<epam>

Introduction to Git and GitHub

MARCH 2024

Contents

Git (Version Control System - VCS)

Imagine you and your friends are working together on a big group project, like creating a video game or writing a story.

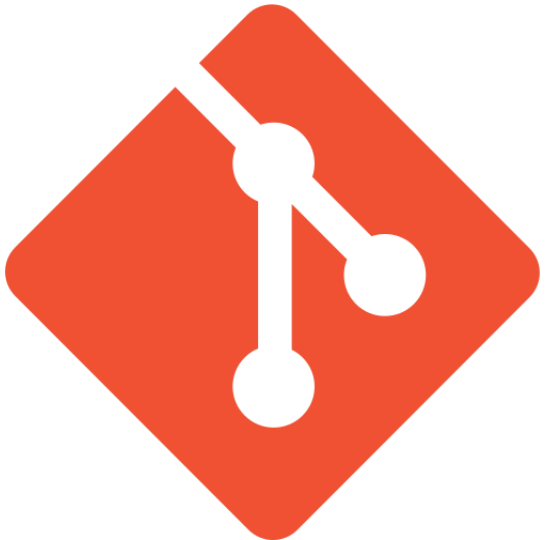
Now, let's say you're all working on different parts of the project at the same time.

How do you keep track of everyone's changes and make sure you're all working on the same version?

That's where Git comes in!

Git (Version Control System - VCS)

Git is like a magical tool that helps you and your friends work together on projects without stepping on each other's toes



Git (Installation)

1. Access https://git-scm.com/downloads and download accordingly to your Operational System (Windows, Linux, Mac)
2. Run the file downloaded
3. Click on the NEXT buttons till find the INSTALL button
4. Click on the INSTALL button and wait
5. After the installation is finished, check if is installed:
   - Open a Command line (terminal) application
   - Type: `git –version` and then hit the enter button

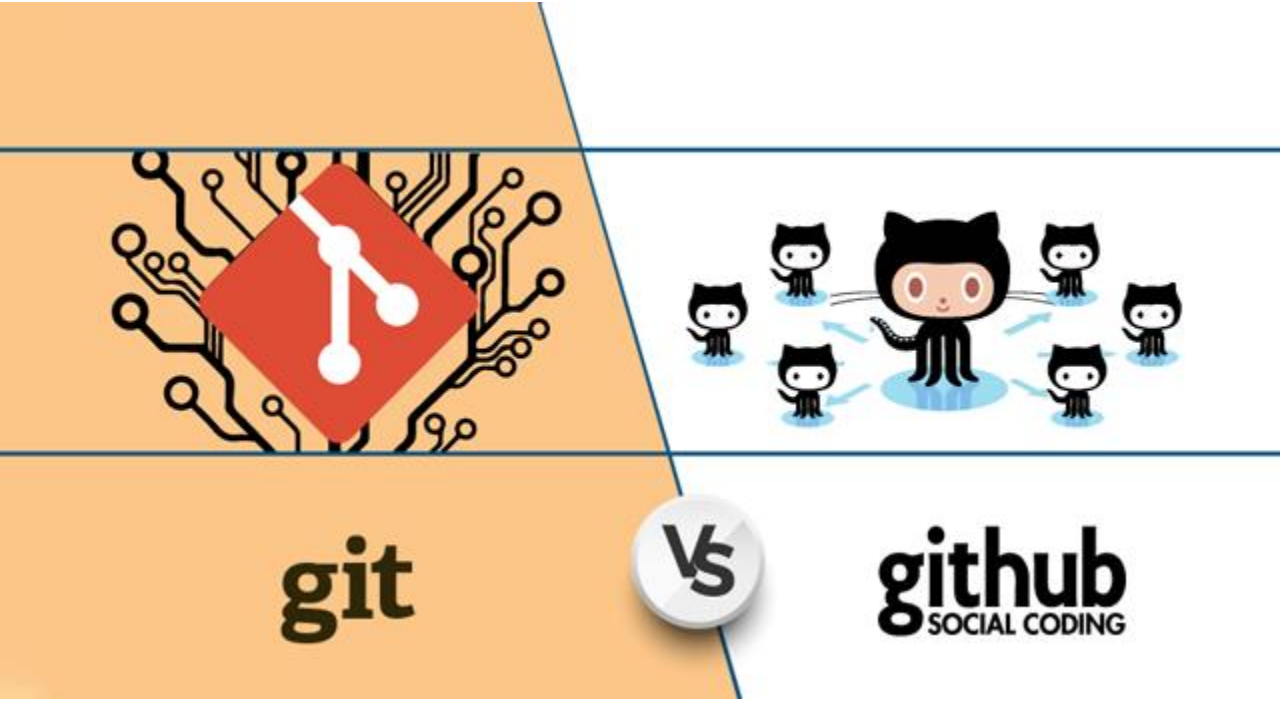
GitHub (Hosting Platform)

