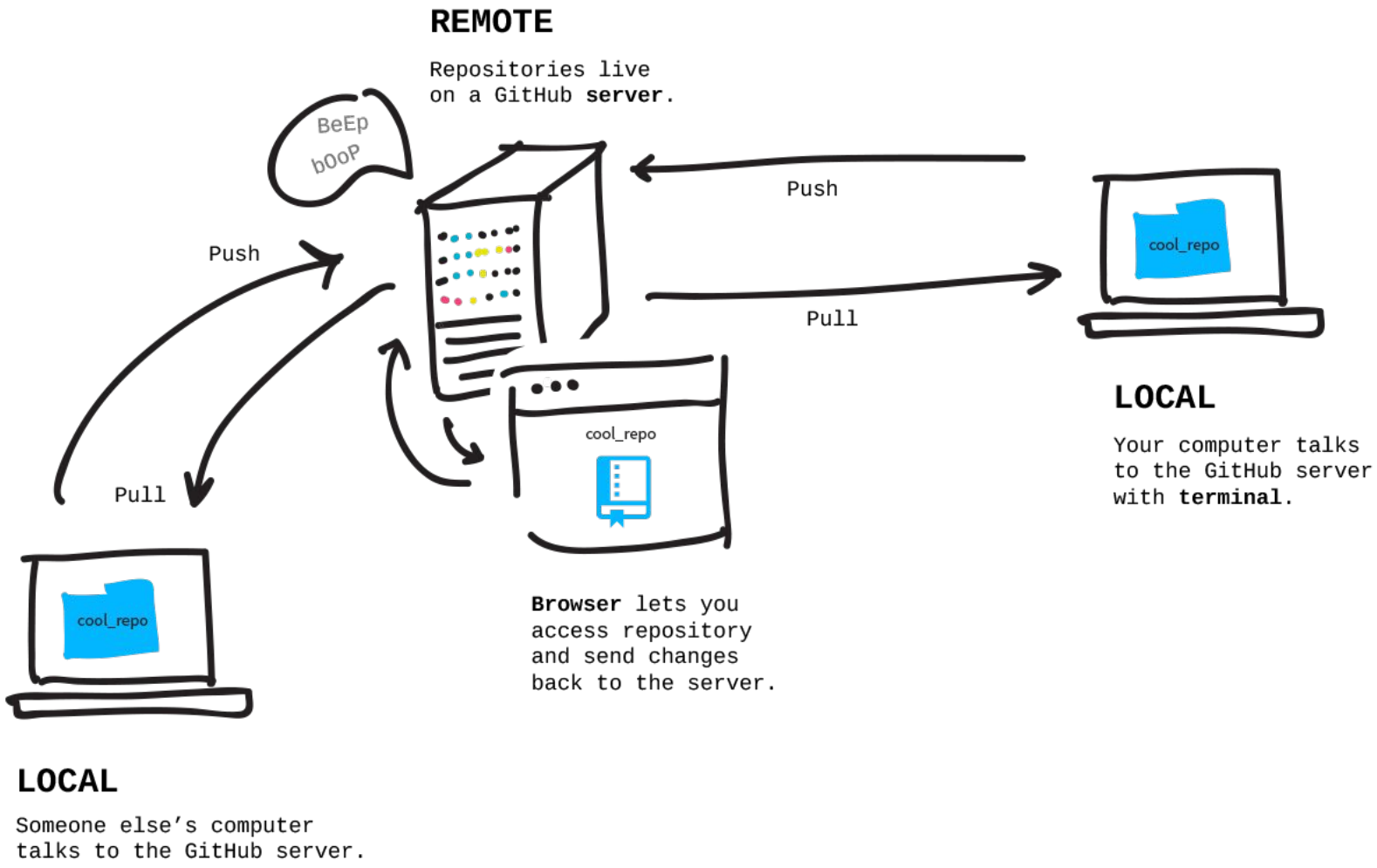




Source https://www.edureka.co/blog/what-is-git/

What is Git?

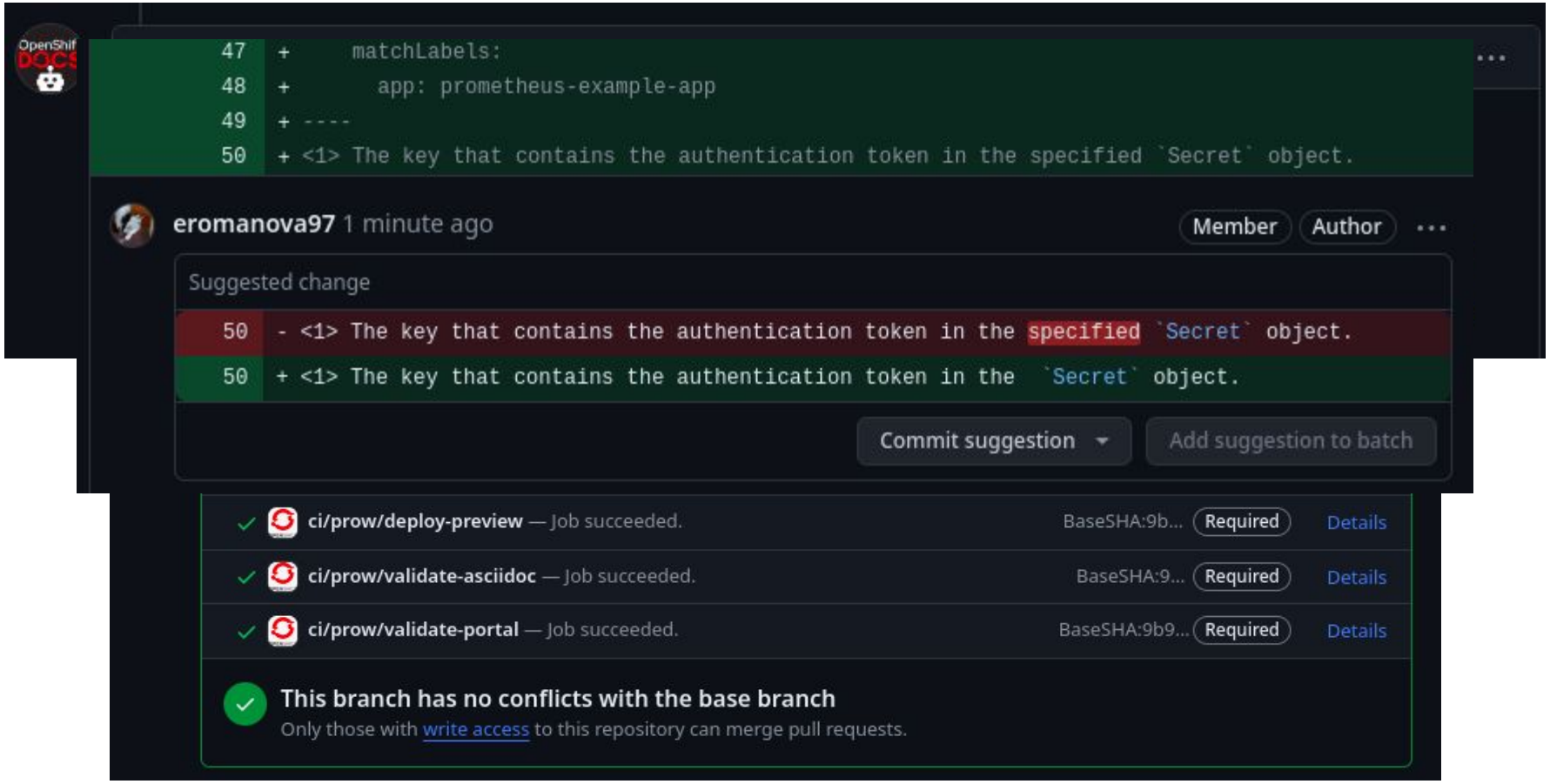
Git is a version control software application



