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# GitHub - Tutorial

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# Agenda for Today

- What is GitHub
- Need for GitHub
- Getting Started for GitHub
- Create a Repository
- Create a Branch
- Make a Commit
- Pull Request



# What is GitHub

- What is GitHub
  - Open-source platform – Web based repository
  - Platform helps people solve problems – Coding!
  - Building software together.
  - Together with a team
- May work on the same project
  - May not be on same part of the world or place.
  - Efficient platform for collaborations



# Need for GitHub

- **Need for GitHub**

- Enables effective collaborations
- Useful for version control –
  - Enable multiple people to work simultaneously on a single project
- Download any project – Open source
- Software development team wants to design a website - code needs to be updated

- **May work on the same project**

- Easy evaluation of each other work
- Manage the repositories – Largest shared repositor
- Secure cloud storages – Projects
- Powerful community



# Git & GitHub - Differences

- **Git**

- A version-controlled tool
- Git pulls or pushes data from central server or local machine
  - Fetching data or pushing data
- Installed and maintained in your local computer

- **GitHub**

- It is a cloud-based service
- Largest shared repository – Cloud based
  - GitHub uses Git tool
- Host for git libraries
- Powerful community



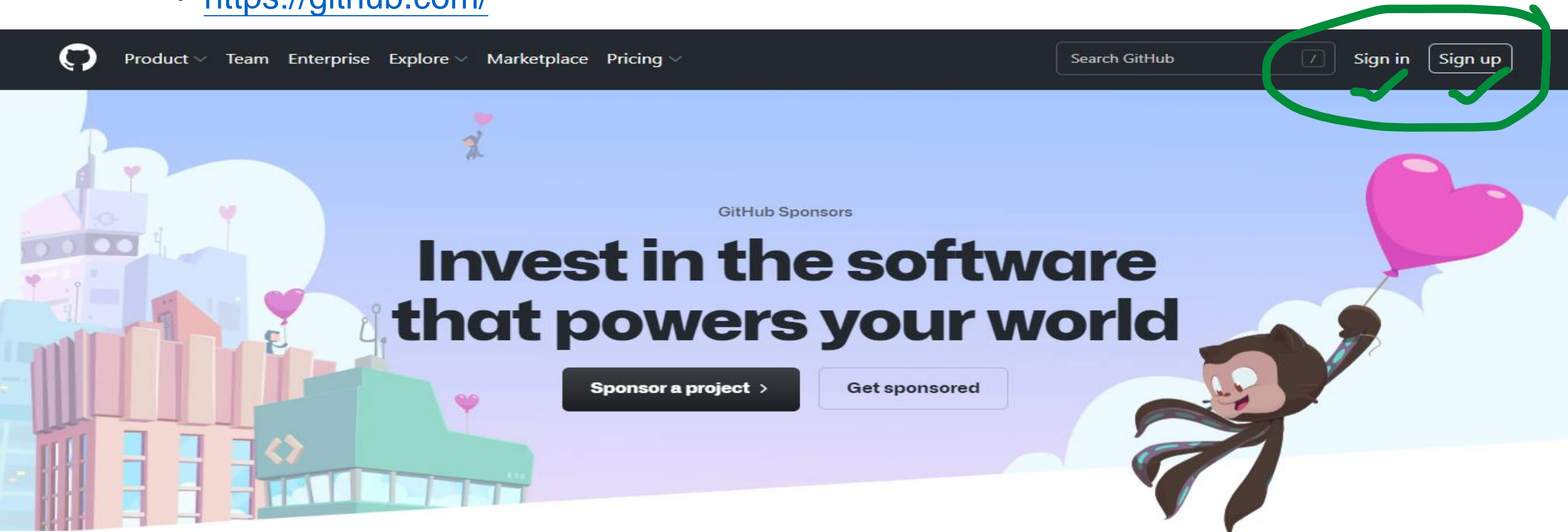


# Getting Started with GitHub

- How to access GitHub
  - <https://github.com/>
  - Mobile Version
  - Desktop App
  - Work on the website
- Sign up and Sign in
  - Create an account
  - Login Credentials
  - Sign into your GitHub account.
- Sponsors
  - Any one can be a sponsor.
  - Available in 37 regions including places like Bulgaria (New region)

# Create an Account in GitHub

- How to access GitHub
  - <https://github.com/>



# GitHub – Sign Up

- Sign Up to GitHub
  - <https://github.com/>



Already have an account? [Sign in](#) →

Welcome to GitHub!  
Let's begin the adventure

Enter your email

→

By creating an account, you agree to the [Terms of Service](#). For more information about GitHub's privacy practices, see the [GitHub Privacy Statement](#). We'll occasionally send you account-related emails. \*



# GitHub - Login

- Sign into GitHub
  - <https://github.com/login>



Sign in to GitHub

Username or email address

anil@iiitd.ac.in

Password

[Forgot password?](#)

.....

