# Git GitHub

Learn with Bilal : https://www.youtube.com/@bilalmazhar100
GitHub : https://github.com/BilalMaz/DevOps-Architect-BootCamp

# About me

Hi there, my name is Bilal, and I will Welcome you to DevOps boot camp! I am  thrilled to have you join us for this exciting journey of learning and discovery.

In this boot camp, we will be exploring the principles and practices of DevOps, which is a set of methodologies and tools that aims to bridge the gap between software development and operations. DevOps is an increasingly important area in the field of software engineering, as it helps organizations to streamline their processes, improve their agility, and deliver better value to their customers.

By the end of this boot camp, you will have gained a comprehensive understanding of DevOps and its key concepts, as well as practical skills in areas such as infrastructure automation, continuous integration and delivery, monitoring and logging, and more. You will be equipped with the knowledge and tools to apply DevOps principles in your own work and contribute to the success of your organization.

I am always looking to connect with other professionals in the field, share ideas and insights, and stay up to date on the latest trends and developments. I welcome the opportunity to connect with you and explore ways in which we can collaborate and support each other.

GitHub : https://github.com/BilalMaz/DevOps-Architect-BootCamp

LinkedIn : https://www.linkedin.com/in/bilalmazhar-cyber-security-consultant/

# Outline

- Introduction to Version Control ,
- Git  Installation,
- Configuring Name & Email in Git,
- Git Basics,
- Basic Git Commands ,
    - init command,
    - Untracked & Staged File,
    - git log command ,
    - git diff command ,
    - Removing file (rm command) ,
    - git ignore command,
    - Branches
- GitHub (Remote Repository , git push command , git clone, Cheat sheet )

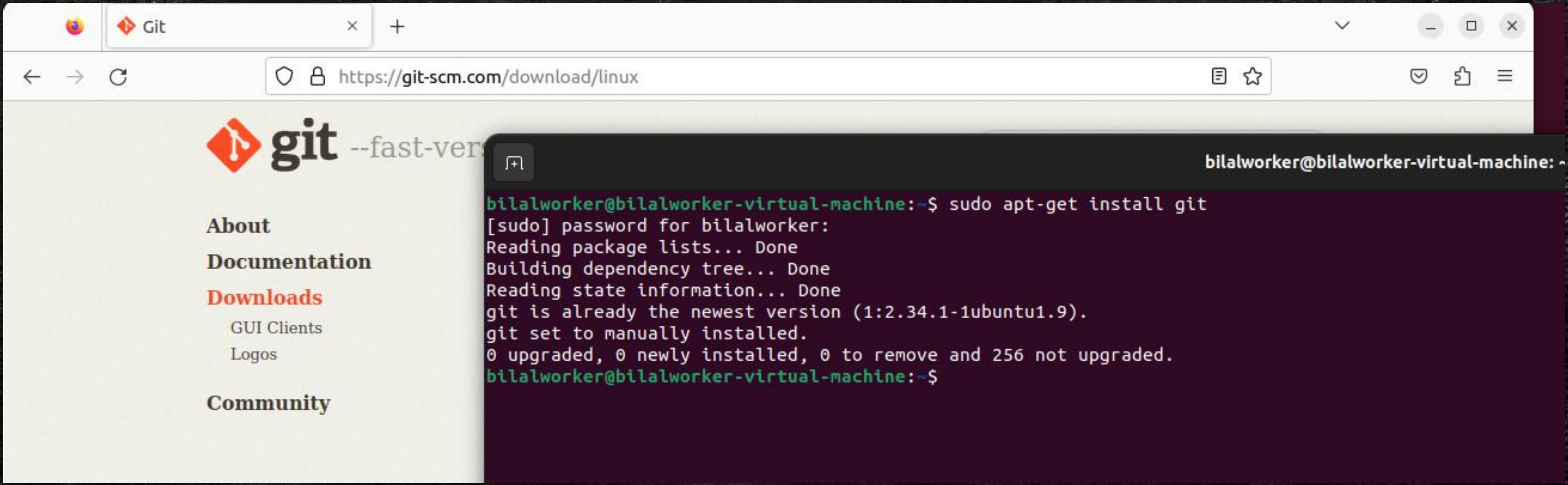
# Introduction to Version Control system

Version control, also known as source code or revision control, is a system that tracks changes to files and directories over time. It is primarily used in software development but can also be applied to any project or document that undergoes multiple revisions. The fundamental purpose of version control is to ,

- Track Changes ,
- Collaborate ,
- Revert to Previous States,
- Branching and Merging ,
- Documentation ,
- Backup.

# Git Installation

- https://git-scm.com/download/linux

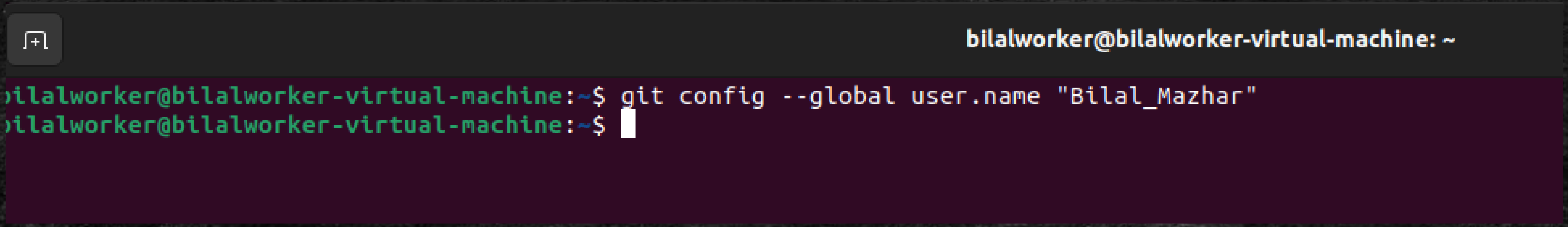


Git
https://git-scm.com/download/linux
git --fast-ver
About
Documentation
Downloads
GUI Clients
Logos
Community
bilalworker@bilalworker-virtual-machine: ~

```
bilalworker@bilalworker-virtual-machine:~$ sudo apt-get install git
[sudo] password for bilalworker:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
git is already the newest version (1:2.34.1-1ubuntu1.9).
git set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 256 not upgraded.
bilalworker@bilalworker-virtual-machine:~$
```

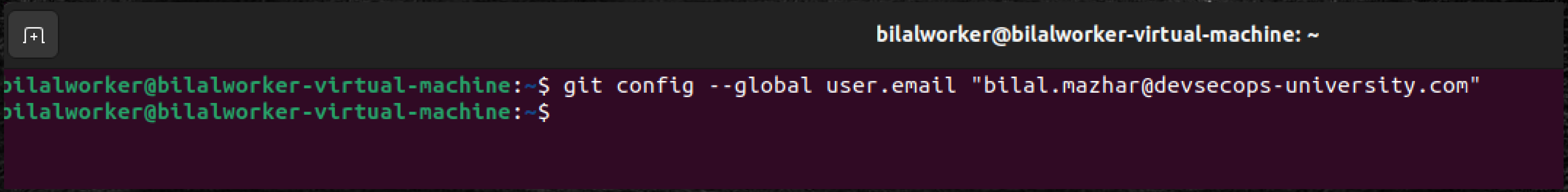
# Configuring Name & Email in Git

Configuring your name and email address in Git is essential because this information is included in every Git commit you make. It helps identify who made a particular commit. To configure your name and email in Git, you need to use the git config command. Here'



bilalworker@bilalworker-virtual-machine: ~

```
bilalworker@bilalworker-virtual-machine:~$ git config --global user.name "Bilal_Mazhar"
bilalworker@bilalworker-virtual-machine:~$ 
```