Imagine you've written a fantastic story with your friends using Git, but now you want to share it with the world or maybe even get feedback from other people.

That's where GitHub comes in!

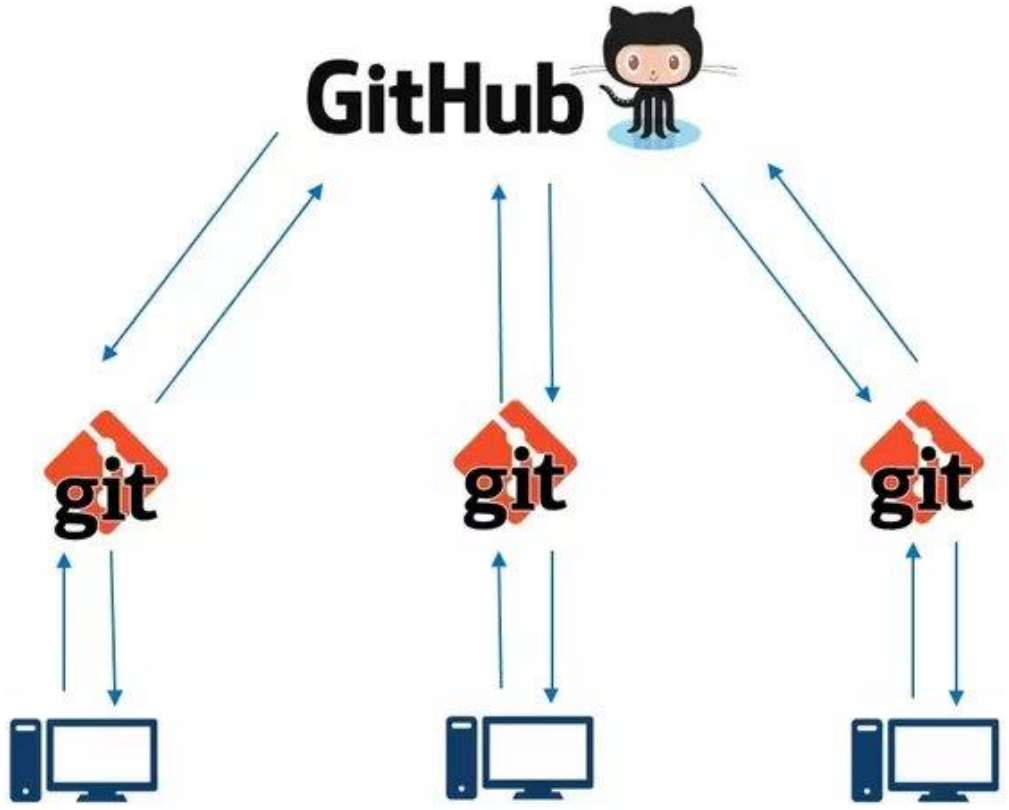
GitHub is like a giant library where you can store your projects and collaborate with people from all over the world.

GitHub



Git is the tool that helps you manage changes in your project locally on your computer.

GitHub is the online platform where you can store your Git projects, collaborate with others, and showcase your work to the world.



GitHub (Setup – Create an Account)

Note: Before work with GitHub, make sure Git is already installed

1. Access the link https://github.com/ and create an account by clicking on the Sign Up button (top right on the screen)
2. Type your email and click on the Continue button
3. Create a password and click on the Continue button
4. Type a username and click on the Continue button
5. Click on the Continue button to complete
6. Verify your account by clicking on the Verify button. After that, you need to solve the puzzle. The puzzle can vary in methods to solve
7. GitHub will send an 8 numbers code to your email. Copy it and type inside the squares shown by GitHub. If the code is correct, you will be redirected to your GitHub space. Everything is done!