Source https://www.freecodecamp.org/news/the-beginners-guide-to-git-github/

Git forges

An online platform for hosting Git repositories that provides additional features such as as issue tracking, code review, continuous integration, and collaboration tools.



Source https://www.freecodecamp.org/news/the-beginners-guide-to-git-github/

Setting up Git

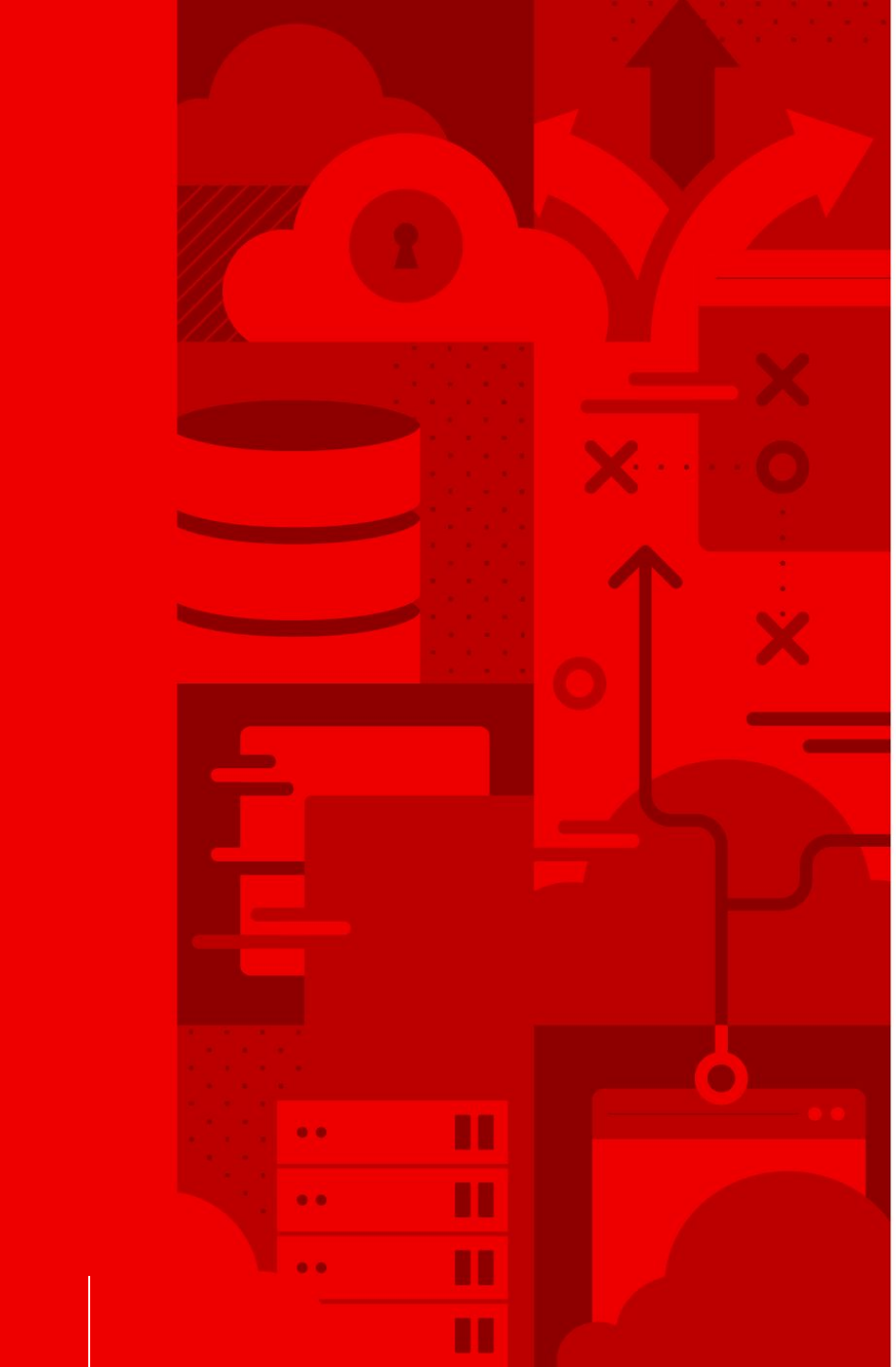
Configure git with config command or directly edit the **.gitconfig** file

$ git config --global user.name “YOUR_NAME”
$ git config --global user.email NAME@example.com

Need help?