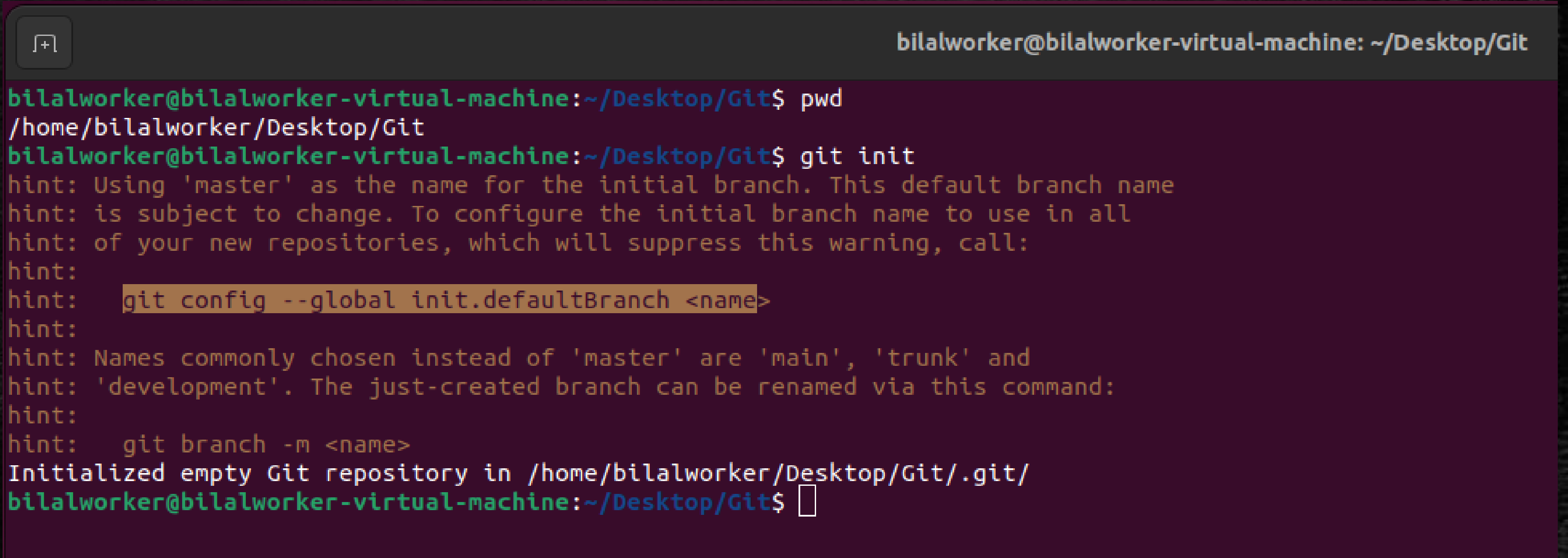
bilalworker@bilalworker-virtual-machine: ~

```
bilalworker@bilalworker-virtual-machine:~$ git config --global user.email "bilal.mazhar@devsecops-university.com"
bilalworker@bilalworker-virtual-machine:~$
```

# Git - Init

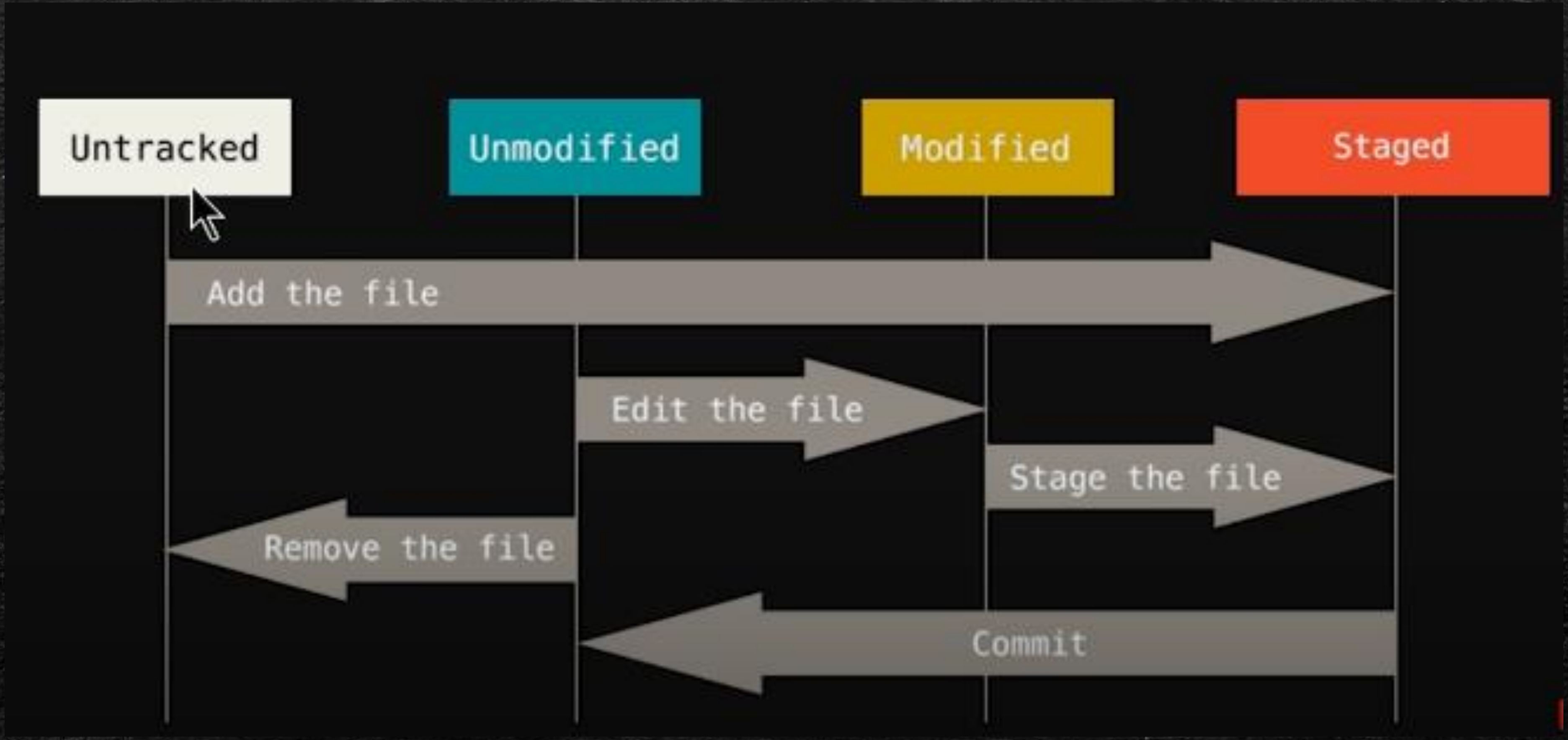
The git init command is used to initialize a new Git repository in a directory. When you run this command, Git creates a hidden subdirectory within the current directory that contains all the necessary files and data structures required for version control. Here's how to use git init ,

→ navigate to the directory where you want to create a new Git repository.



```
bilalworker@bilalworker-virtual-machine:~/Desktop/Git$ pwd
/home/bilalworker/Desktop/Git
bilalworker@bilalworker-virtual-machine:~/Desktop/Git$ git init
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in /home/bilalworker/Desktop/Git/.git/
bilalworker@bilalworker-virtual-machine:~/Desktop/Git$ 
```

# Untracked & Staged File,

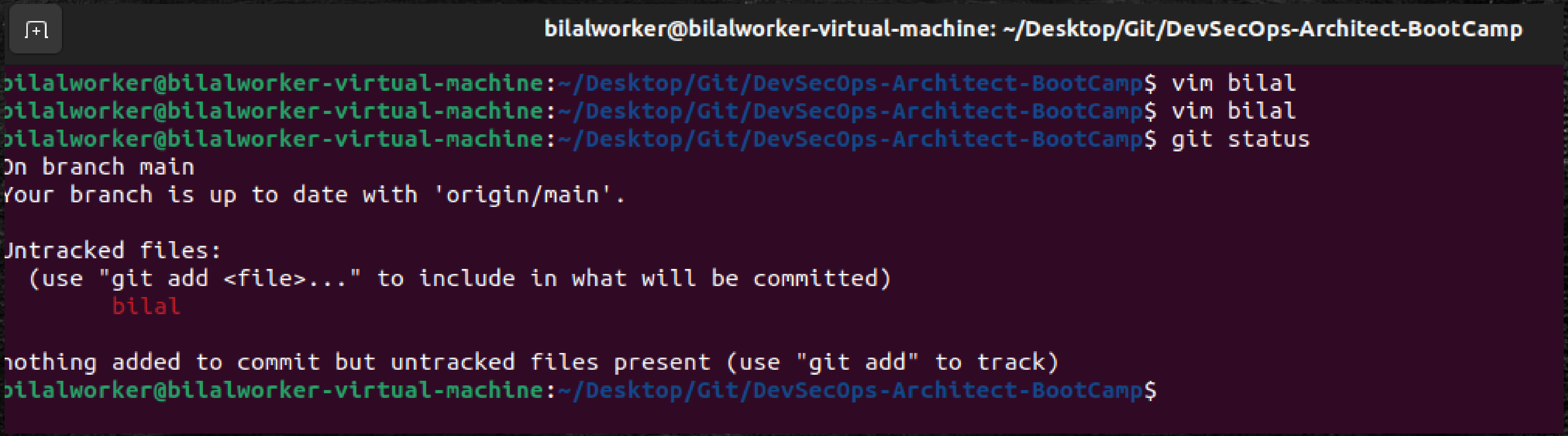


# Git commands

| Git Commands | Description |
|---|---|
| git clone <repo> | Create a copy of a remote repository on your local machine. |
| git add <file> | Stage changes for the next commit. |
| git commit -m "message" | Create a new commit with staged changes and a descriptive message. |
| git status | Show the status of your working directory, indicating changes. |
| git status | Show the status of your working directory, indicating changes. |
| git log | Display a history of commits in the repository. |
| git pull | Fetch changes from a remote repository and merge them into your current branch. |
| git push | Push your local commits to a remote repository. |
| git branch | List all branches in the repository. |