Git (Setting your credentials)

1. From a terminal (command line), set your username:

```
git config --global user.name "Segun Ajibola"
```

2. Confirm that your username is set:

```
git config --global user.name
```

3. Set your email:

```
git config --global user.email "youremail@gmail.com"
```

4. You will be asked to authenticate your GitHub account, so just sign in with the same email to confirm

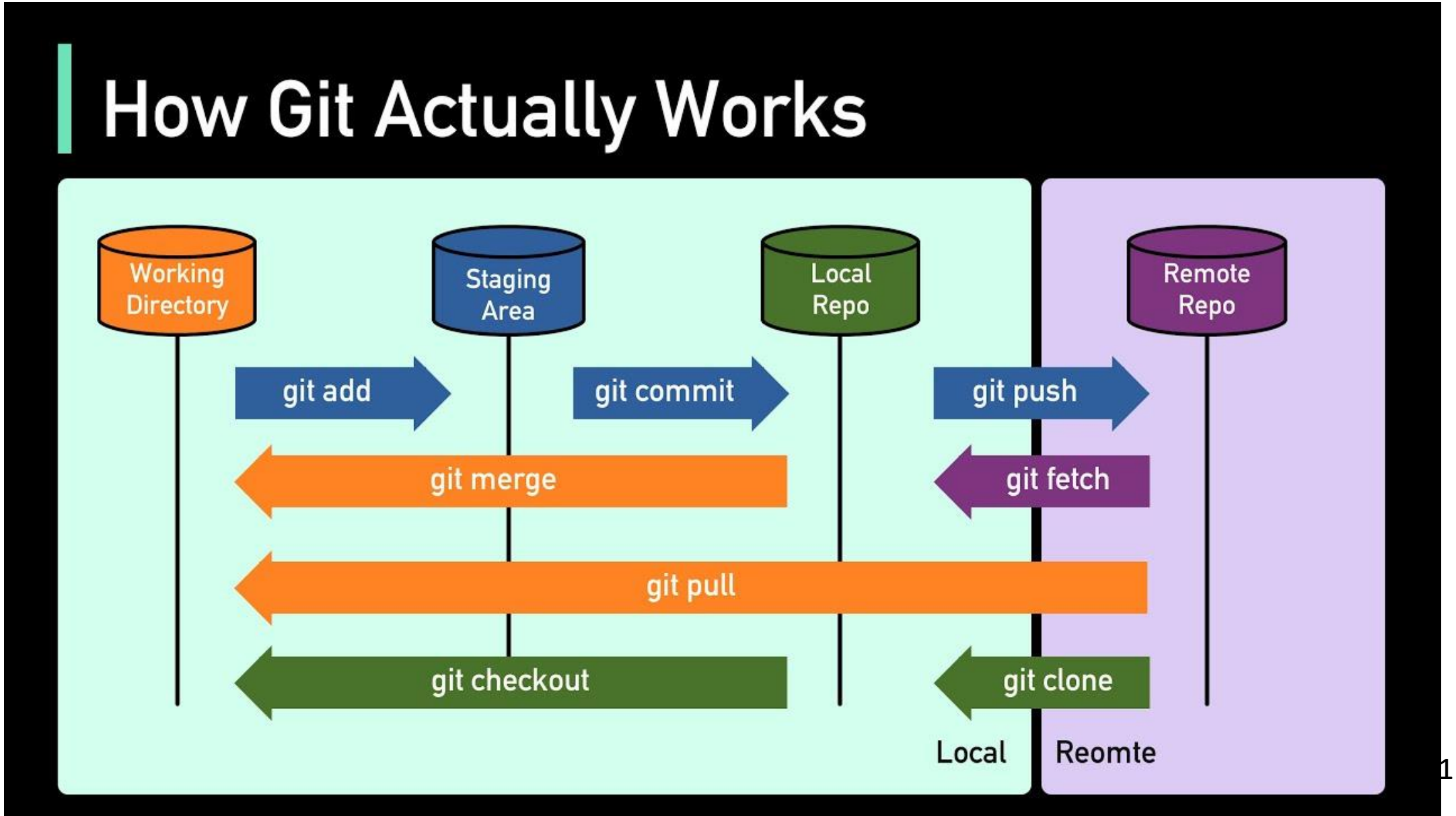
Git (Clone/Download a Repository)