Sign in

New to GitHub? [Create an account.](#)

[Terms](#) [Privacy](#) [Security](#) [Contact GitHub](#)

# Main page – GitHub Account

- Main page
- After you login

The screenshot shows the GitHub main page after a user has logged in. The top navigation bar is dark with the GitHub logo on the left, a search bar, and links for Pull requests, Issues, Marketplace, and Explore. On the right of the bar are notification and profile icons. The main content area is divided into three columns. The left column has a 'Create your first project' section with buttons for 'Create repository' and 'Import repository', followed by a 'Recent activity' section. The middle column features a large 'Join GitHub Global Campus!' banner with a detailed description of the program and a 'Join Global Campus' button. Below the banner is a grid of featured content including 'Breaking into tech', 'Level up your code with TwilioQuest', and 'Learning by teaching for your community'. The right column contains a 'Our response to the war in Ukraine' message and a 'Latest changes' section listing recent updates like 'Secret scanning alert events' and 'GitHub Actions: Re-run jobs with debug logging'.

**Create your first project**  
Ready to start building? Create a repository for a new idea or bring over an existing repository to keep contributing to it.

[Create repository](#) [Import repository](#)

**Recent activity**  
When you take actions across GitHub, we'll provide links to that activity here.

**Join GitHub Global Campus!**  
Prepare for a career in tech by joining GitHub Global Campus. Global Campus will help you get the practical industry knowledge you need by giving you access to industry tools, events, learning resources and a growing student community.

[Join Global Campus](#)

**Our response to the war in Ukraine**  
GitHub is united with the people of Ukraine and the international community.  
[Read more](#)

**Latest changes**

- 13 hours ago  
Secret scanning alert events now in the audit log
- 13 hours ago  
GitHub Actions: Re-run jobs with debug logging
- Yesterday  
GitHub Sponsors is now available in India
- 5 days ago  
Actions can now run in a Node.js 16 runtime

[View changelog →](#)

**Following** For you **Beta**

# GitHub – Main Page

- On the top of the main page
  - Pull Request
  - Issues
  - Marketplace
  - Explore
- Pull Request
  - Update a code, Compare code, and merge or pull it into your work if needed
- Explore
  - Can explore GitHub accounts, trending activities, recommendations, codes, collaborators etc....
- Marketplace
  - Explore various apps and stuff related to the coding and other categories



Search or jump to...



Pull requests

Issues

Marketplace

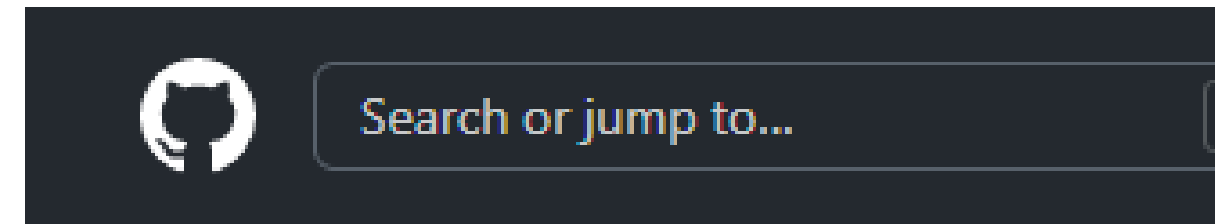
Explore





# GitHub – Main Page

- Main Page
  - Everything is empty – Fresh Page
- Various icons or Applets
  - Search box on the left
  - Create repository
  - Import repository
  - Bell icon
  - + icon
  - Recent activity
- Scroll it down
  - Introduce yourself
  - Explore GitHub