# Git Status

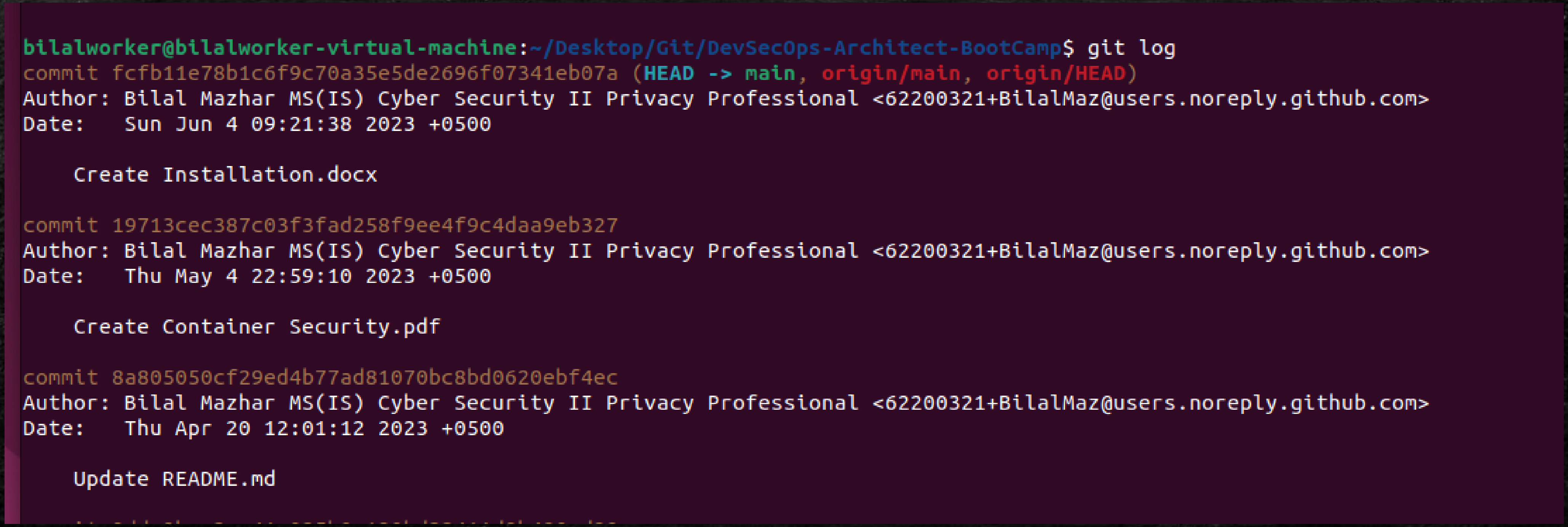
git status is a Git command that provides a concise summary of the current state of your repository, including modified files, staged changes, untracked files, and branch information.


bilalworker@bilalworker-virtual-machine: ~/Desktop/Git/DevSecOps-Architect-BootCamp

```
bilalworker@bilalworker-virtual-machine:~/Desktop/Git/DevSecOps-Architect-BootCamp$ vim bilal
bilalworker@bilalworker-virtual-machine:~/Desktop/Git/DevSecOps-Architect-BootCamp$ vim bilal
bilalworker@bilalworker-virtual-machine:~/Desktop/Git/DevSecOps-Architect-BootCamp$ git status
On branch main
Your branch is up to date with 'origin/main'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        bilal

nothing added to commit but untracked files present (use "git add" to track)
bilalworker@bilalworker-virtual-machine:~/Desktop/Git/DevSecOps-Architect-BootCamp$
```

# Git Logs

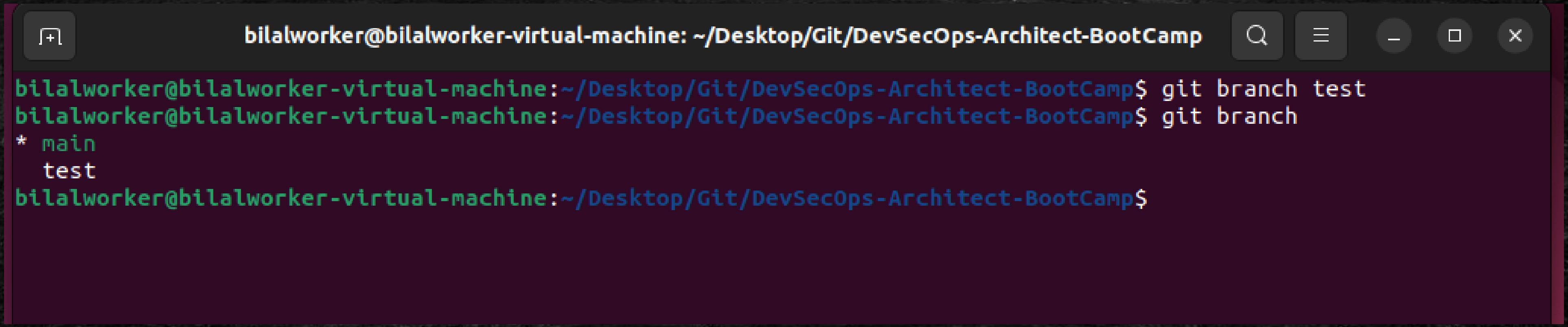
The git log command is used to display a chronological history of commits in a Git repository. It provides information about who made each commit, when it was made, and the associated commit messages, helping you track the development and history of the project



```
bilalworker@bilalworker-virtual-machine:~/Desktop/Git/DevSecOps-Architect-BootCamp$ git log
commit fcfb11e78b1c6f9c70a35e5de2696f07341eb07a (HEAD -> main, origin/main, origin/HEAD)
Author: Bilal Mazhar MS(IS) Cyber Security II Privacy Professional <62200321+BilalMaz@users.noreply.github.com>
Date:   Sun Jun 4 09:21:38 2023 +0500

    Create Installation.docx

commit 19713cec387c03f3fad258f9ee4f9c4daa9eb327
Author: Bilal Mazhar MS(IS) Cyber Security II Privacy Professional <62200321+BilalMaz@users.noreply.github.com>
Date:   Thu May 4 22:59:10 2023 +0500

    Create Container Security.pdf

commit 8a805050cf29ed4b77ad81070bc8bd0620ebf4ec
Author: Bilal Mazhar MS(IS) Cyber Security II Privacy Professional <62200321+BilalMaz@users.noreply.github.com>
Date:   Thu Apr 20 12:01:12 2023 +0500

    Update README.md
```

# Git Branch

The git branch command in Git is used to list, create, delete, and manage branches within a Git repository. When you run git branch without any arguments, it displays a list of existing branches in the repository and highlights the currently active branch.