1. Open a terminal from a folder where you want to have your project
   - Right-click mouse
   - Click on Open in Terminal
   - Type the next commands

2. `git clone` is like making a copy of a project from GitHub onto your computer
   - git clone https://github.com/ericrommel/ekids.git (in general)
   - git clone git@github.com:ericrommel/ekids.git (only if you have defined a public SSH key and also only in your own machine)

3. Go to the folder where you cloned the project and have fun!

Git (Main commands)

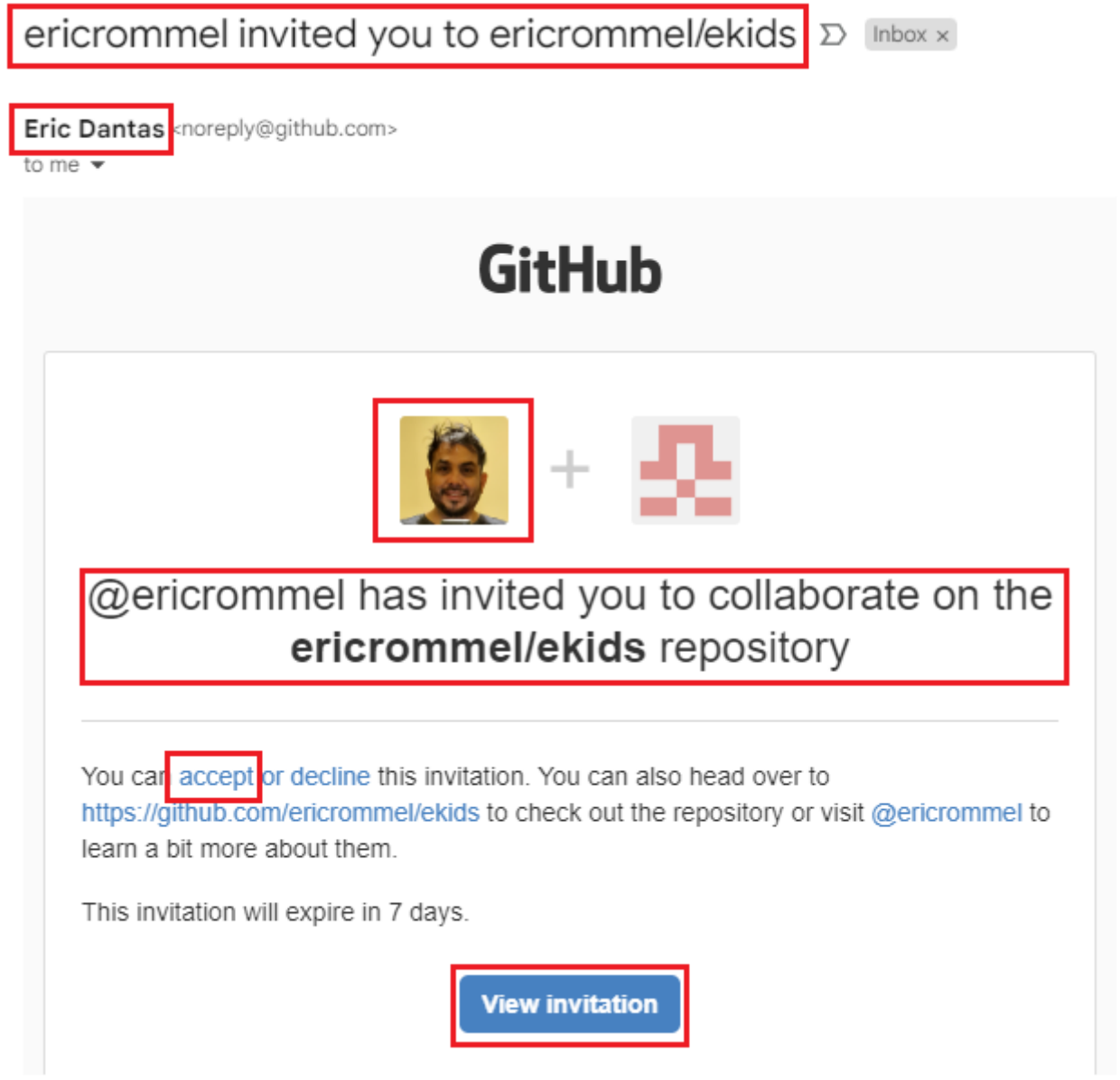


Git (Main commands)

- Change to the main branch
  - `git checkout main`
- Pull the up-to-date files from Github
  - `git pull`
- Change to your branch
  - `git checkout my-branch-name-here`