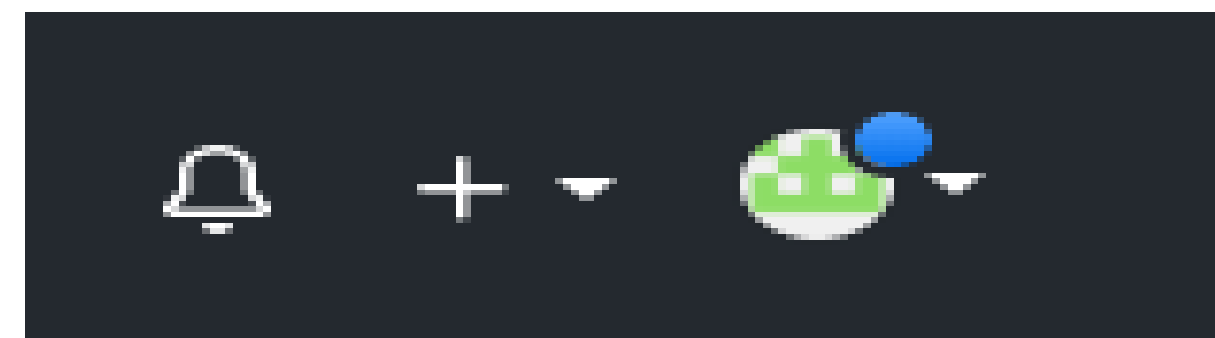


Create your first project

Ready to start building? Create a repository for a new idea or bring over an existing repository to keep contributing to it.

Create repository

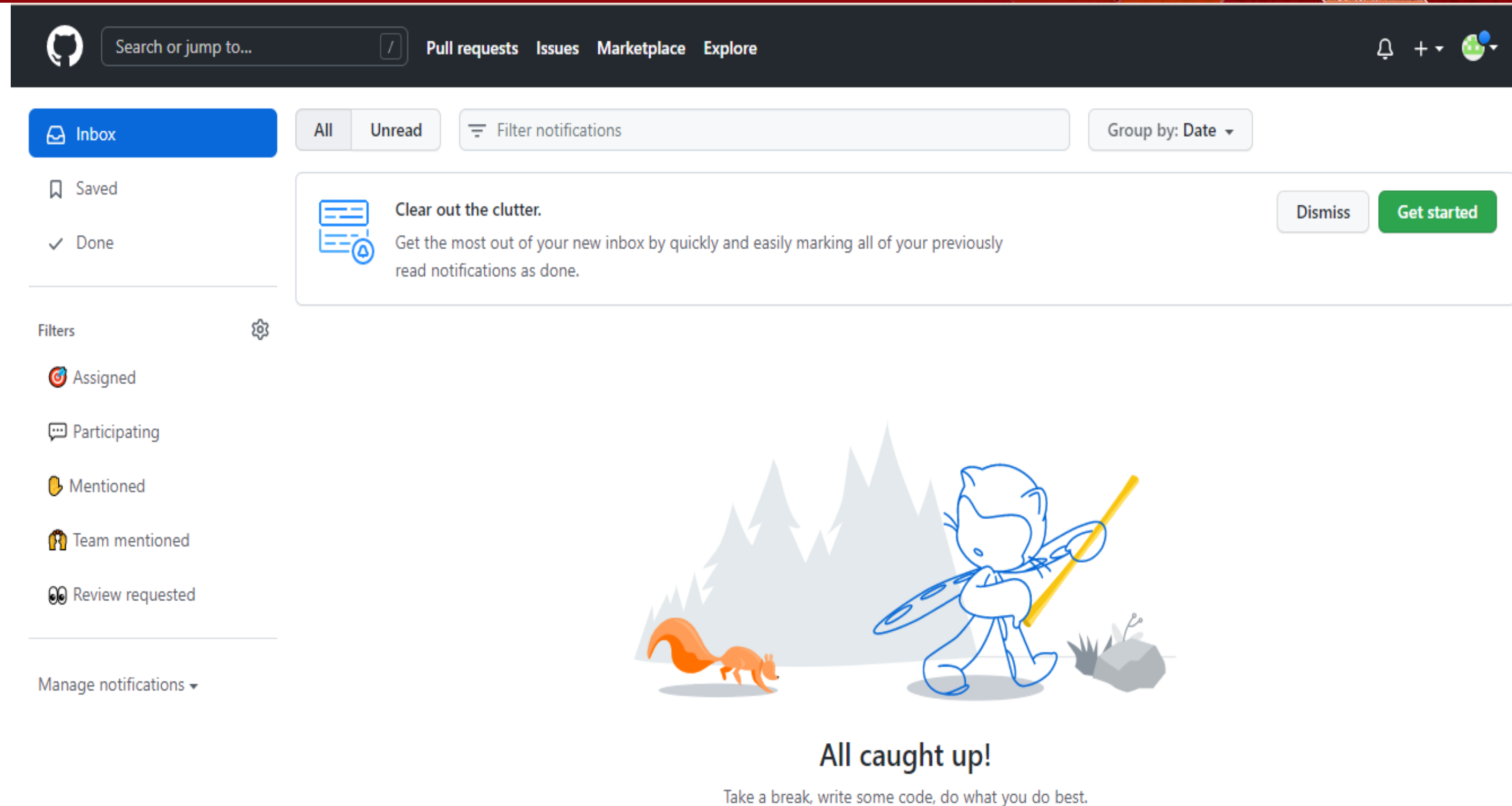
[Import repository](#)