$ man git

https://git-scm.com/



Git Glossary

Git Glossary

- Repositories
- Branches
- Git Operations
  - Git Push and Git Pull
  - Git Clone and Git Fork
  - Git Merge and Git Rebase

Image Courtesy Infilect

Repositories

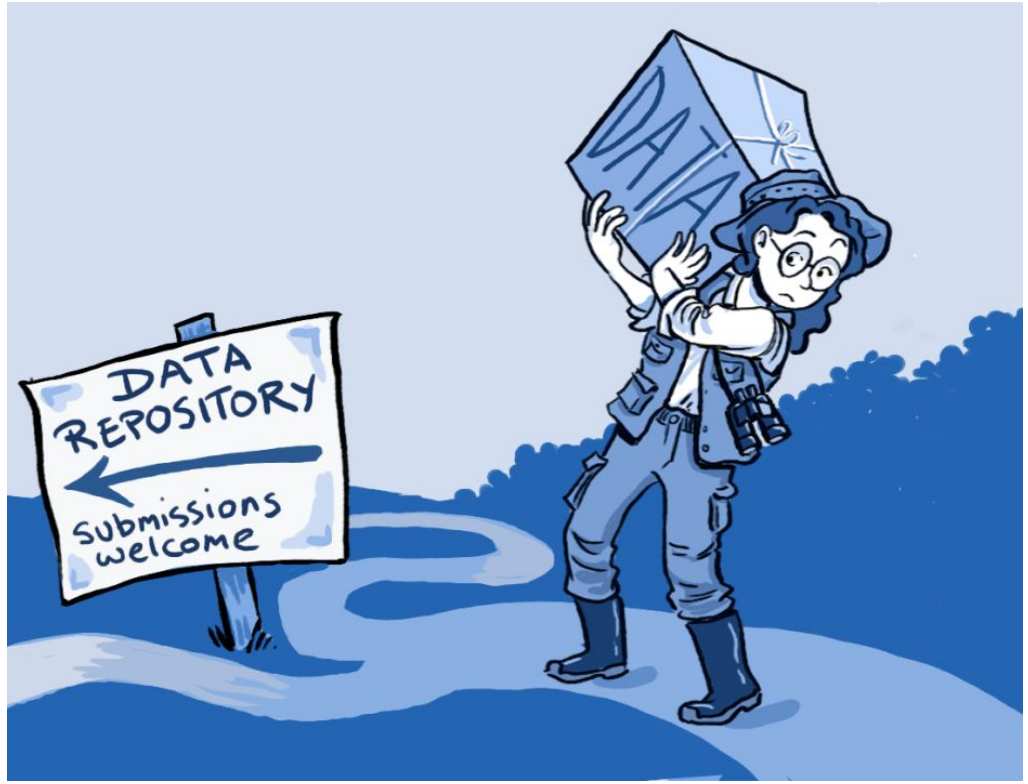


Image courtesy https://www.linkedin.com/pulse/what-repository-parsa-panahpoor/

Git repositories

Local

- Located on your computer
- You work locally

Remote

- Located on a server (GitHub, GitLab, etc.)
- Source of truth
- Fetching

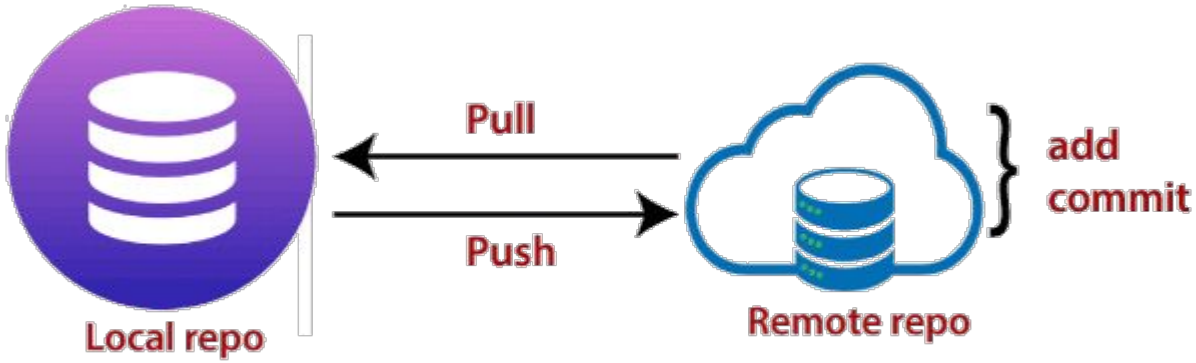


Image courtesy https://www.javatpoint.com/git-push

Branches

Branches

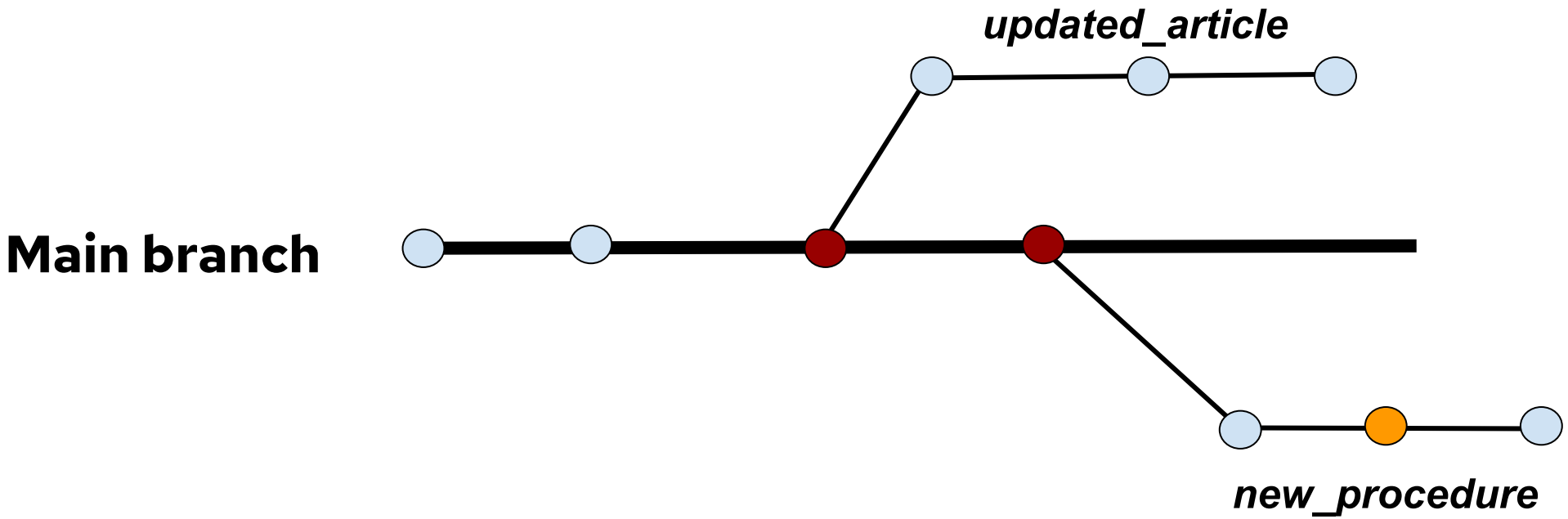
What?

- An independent line of commits in chronological order to the project
- “Alternate history”
- **Topic branch** or **feature branch** is a lightweight branch for a specific purpose (e.g. new feature or bug fix) which could take some time

Why?

- Work in parallel
- Keep main branch free from questionable code
- Experiment easily