- Merge the changes from remote to your local
  - `git merge main`
- See what files were changed
  - `git status`
- Add files that you want to save on Git
  - `git add file-name or git add .`
- Commit your changes
  - git commit –m "A nice message to understand what was done"
- Push your changes
  - git push

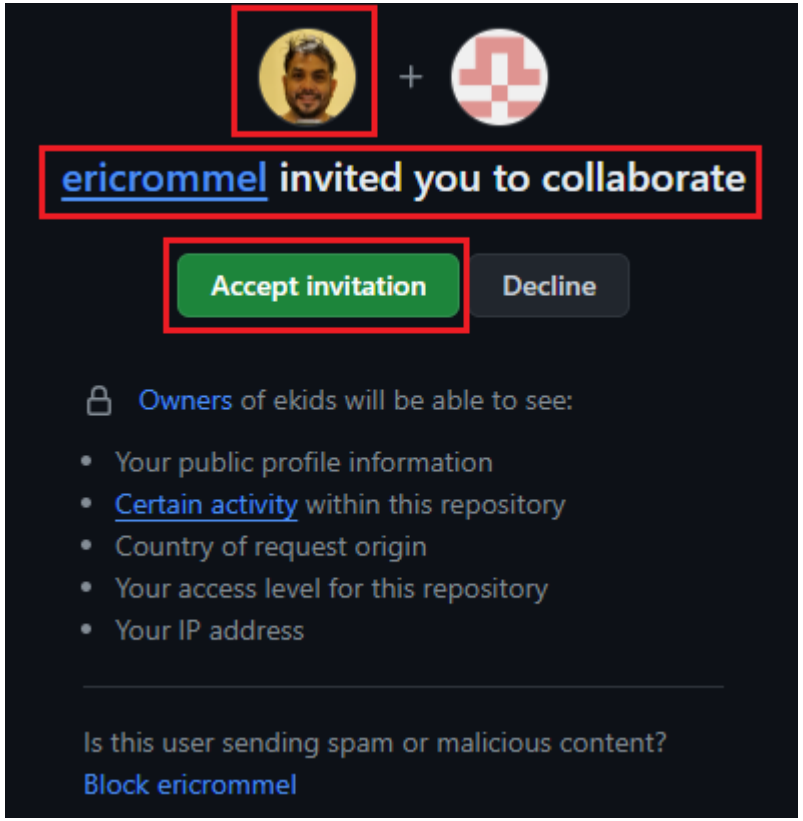
Fix Git/GitHub Integration

- **To allow you to push changes** to the ekids' repository, **you need to accept** a collaboration invitation **sent to your email** connected to your GitHub account
- **Before clicking on anything**, please confirm that the invitation is a valid one (check the highlighted squares)
- Click on **"accept"** or **"View invitation"**
- You need to be logged in to your GitHub account to accept it