# GitHub – Bell Icon

- Bell Icon

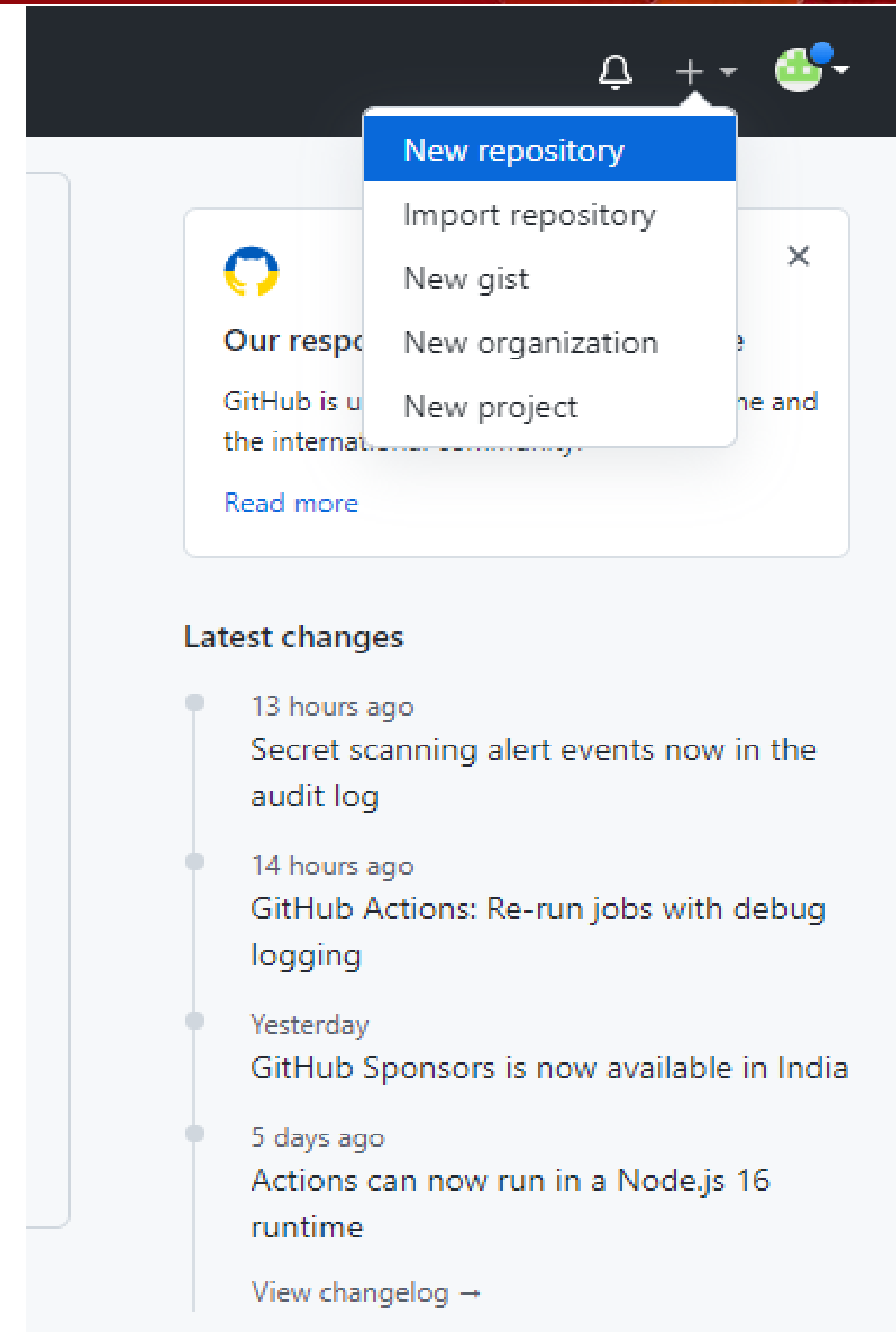
- Inbox
- All
- Unread
- Notifications
- Saved
- Filters