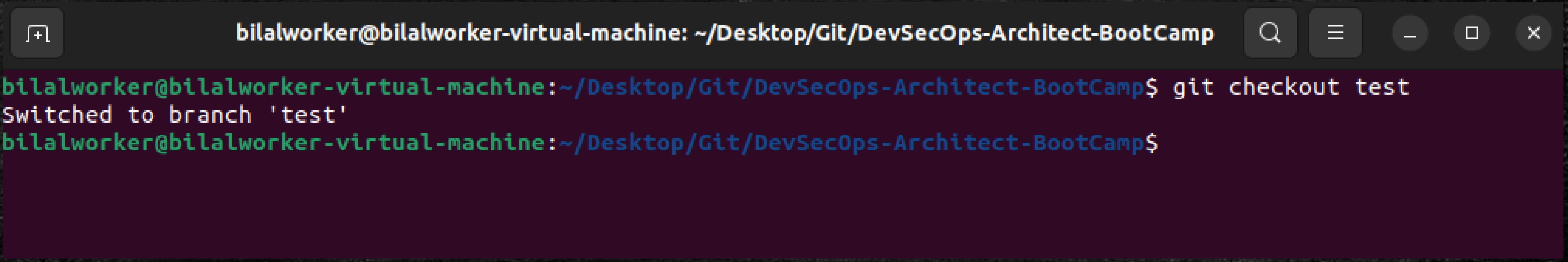


bilalworker@bilalworker-virtual-machine: ~/Desktop/Git/DevSecOps-Architect-BootCamp

```
bilalworker@bilalworker-virtual-machine:~/Desktop/Git/DevSecOps-Architect-BootCamp$ git branch test
bilalworker@bilalworker-virtual-machine:~/Desktop/Git/DevSecOps-Architect-BootCamp$ git branch
* main
  test
bilalworker@bilalworker-virtual-machine:~/Desktop/Git/DevSecOps-Architect-BootCamp$
```

# Git checkout branch

The git branch command in Git is used to list, create, delete, and manage branches within a Git repository. When you run git branch without any arguments, it displays a list of existing branches in the repository and highlights the currently active branch.

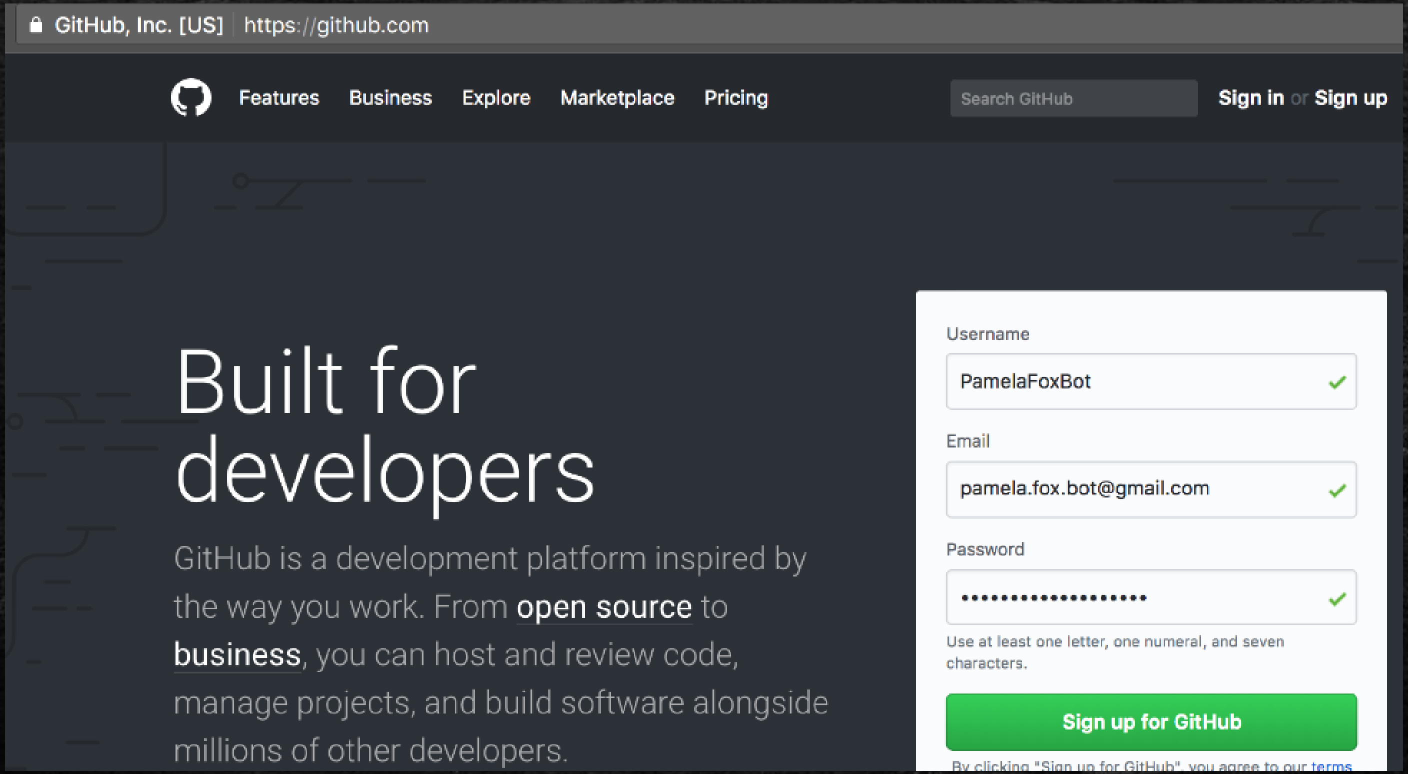


bilalworker@bilalworker-virtual-machine: ~/Desktop/Git/DevSecOps-Architect-BootCamp

```
bilalworker@bilalworker-virtual-machine:~/Desktop/Git/DevSecOps-Architect-BootCamp$ git checkout test
Switched to branch 'test'
bilalworker@bilalworker-virtual-machine:~/Desktop/Git/DevSecOps-Architect-BootCamp$
```

# GitHub

GitHub is a web-based platform and service that provides hosting for software development and version control using Git. It's one of the most popular and widely used platforms for hosting and collaborating on code repositories



Built for developers

GitHub is a development platform inspired by the way you work. From **open source** to **business**, you can host and review code, manage projects, and build software alongside millions of other developers.

Username: PamelaFoxBot ✓

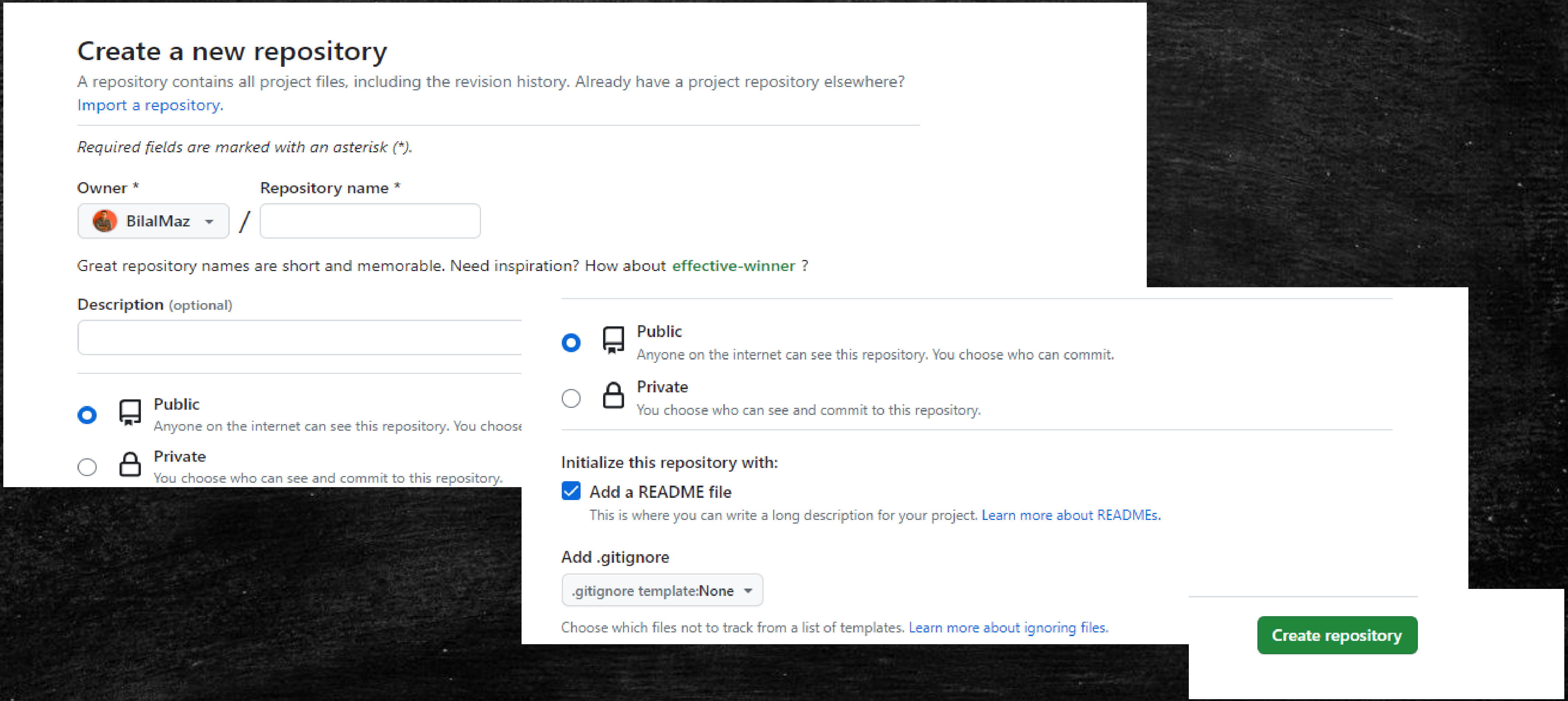
Email: pamela.fox.bot@gmail.com ✓

Password: ••••••••••••••••••••• ✓

Use at least one letter, one numeral, and seven characters.