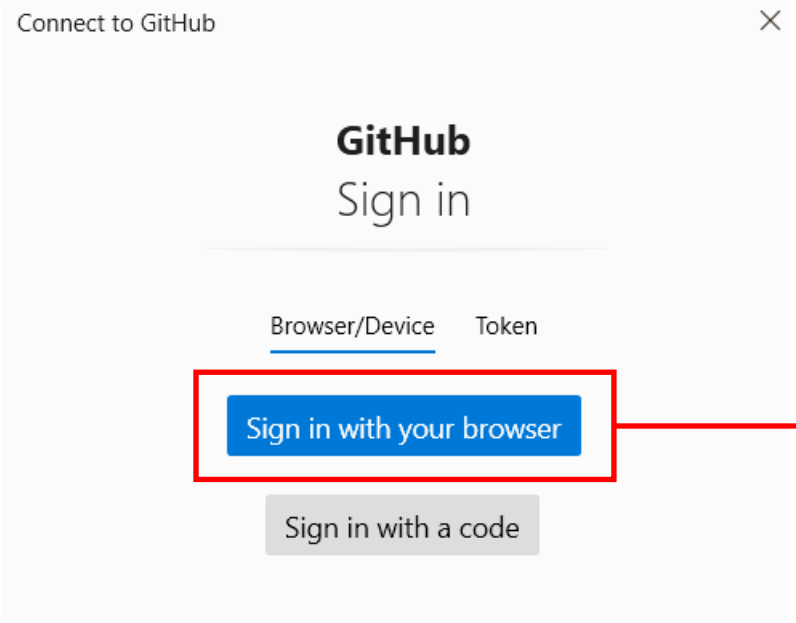
Fix Git/GitHub Integration

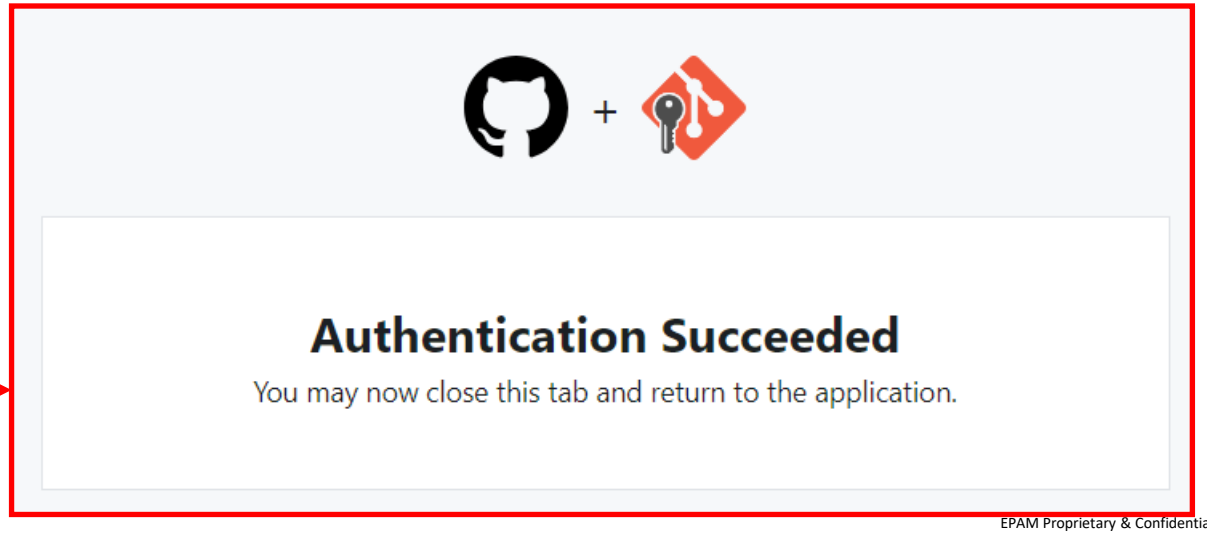
- GitHub will ask you to accept the invitation. Just click on the green button labeled “Accept invitation”



Fix Git/GitHub Integration

- At EPAM, as you are using different laptops each time, clone the repository using https://github.com/ericrommel/ekids.git
- During the push, you might be prompted to log in using the browser access





Fix Git/GitHub Integration

- If the below message is appearing for you:

```
PS C:\Users\Eric_Dantas\projects\epam\ekids> git push
git@github.com: Permission denied (publickey).
fatal: Could not read from remote repository.

Please make sure you have the correct access rights
and the repository exists.
```

See that the issue is with the public key. Probably you don't have it saved in your machine or in your GitHub account

- You need to follow the next slide steps (use Git Bash terminal)