You can explore everything in this page by yourself

# GitHub – Main Page

- Under + icon
  - 5 drop down options are available
  - New Repository
  - Import Repository
  - New gist
  - New Organization
  - New Project





# GitHub – Main Page

- **Repository**

- Place where you create files for your project
- Basically, a storage folder on the cloud for your work
- Repository can directly interact with **Git**

- **New Repository**

- Allows you to make a repository to a GitHub account
- **Git** helps in pushing or uploading the local files on your PC to **GitHub** account

- **New Project**

- Place to track issues, features, or any other work related to the code stored with in a repository.
- Assign tasks to others

# GitHub – Create Repository



Search or jump to...



[Pull requests](#)

[Issues](#)

[Marketplace](#)

[Explore](#)



## Create a new repository

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

[Import a repository.](#)

Owner \*



akgundu



Repository name \*

pythongit



Great repository names are short and memorable. Need inspiration? How about [reimagined-rotary-phone?](#)

Description (optional)

This is an example [github](#) code file



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:

Skip this step if you're importing an existing repository.



Add a README file

This is where you can write a long description for your project. [Learn more.](#)

# GitHub – Create 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:

Skip this step if you're importing an existing repository.

☐ **Add a README file**

This is where you can write a long description for your project. [Learn more.](#)

**Add .gitignore**

Choose which files not to track from a list of templates. [Learn more.](#)

.gitignore template: None ▼

**Choose a license**

A license tells others what they can and can't do with your code. [Learn more.](#)

License: None ▼

 You are creating a public repository in your personal account.

Create repository



# GitHub – Download Repository

Search or jump to... Pull requests Issues Marketplace Explore

akgundu / pythongit Public

Pin

Unwatch 1

Fork 0

Star 0

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

main 1 branch 0 tags

Go to file

Add file

Code

About

Demo repository

Readme

0 stars

1 watching

0 forks

Releases

No releases published  
[Create a new release](#)

Packages

No packages published  
[Publish your first package](#)

akgundu Initial commit

README.md

Initial commit

README.md

## pythongit

Demo repository

Clone

HTTPS SSH GitHub CLI

```
gh repo clone akgundu/pythongit
```

Work fast with our official CLI. [Learn more.](#)

Open with GitHub Desktop

Download ZIP

# GitHub –Repository - README



Search or jump to...



Pull requests

Issues

Marketplace

Explore



akgundu / pythongit Public

Pin

Unwatch 1

Fork 0

Star 0

Code

Issues

Pull requests

Actions

Projects

Wiki

Security

Insights

Settings

main

pythongit / README.md

Go to file

...