By clicking "Sign up for GitHub", you agree to our terms

# Creating Repo on GitHub



## Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? Import a repository.

*Required fields are marked with an asterisk (*).*

Owner * BilalMaz / Repository name *

Great repository names are short and memorable. Need inspiration? How about effective-winner ?

Description (optional)

● Public
Anyone on the internet can see this repository. You choose

○ Private
You choose who can see and commit to this repository.

● Public
Anyone on the internet can see this repository. You choose who can commit.

○ Private
You choose who can see and commit to this repository.

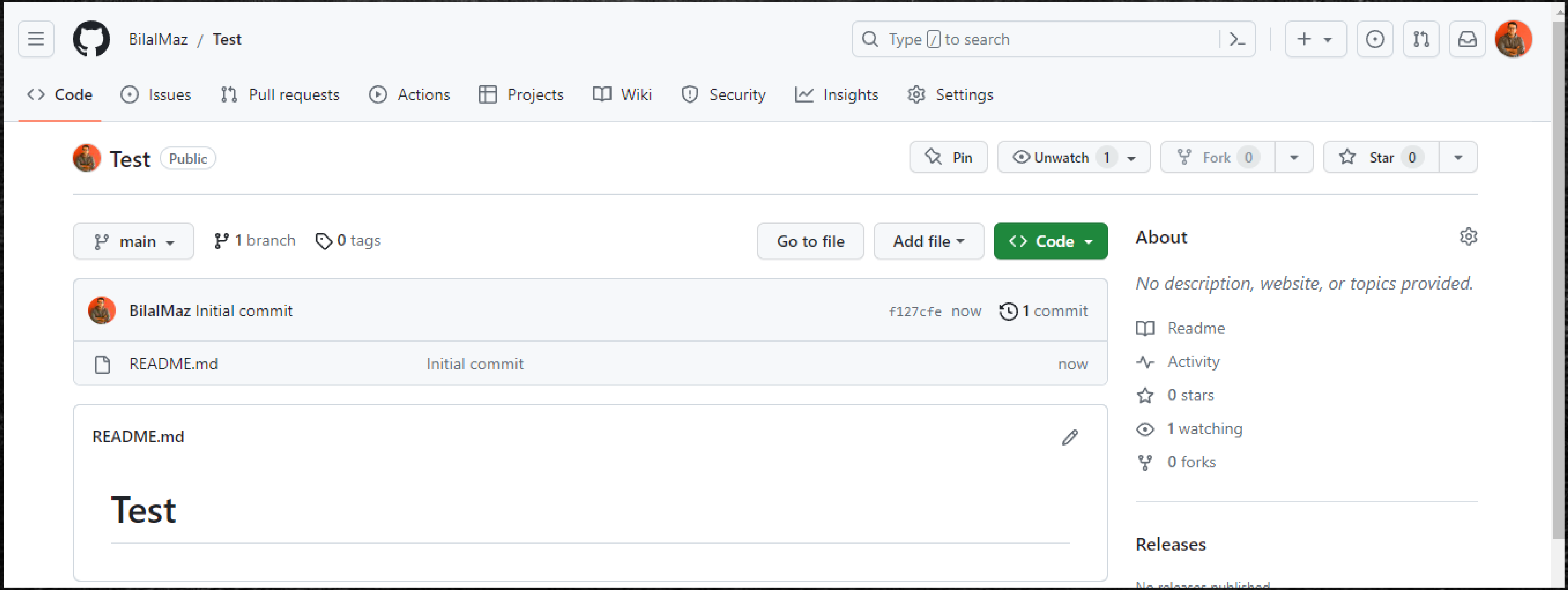
Initialize this repository with:

☑ Add a README file
This is where you can write a long description for your project. Learn more about READMEs.

Add .gitignore

.gitignore template:None

Choose which files not to track from a list of templates. Learn more about ignoring files.