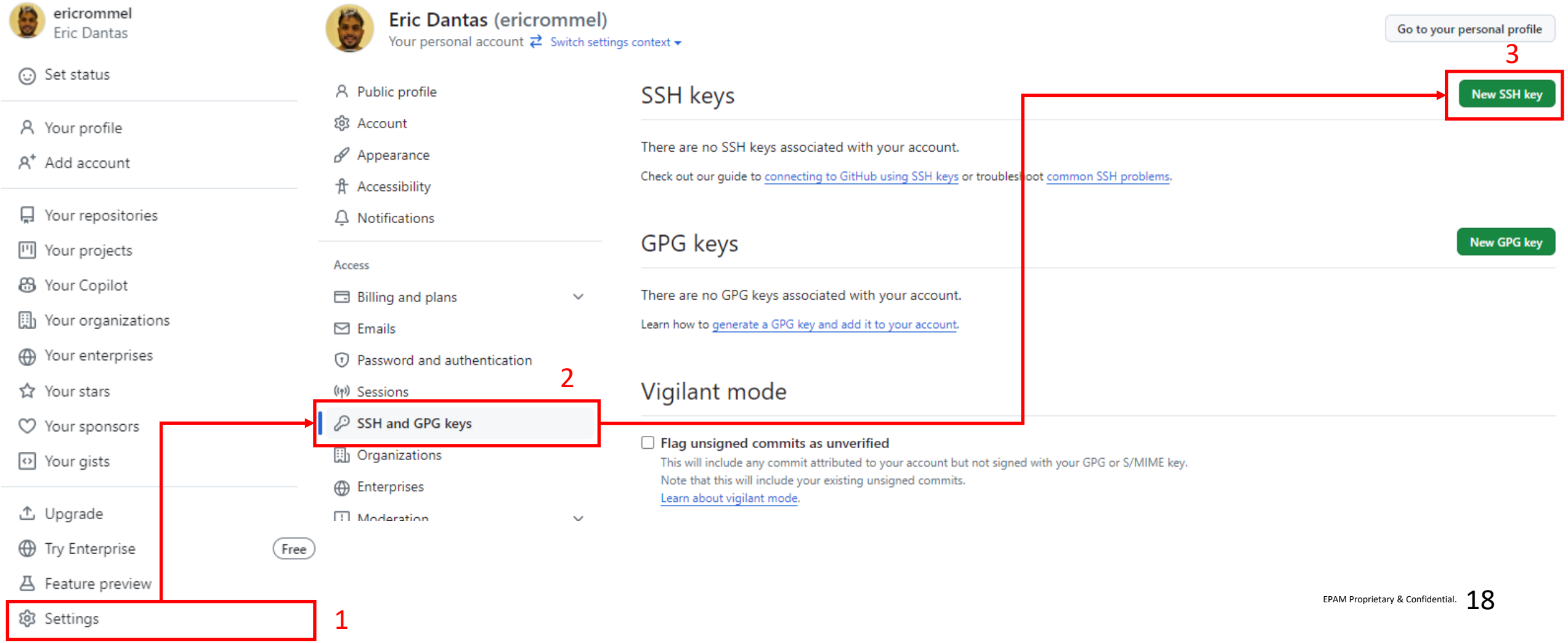
NOTE: For safety reasons, only do it from your OWN device

Fix Git/GitHub Integration

1. Turn on ***ssh-agent***
2. Generate a ***new SSH key*** on your local machine (***replace*** to use your email)
3. Just press ***Enter***
4. Type a passphrase (***don't forget it***)
5. Re-type the passphrase
6. Add your SSH key to the ***ssh-agent***
7. Type your passphrase defined
8. Copy the ***SSH public key*** to your clipboard (memory)