akgundu Update README.md

Latest commit a72968d 8 minutes ago History

1 contributor

3 lines (3 sloc) 125 Bytes

<>



Raw

Blame

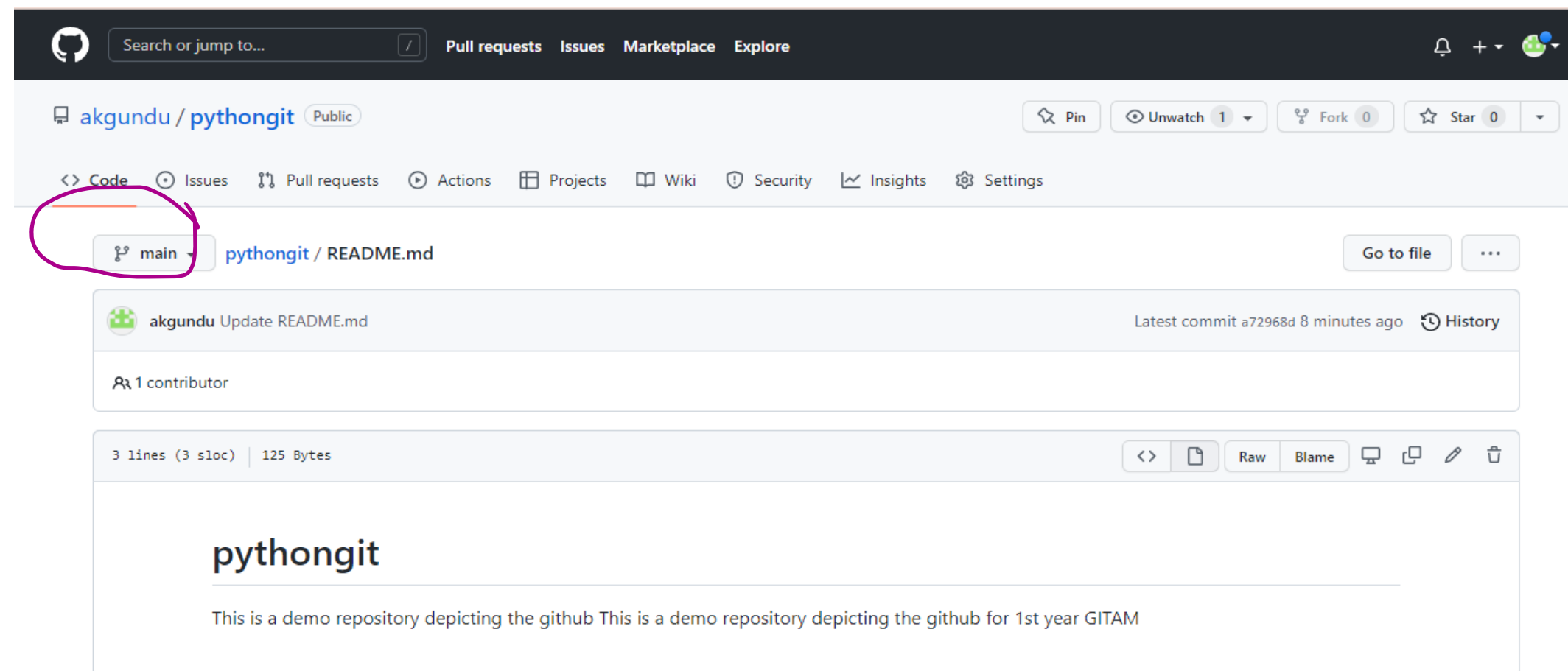
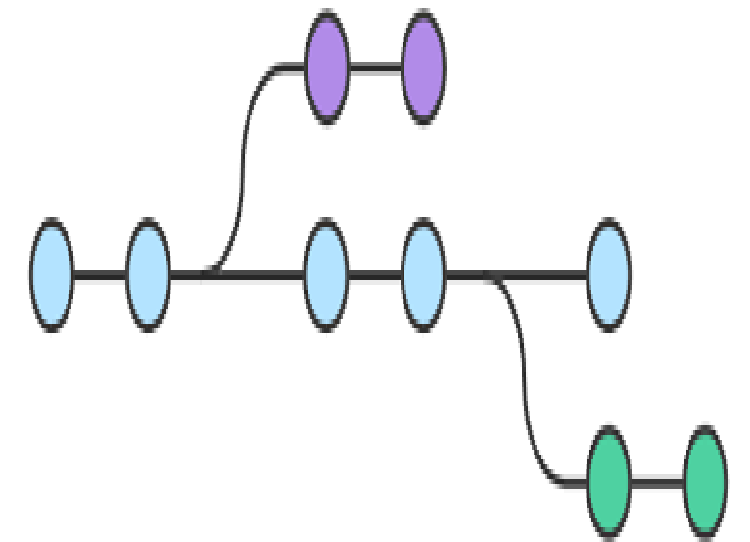


## pythongit

This is a demo repository depicting the github This is a demo repository depicting the github for 1st year GITAM

# GitHub – Create a branch

- Branch
  - Branch allows you to create a little part of main project
  - Can be included with main branch
  - Main branch – all the branches can be merged
- Create a Branch





# GitHub – Create a branch



Search or jump to...



[Pull requests](#)

[Issues](#)

[Marketplace](#)

[Explore](#)



[akgundu](#) / [pythongit](#) Public

Pin

Unwatch 1

Fork 0

Star 0

[Code](#)

[Issues](#)

[Pull requests](#)

[Actions](#)

[Projects](#)

[Wiki](#)

[Security](#)

[Insights](#)

[Settings](#)

main

1 branch

0 tags

[Go to file](#)

[Add file](#)

[Code](#)

About



This is a demo repository depicting the github

Readme

0 stars

1 watching

0 forks

Releases

No releases published  
[Create a new release](#)

Packages

No packages published  
[Publish your first package](#)

Switch branches/tags



Find or create a branch...