BilalMaz Initial commit f127cfe now 1 commit

| | | |
|---|---|---|
| README.md | Initial commit | now |

README.md

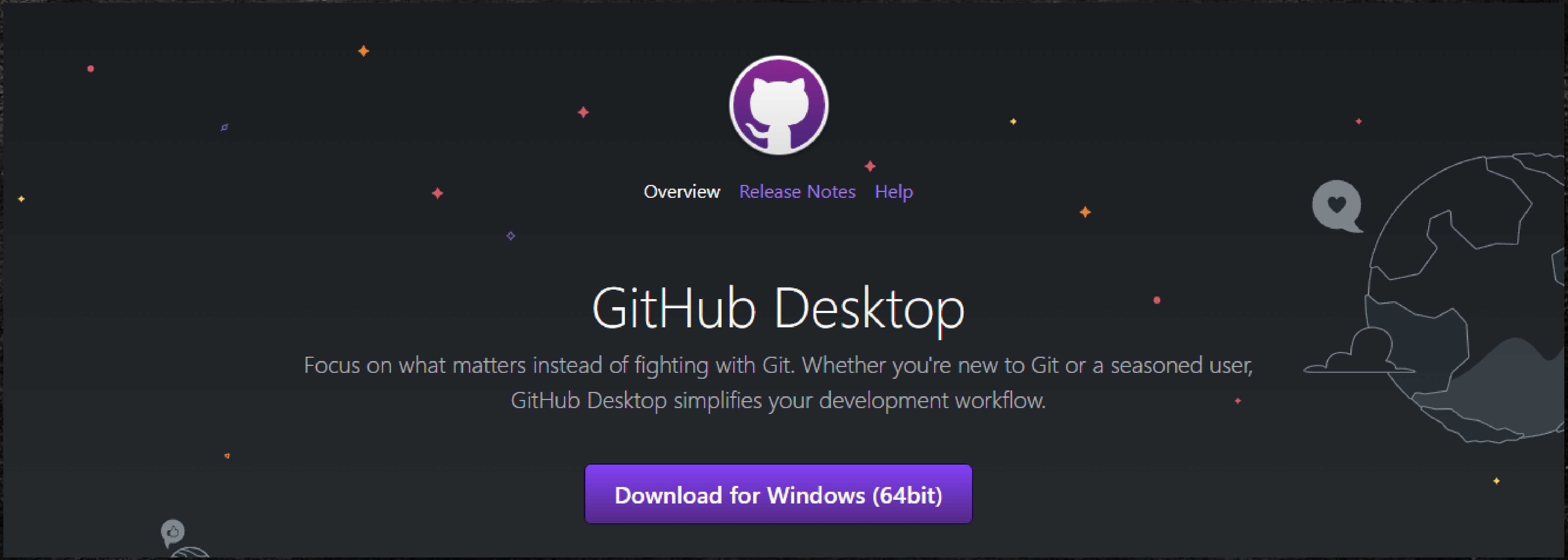
# Test

*No description, website, or topics provided.*

No releases published

# GitHub – Download

https://desktop.github.com/

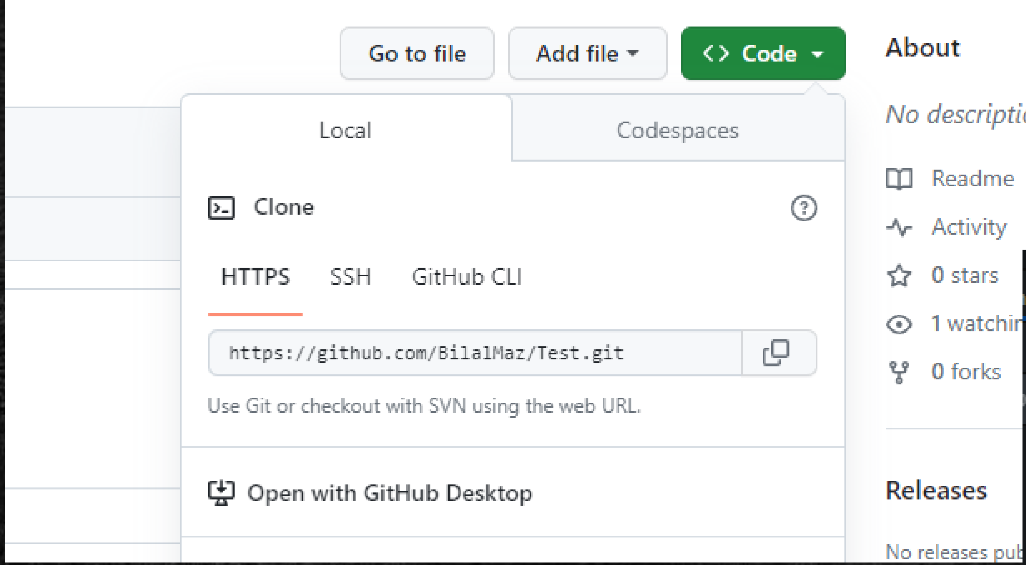


Overview Release Notes Help

GitHub Desktop

Focus on what matters instead of fighting with Git. Whether you're new to Git or a seasoned user, GitHub Desktop simplifies your development workflow.

# Cloning Repo

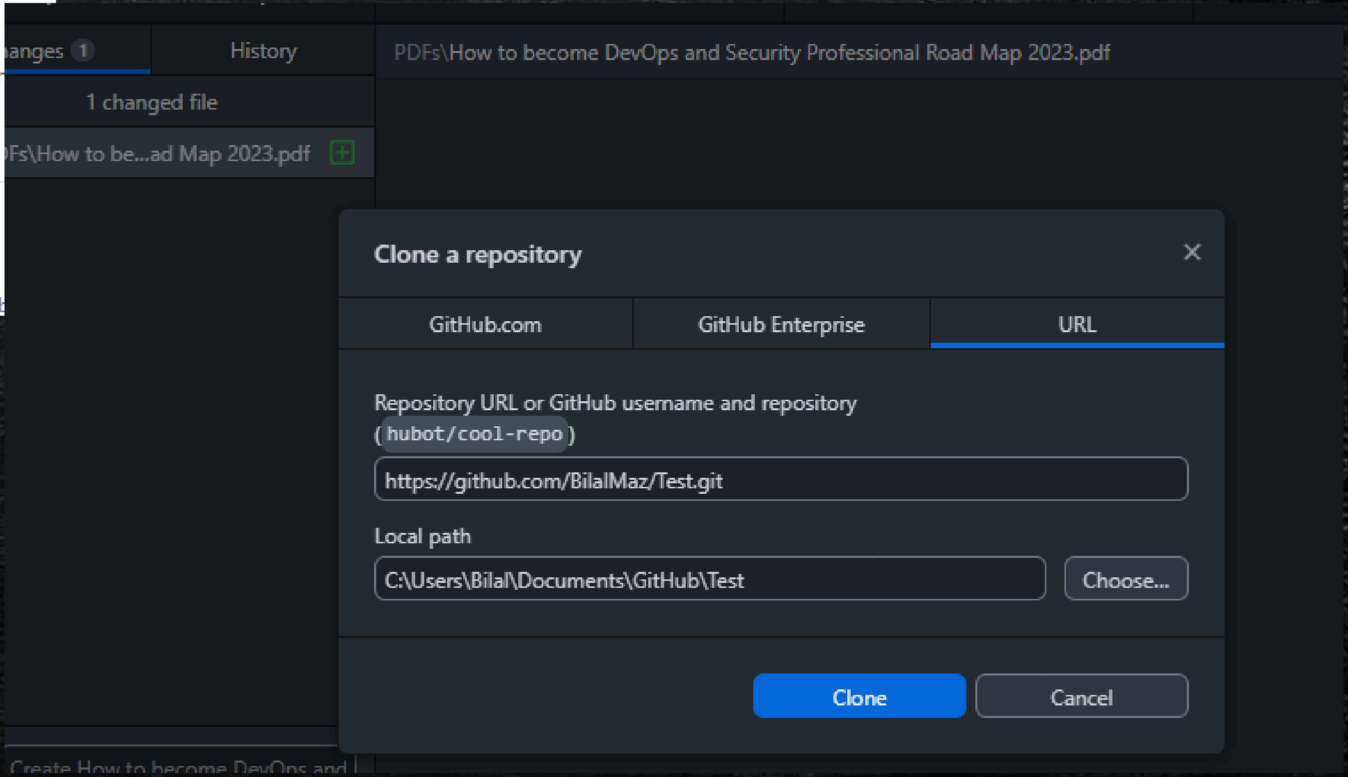


```
https://github.com/BilalMaz/Test.git
```

Use Git or checkout with SVN using the web URL.

*No description, w*

No releases pub



PDFs\How to become DevOps and Security Professional Road Map 2023.pdf

)Fs\How to be...ad Map 2023.pdf

Repository URL or GitHub username and repository (`hubot/cool-repo`)