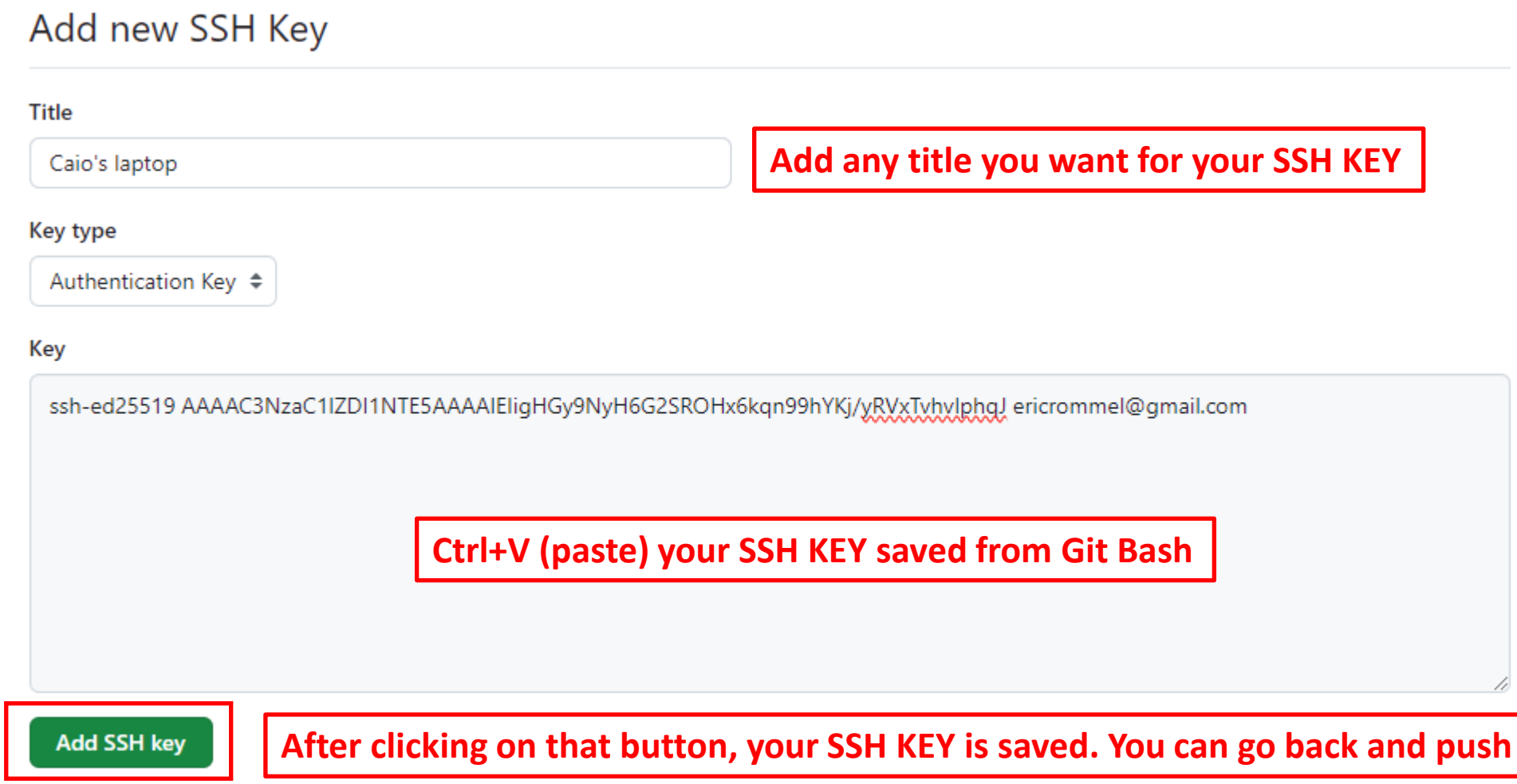
Fix Git/GitHub Integration

- Now, go to your GitHub account and save your SSH KEY copied before



Fix Git/GitHub Integration

- Now, go to your GitHub account and save your SSH KEY copied before



Homework

Note: Add a screenshot for each completed task below on your Google Classroom

- Install Git
- Create a GitHub account
- Clone the repository from https://github.com/ericrommel/ekids (git clone)
- Make any change in (e.g.: any code homework available)
- Add your changes (git add)
- Commit your changes (git commit)
- Push your changes (git push)

Docs and Books

- Git Doc: https://git-scm.com/doc
- GitHub Doc: https://docs.github.com/en
- Book: Beginning Git and GitHub: A Comprehensive Guide to Version Control, Project Management, and Teamwork for the New Developer
- Book: Version Control with Git and GitHub

Thank you!