Branch workflow

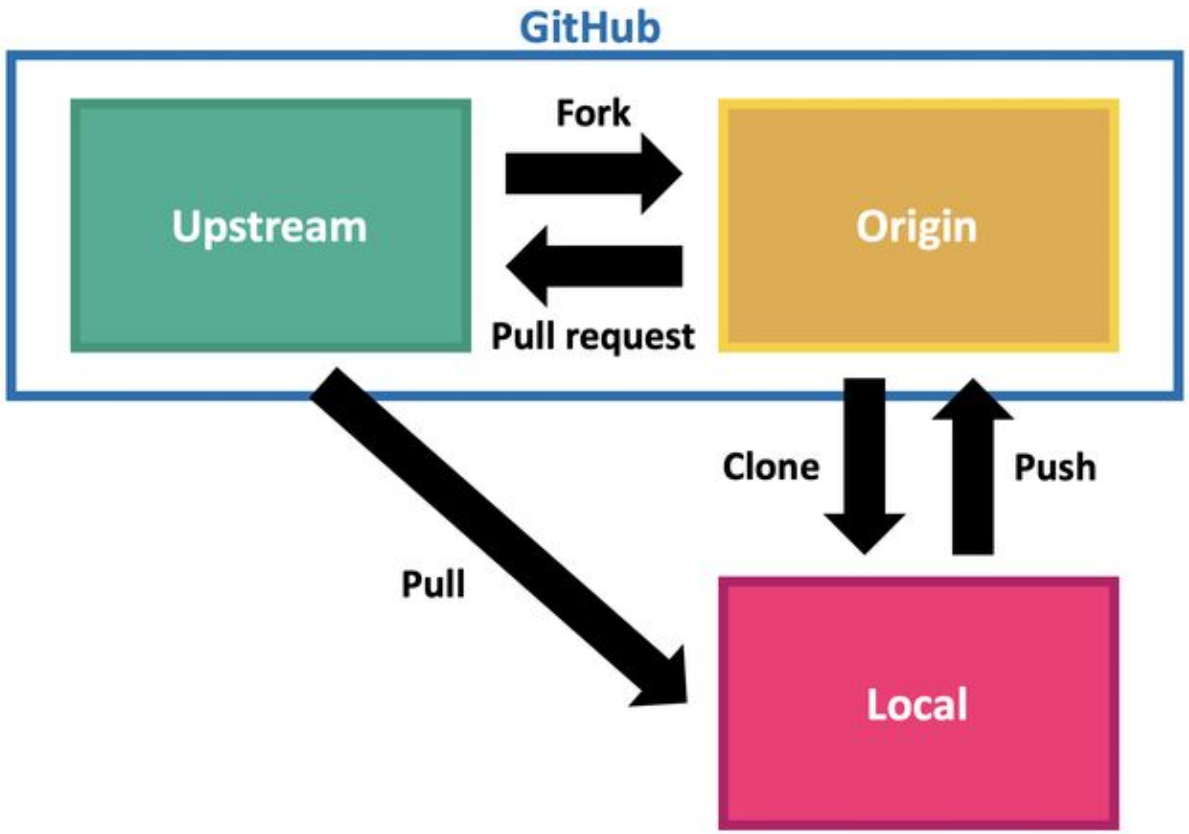


Git operations

Git workflow

Fork
A personal copy of the repository

Clone
A local copy of the repository/fork



Simplified Git workflow

Make changes -> stage changes -> commit changes

> Push the changes to the remote repository

Git workflow

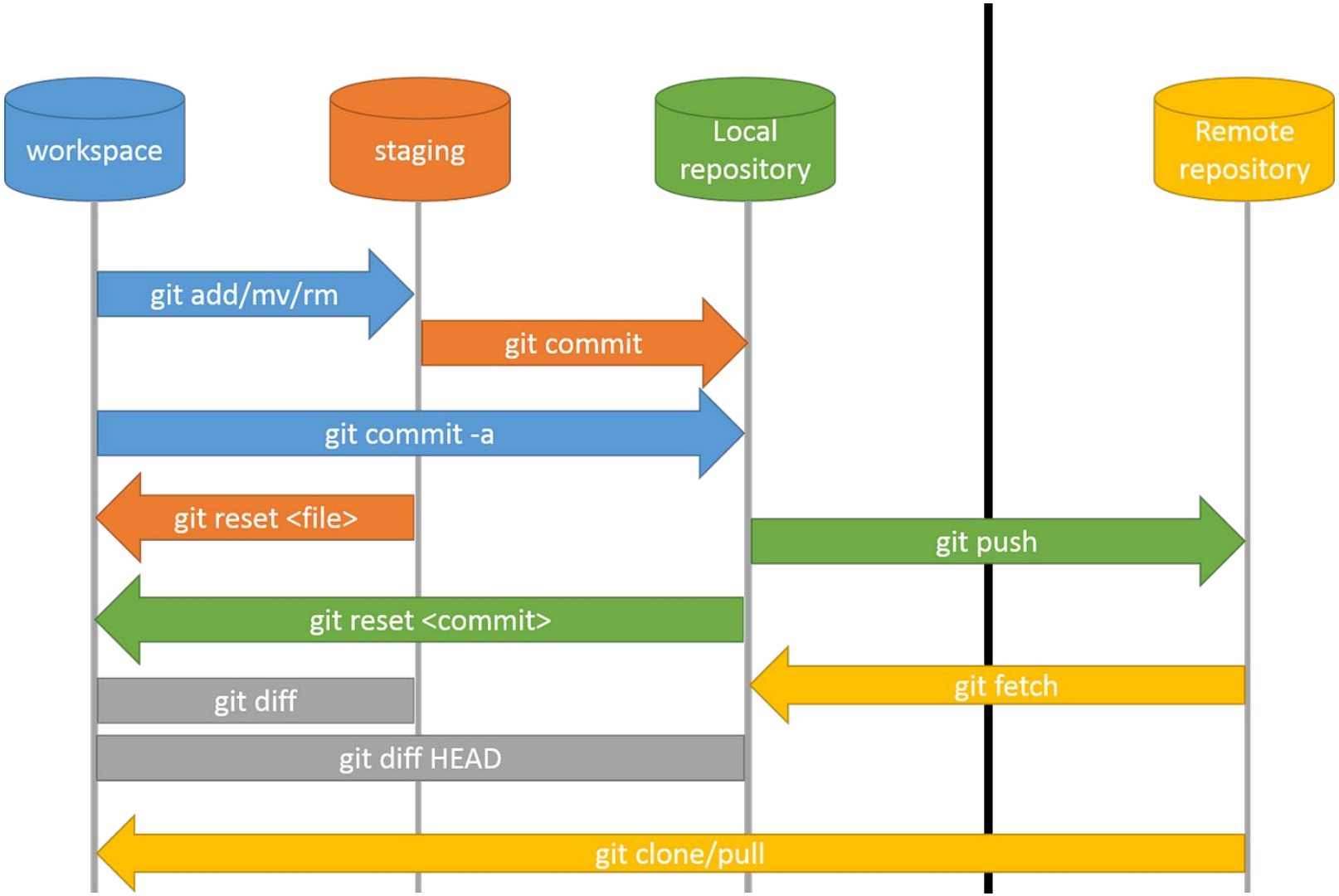


Image courtesy
https://qavalidation.com/2018/07/git-push-pull-commands-local-repository-to-github.html/#google_vignette

GitHub - Create SSH key?

