

GitHub

Introduction



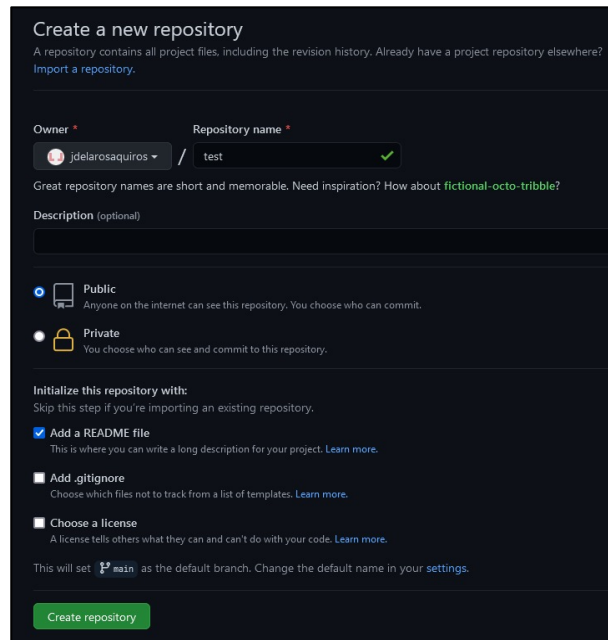
As programmers, we usually need to control the version of our programs and work with others on the same code. GitHub is a great platform to do that because it allows developers to easily communicate and collaborate with each other on the project. Also, it has many useful features to allow teams to work together and create new versions of software without disrupting current ones.

GitHub also allows us to easily incorporate new additions into existing programs. Furthermore, it makes simpler the process of working on small pieces of code with other programmers to perfect small details. Moreover, GitHub is one of the largest communities of developers in the world, so there is a lot of support from other programmers. Also, many employers use GitHub, so there is a high chance that your next employer will use GitHub.

Getting Started

First, you must create a GitHub account at <https://github.com/join>. A free account gives you access to unlimited public and private repositories. Though, it will only allow three collaborators for private repositories.

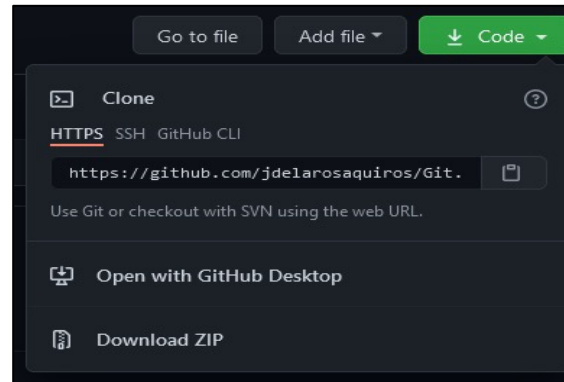
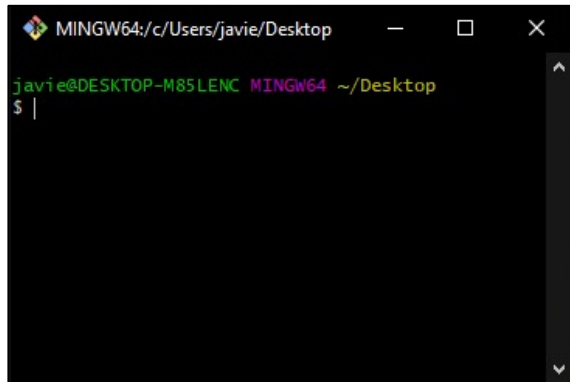
To begin a project, we need to create a repository, which stores all the files that a project needs. A good practice is to add a README file with specific information about the project. We can add the README file after creating the repository or by checking the add a README file box.



The screenshot shows the 'Create a new repository' page on GitHub. At the top, it says 'Create a new repository' and provides a brief explanation of what a repository is. Below this, there are two input fields: 'Owner' with a dropdown menu showing 'jdelarosqueros' and 'Repository name' with a text input containing 'test'. A green checkmark is visible next to the repository name. Below these fields, there is a note about repository names and a link for inspiration. The 'Description' field is optional and currently empty. Under the 'Visibility' section, 'Public' is selected with a radio button, and 'Private' is unselected. The 'Initialize this repository with' section has three checkboxes: 'Add a README file' (checked), 'Add .gitignore' (unchecked), and 'Choose a license' (unchecked). At the bottom, there is a note about the default branch being 'main' and a green 'Create repository' button.

Cloning GitHub Repositories in Local Computer

GitHub is a cloud service of Git, so you will need to install Git at <https://git-scm.com/book/en/v2/Getting-Started-Installing-Git> to use a GitHub repository in your local computer. In Windows, Git also installs the Git Bash terminal, and you can use it to manage the repository. To clone a repository in your computer, you need the link of the repository, and you can get it by clicking the green button in the code tab.



Then, you can use the *git clone* command to clone it.

Syntax: `git clone <link>`

Syncing Local Repositories with GitHub

Files in a Git repository have three stages. The first stage is the working area. In this stage, we can modify files can be modified and created but do not affect the original version. The second one is the staged area where Git prepares the added files to implement them as a new version. We can use the *git add* command to pass a file to the staged area.

```
Syntax: git add <file>
```

The final stage is the version database. In this stage, Git adds all the files in the staged area to the repository and tracks the changes as a new version. To do this, we can use *git commit* which means that we commit to the new changes.

```
Syntax: git commit -m "<message>"
```

Though, the new version of the repository is only in the local machine. To push the local copy of the repository to the GitHub server, we must use the *git push* command which will update the repository in GitHub.

```
Syntax: git push
```

Uploading Google Colab Files to GitHub

To upload a Google Colab project to GitHub, we can go to the file tab and click the save a copy in GitHub option. Then, a pop-up window will appear asking to allow Google Colab access GitHub. After that, we save the project in GitHub by selecting a repository to store the project and filling the rest of the information.