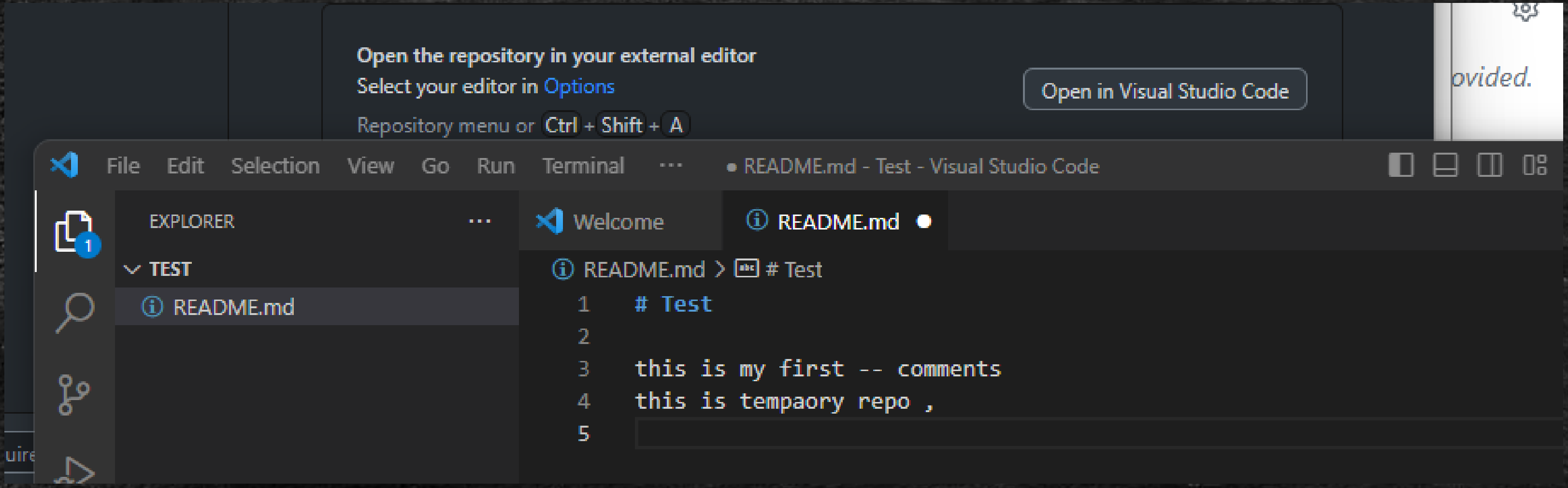
https://github.com/BilalMaz/Test.git

Local path

C:\Users\Bilal\Documents\GitHub\Test

Create How to become DevOps and

# Change – Detected

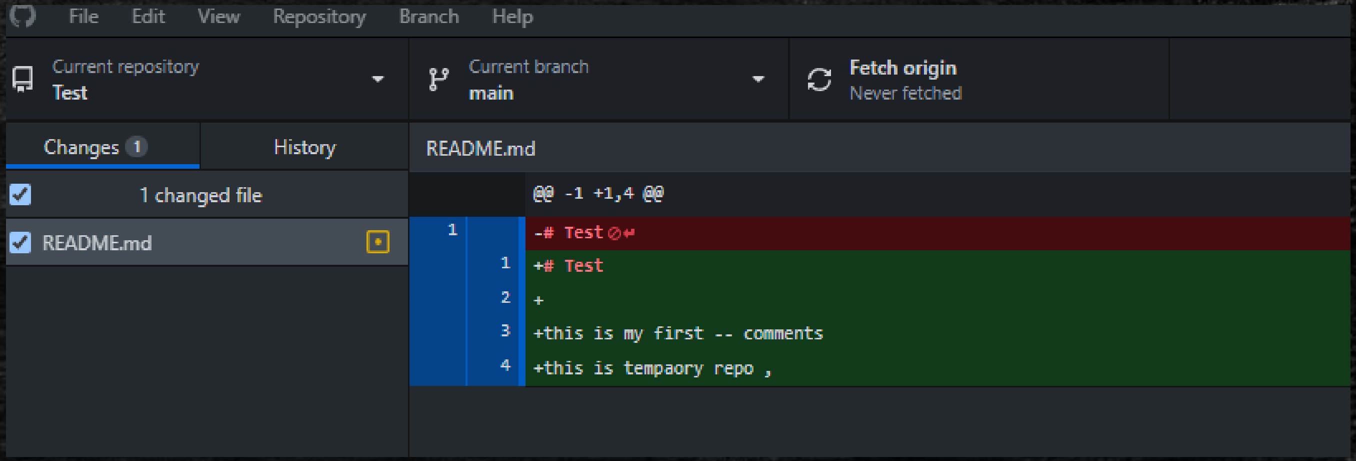


Open the repository in your external editor

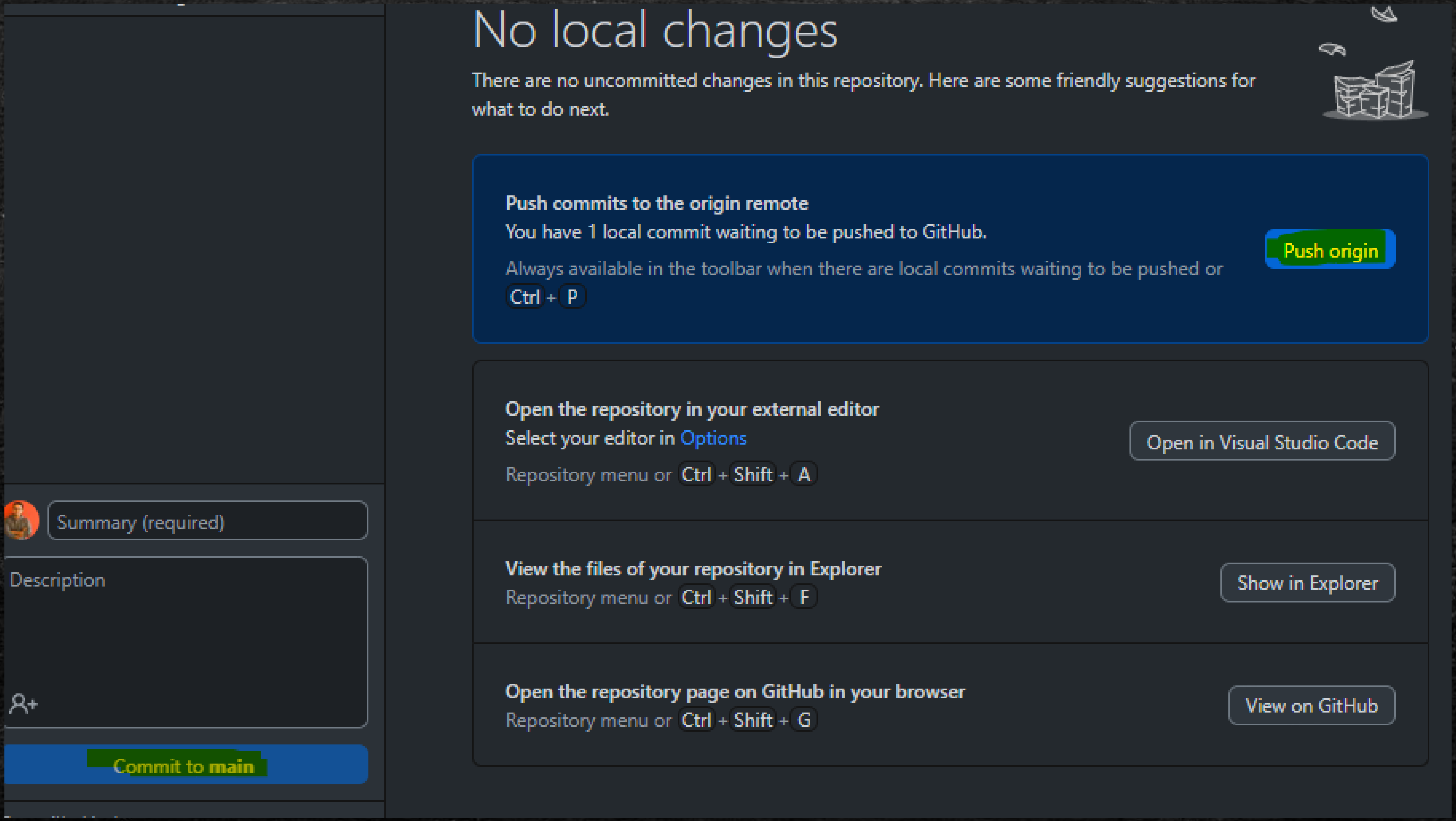
Select your editor in Options

Repository menu or Ctrl + Shift + A

```
# Test

this is my first -- comments
this is tempaory repo ,

```



```
@@ -1 +1,4 @@
-# Test
+# Test
+
+this is my first -- comments
+this is tempaory repo ,
```



# No local changes

There are no uncommitted changes in this repository. Here are some friendly suggestions for what to do next.

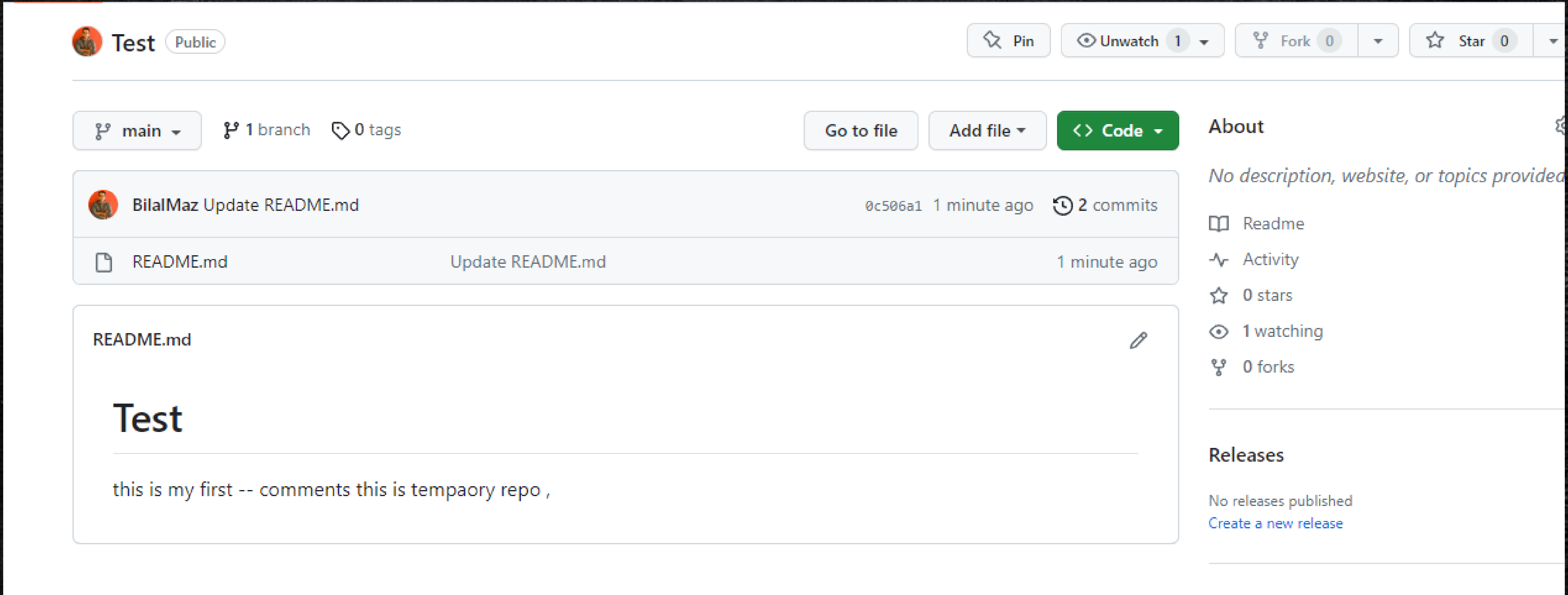
**Push commits to the origin remote**
You have 1 local commit waiting to be pushed to GitHub.
Always available in the toolbar when there are local commits waiting to be pushed or Ctrl + P