Generating SSH keys - Windows

Verify if **OpenSSH Client** is Installed

1. Open the **Settings** panel, then click **Apps**.
2. Under the ***Apps & features*** heading, click **Optional Features**.
3. Scroll down the list to see if **OpenSSH Client** is listed and installed.

Generating SSH keys - Windows

1. Open **Git Bash**> **Run as administrator**.
2. In the command prompt, run the following command:

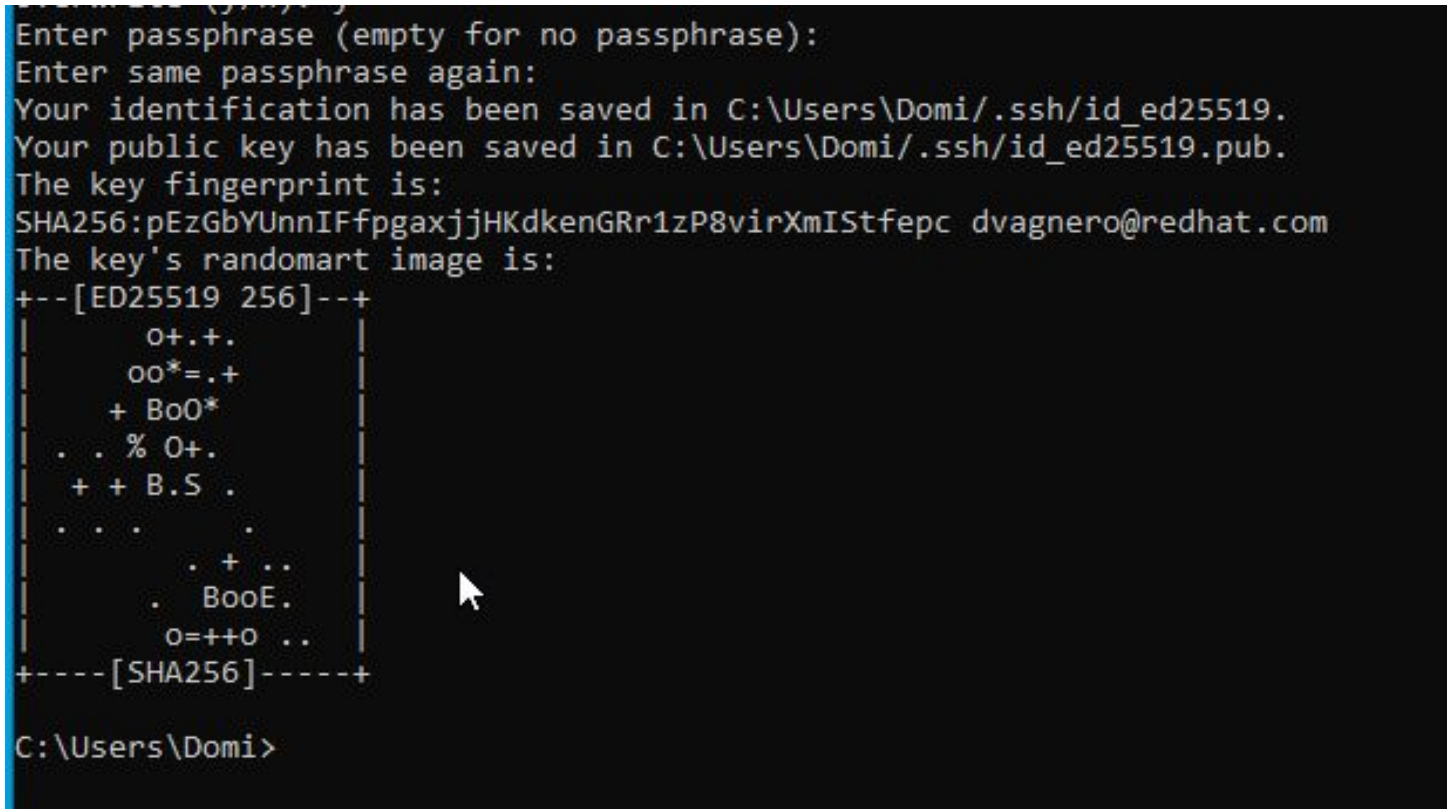
   ssh-keygen -t ed25519 -C "your-email@example.com"