Branches

Tags

✓ main

default

[View all branches](#)

## pythongit

This is a demo repository depicting the github This is a demo repository depicting the github for 1st year GITAM

a72968d 16 minutes ago 2 commits

Update README.md

16 minutes ago

# GitHub – Create a branch

The screenshot shows the GitHub interface for the repository 'akgundu / pythongit'. At the top, a dark navigation bar contains the GitHub logo, a search bar, and links for 'Pull requests', 'Issues', 'Marketplace', and 'Explore'. A light blue banner at the top left states 'Branch created.' with a green underline. Below this, the repository name 'akgundu / pythongit' is shown with a 'Public' badge. To the right are buttons for 'Pin', 'Unwatch' (1), 'Fork' (0), and 'Star' (0). A secondary navigation bar includes links for 'Code', 'Issues', 'Pull requests', 'Actions', 'Projects', 'Wiki', 'Security', 'Insights', and 'Settings'. The 'Code' tab is active, showing a dropdown menu with 'branch1' selected, '2 branches', and '0 tags'. A green underline is under 'branch1', and a purple circle highlights the '2 branches' and '0 tags' text. Below the dropdown, a message states 'This branch is up to date with main.' To the right are buttons for 'Go to file', 'Add file', and 'Code'. The 'About' section on the right describes the repository as a demo. Below the dropdown, a commit history table shows a commit by 'akgundu' titled 'Update README.md' with commit hash 'a72968d', made '18 minutes ago', and having '2 commits'. Below the commit, a file list shows 'README.md' with the action 'Update README.md' taken '18 minutes ago'. The main content area displays the 'README.md' file content, which includes the repository name 'pythongit' and a description: 'This is a demo repository depicting the github This is a demo repository depicting the github for 1st year GITAM'. Handwritten purple text 'exact replica' and green text 'main' are overlaid on the README content. The right sidebar shows the 'About' section with repository statistics: 'This is a demo repository depicting the github', '0 stars', '1 watching', and '0 forks'. Below this is the 'Releases' section, which states 'No releases published' and provides a link to 'Create a new release'.

Branch created.

akgundu / pythongit Public

Pin Unwatch 1 Fork 0 Star 0

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

branch1 2 branches 0 tags

This branch is up to date with main.

Go to file Add file Code

About

This is a demo repository depicting the github

Readme 0 stars 1 watching 0 forks

Releases

No releases published  
Create a new release

akgundu Update README.md a72968d 18 minutes ago 2 commits

README.md Update README.md 18 minutes ago

README.md

pythongit

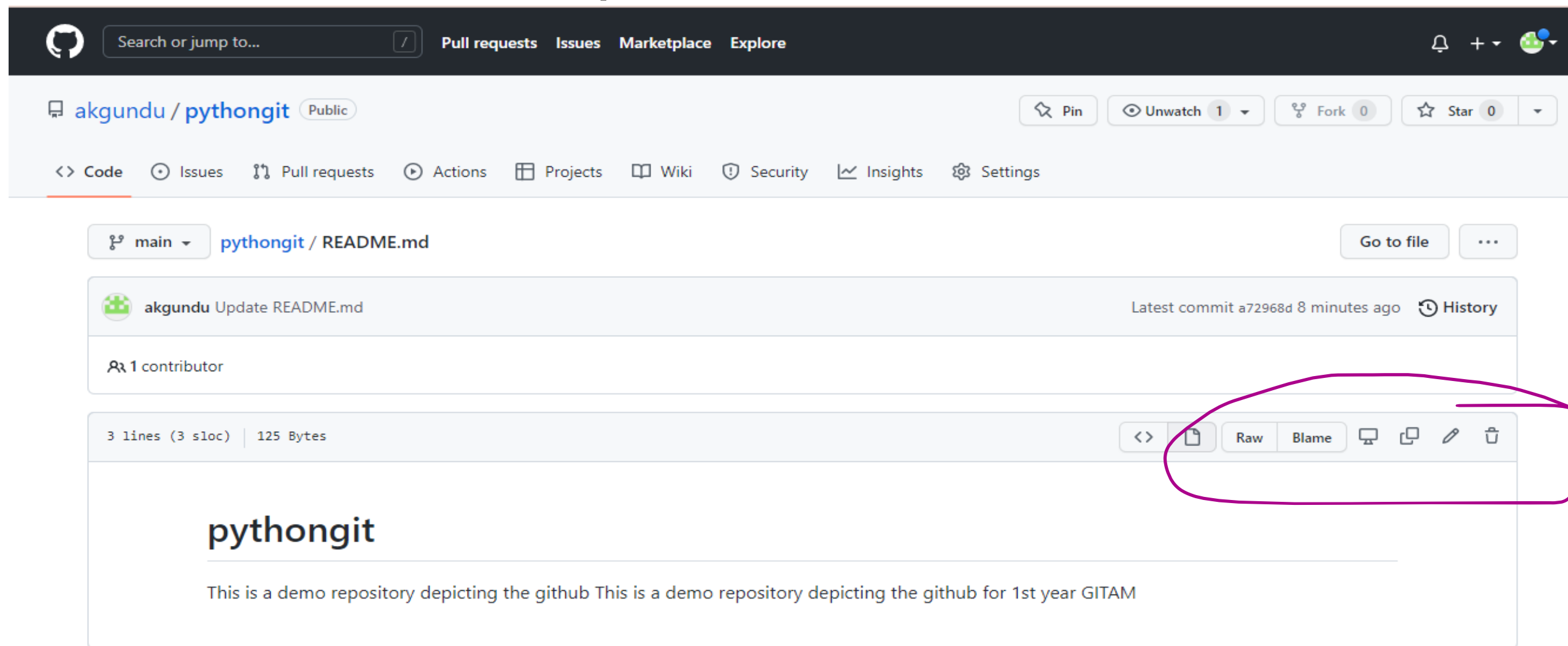
This is a demo repository depicting the github This is a demo repository depicting the github for 1st year GITAM