**Open the repository in your external editor**
Select your editor in Options
Repository menu or Ctrl + Shift + A

**View the files of your repository in Explorer**
Repository menu or Ctrl + Shift + F

**Open the repository page on GitHub in your browser**
Repository menu or Ctrl + Shift + G

# Reflecting – Changes



No description, website, or topics provided

BilalMaz Update README.md 0c506a1 1 minute ago 2 commits

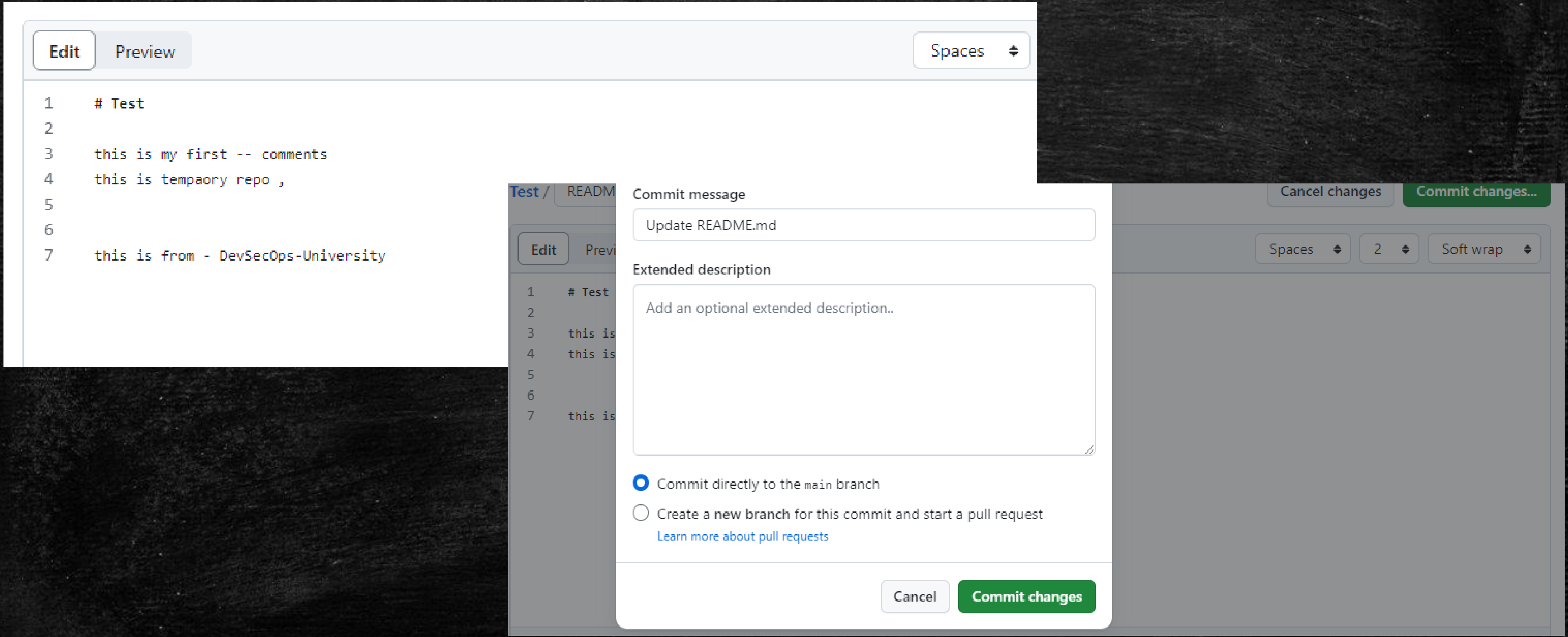
README.md Update README.md 1 minute ago

README.md

# Test

this is my first -- comments this is tempaory repo ,

# Fetching – Changes



```
# Test

this is my first -- comments
this is tempaory repo ,


this is from - DevSecOps-University
```

```
# Test

this is
this is


this is
```

Commit message

Update README.md

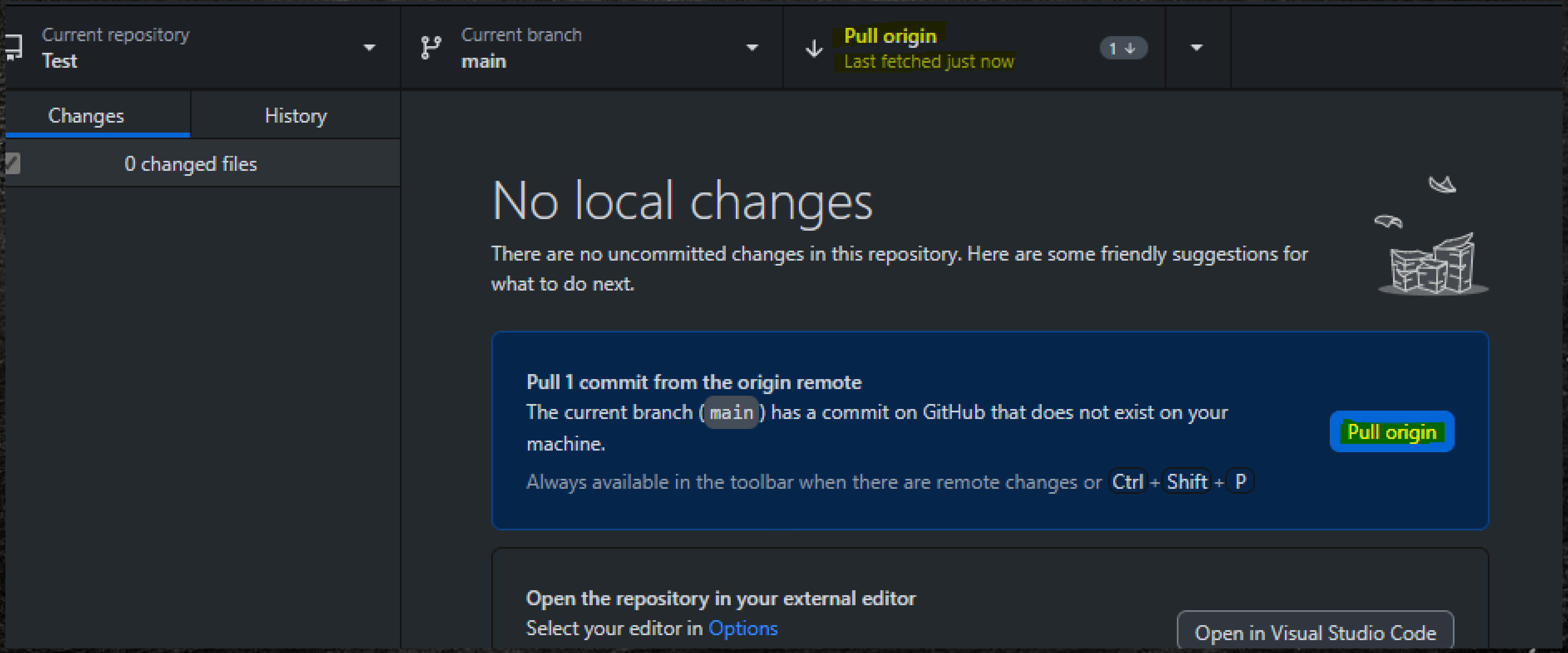
Extended description

Add an optional extended description..

● Commit directly to the `main` branch

○ Create a **new branch** for this commit and start a pull request

Learn more about pull requests



No local changes

There are no uncommitted changes in this repository. Here are some friendly suggestions for what to do next.

**Pull 1 commit from the origin remote**

The current branch (`main`) has a commit on GitHub that does not exist on your machine.

Always available in the toolbar when there are remote changes or Ctrl + Shift + P

**Open the repository in your external editor**

Select your editor in Options