This creates a new SSH key, using your email as a label.

3. When you're prompted to "Enter a file in which to save the key", you can press **Enter** to accept the default file location (**C:\Users\your_username/.ssh/id_ed25519.pub**)
4. When you're prompted to enter a passphrase, you can press **Enter** to skip as well.

The system will generate the key pair, and display the key fingerprint and a randomart image.

Generating SSH keys - Windows



Add the SSH public key to your account on GitHub

1. Copy the SSH public key to your clipboard.
    a. Open **id_ed25519.pub** in editor and do **CTRL + A** and **CTRL + C**.
2. Navigate to your profile on Github and open **Settings**.
3. In the **Access** section of the sidebar, click **SSH and GPG keys**.
4. In the **Title field**, add a descriptive label for the new key. For example, if you're using a personal laptop, you might call this key **Personal laptop**.
5. In the **Key** field, paste your public key.
6. Click **Add SSH key**.

Git Workflow - live demo

Task

- Fork the upstream repository https://github.com/rh-writers/BUT-technical-writing-course
- Open Git Bash and go to the folder where you want to clone your repository.
- Clone your forked repository over ssh.
- Go to your newly created **BUT-technical-writing-course** repository.
- List the current remote repositories:

  $ git remote -v

- Add the upstream repository as a remote:

  $ git remote add upstream <SSH>

- Verify the new remote was added:

  $ git remote -v

Task - continue

- Create a branch in your local repository.
- Inside the **`exercises`** directory, create a subdirectory named **`firstname-lastname`**.
- Add your assignment, the `.md` file, and any image files in your subdirectory.
- Stage the changes.
- Commit the change.
- Push the changes to your fork and create a pull request against the repository.
- Tag **@domiborges** and **@eromanova97** to review and merge your contribution.

IMPORTANT: Ensure that you are on main branch when you are creating you new topic branch.

Fixing mistakes

Scenario: You've accidentally staged files that you didn't intend to include in your commit.

Use **git reset** to unstage the files without losing your changes.

$ git reset <filename>

TIP: Always use **git status** and **git diff** to review your changes before staging and committing them.

Fixing mistakes

Scenario: You've ve staged files directly on the **main** branch instead of creating a topic branch.

Unstage the files **$ git reset <filename>**

Stash your changes **$ git stash**

Create and switch to the correct branch **$ git checkout -b <topic-branch>**

And apply the stashed changes to the correct branch **$ git stash pop**

Fixing mistakes

Scenario: You have ma instead of creating a topic branch.

① Make sure you have `main` checked out:

```
git checkout main
```

```
dvagnero@fedora:~/git_repos/BUT-technical-writing-course$ git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
dvagnero@fedora:~/git_repos/BUT-technical-writing-course$
```

Always start with **$ git status**

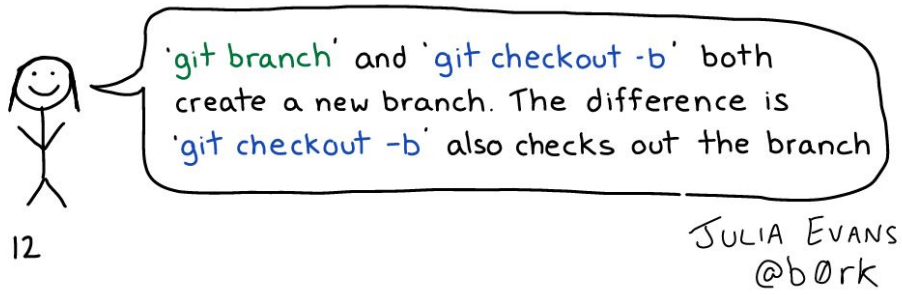
```
git status
```

careful!

```
git reset --hard HEAD~
```

④ Check out the new branch!

```
git checkout my-new-branch
```



Fixing mistakes

Scenario: You've committed a file with a typo in its name **dminikaborges.md.**

Rename the file using git **mv <FileName> <NewFileName>**:

$ git mv dminikaborges.md dominikaborges.md

Amend the previous commit to include the filename update:

$ git commit --amend --no-edit

If the commit has already been pushed to a remote repository, force-push the changes:

git push origin your-branch-name --force

Warning: Force pushing can overwrite the commit history on the remote repository, potentially causing issues for other collaborators.

Fixing mistakes

Scenario: Oops, unwanted commit! You've made a commit that you don't want.

```
dvagnero@fedora:~/git_repos/BUT-technical-writing-course$ git log
commit f29add87007f98cc4476c95a07124afceddf36fb (HEAD -> text)
Author: Dominika Borges <dvagnero@redhat.com>
Date:   Thu May 23 09:23:53 2024 +0200

    Oops, unwanted commit

commit 06030726168d33f2caacb4f9e561c67c343fdce4 (upstream/main, origin/main, origin/HEAD, main)
Author: domiborges <dvagnero@redhat.com>
Date:   Wed May 22 13:38:20 2024 +0200

    Update README.md
```

To remove the commit and keep the working directory changes:
$ git reset --soft HEAD~1

Fixing mistakes

Scenario: Oops, unwanted commit! You've made a commit that you don't want.

```
dvagnero@fedora:~/git_repos/BUT-technical-writing-course$ git log
commit f29add87007f98cc4476c95a07124afceddf36fb (HEAD -> text)
Author: Dominika Borges <dvagnero@redhat.com>
Date:   Thu May 23 09:23:53 2024 +0200

    Oops, unwanted commit

commit 06030726168d33f2caacb4f9e561c67c343fdce4 (upstream/main, origin/main, origin/HEAD, main)
Author: domiborges <dvagnero@redhat.com>
Date:   Wed May 22 13:38:20 2024 +0200

    Update README.md
```

To remove the commit and discard the changes:

$ git reset --hard HEAD~1

Fixing mistakes

Scenario: You have a topic branch with several small commits that logically belong together. You want to combine these commits into a single, more descriptive commit and send a pull request.

Review the commit history to identify the range of commits you want to squash: **$ git log**

Start with the interactive rebase: **$ git rebase -i HEAD~3**

Modify the commit list in the text editor. Choose which commits you want to squash.

Git will prompt you to write a combined commit message.

$ git log

Fixing mistakes

Example interactive rebase - squashing commit

```
commit d4065b941d9ddc77e74487df246a8c26507dc246 (HEAD -> rebase-example)
Author: Dominika Borges <dvagnero@redhat.com>
Date:   Thu May 23 13:52:29 2024 +0200
# This is a combination of 2 commits
commit 27193a3f752e0fca5b7e8705b811f212f0fbf4e0 (HEAD -> rebase-example)
Author: Dominika Borges <dvagnero@redhat.com>
Date:   Thu May 23 13:51:23 2024 +0200

    add materials for git lesson

    add slides for git lesson

    add exercise for git lesson

    add homework for git lesson

    add slides for
```

Git rebase

Rewrite commit history, adjust the order of commits, resolve conflicts, and more.

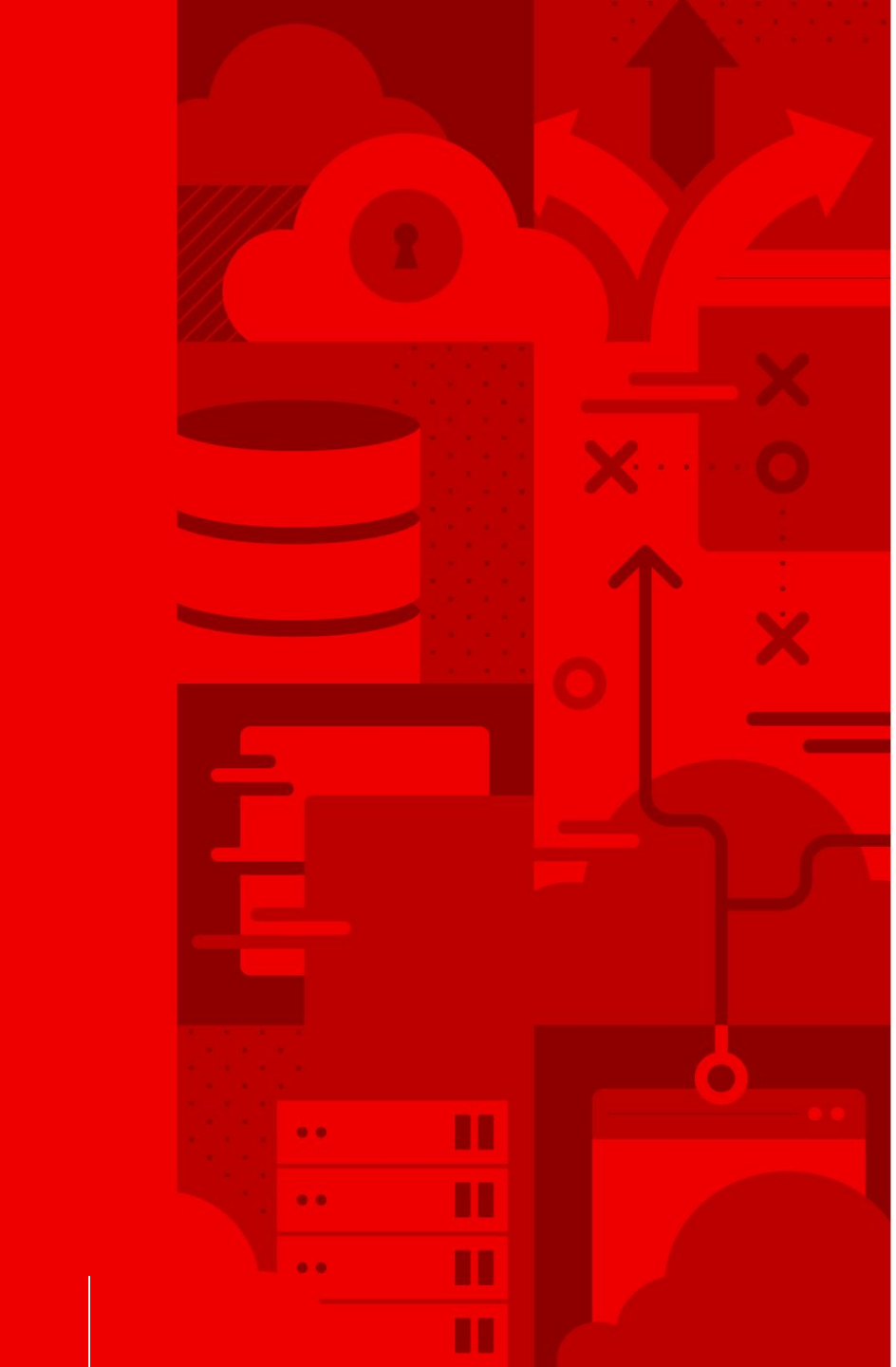
- Before merging or pushing your changes, rebase your topic branch onto the main branch to incorporate the latest changes.
- Remove unwanted or incorrect commits from your branch.
- Combine multiple small or related commits into a single commit. Split a large commit into smaller, logical commits.
- Revisit previous commits and edit them.

Best practices for Git

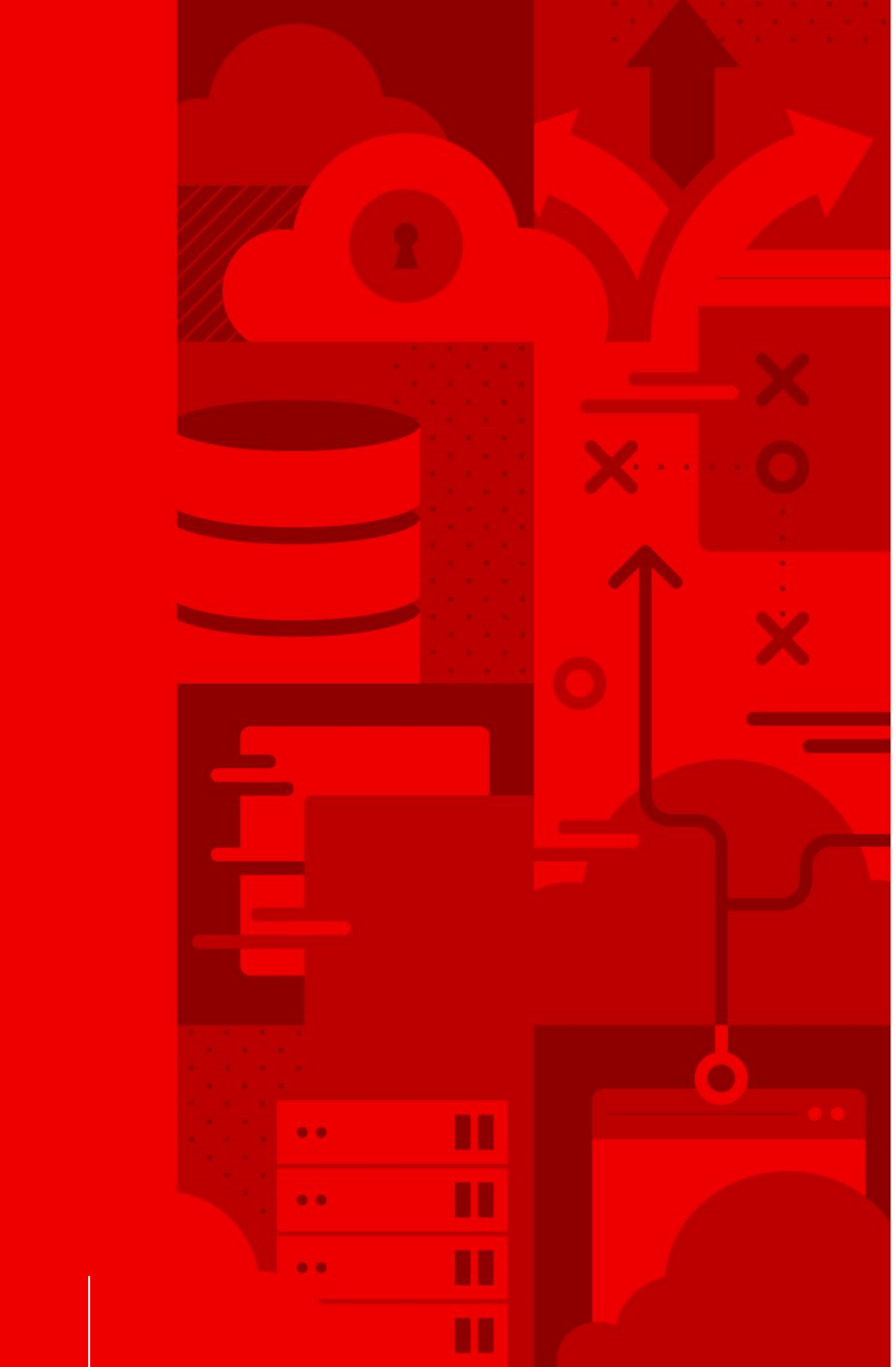
- Follow the best practices and guidelines for contributing to a given project.
- Use hyphens as separators along with task details while naming your branch.
- Write meaningful commit message.
- Write an useful description for your PR.
- Use .gitignore file to ignore any unnecessary files.
- Rebase your local commits before your pushing changes.
- Build documentation locally and review files before inviting SMEs and reviewers.
- Push changes as soon as your file is ready instead of keeping it in a local machine.

Additional resources

- https://about.gitlab.com/topics/version-control/version-control-best-practices/
- https://learngitbranching.js.org/
- https://git-scm.com/doc
- https://docs.github.com/en/get-started/quickstart/hello-world
- https://www.atlassian.com/git
- https://www.w3schools.com/git/
- https://git-scm.com/docs/gitignore
- https://www.theodinproject.com/lessons/foundations-commit-messages



Q&A



Homework