exact replica main

# GitHub – COMMIT

- COMMIT

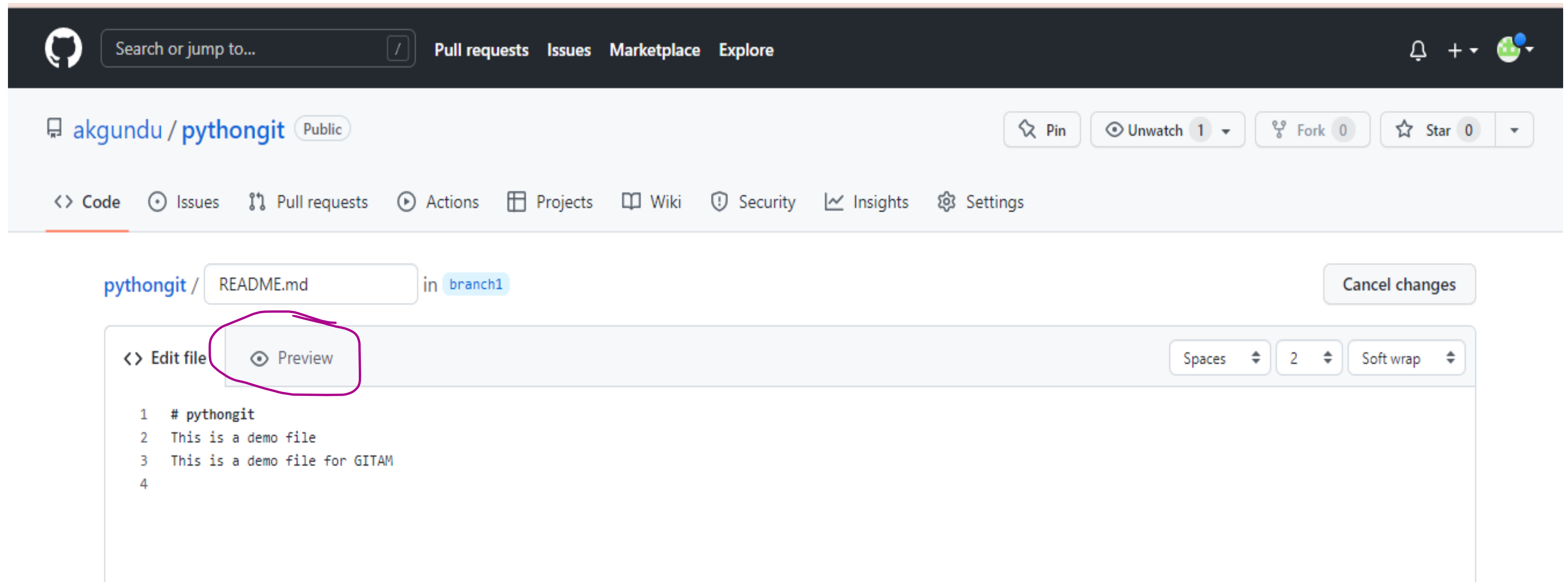
- Records changes made in a file of a branch(s)
- Assigned with unique ID
- Identified with a unique ID





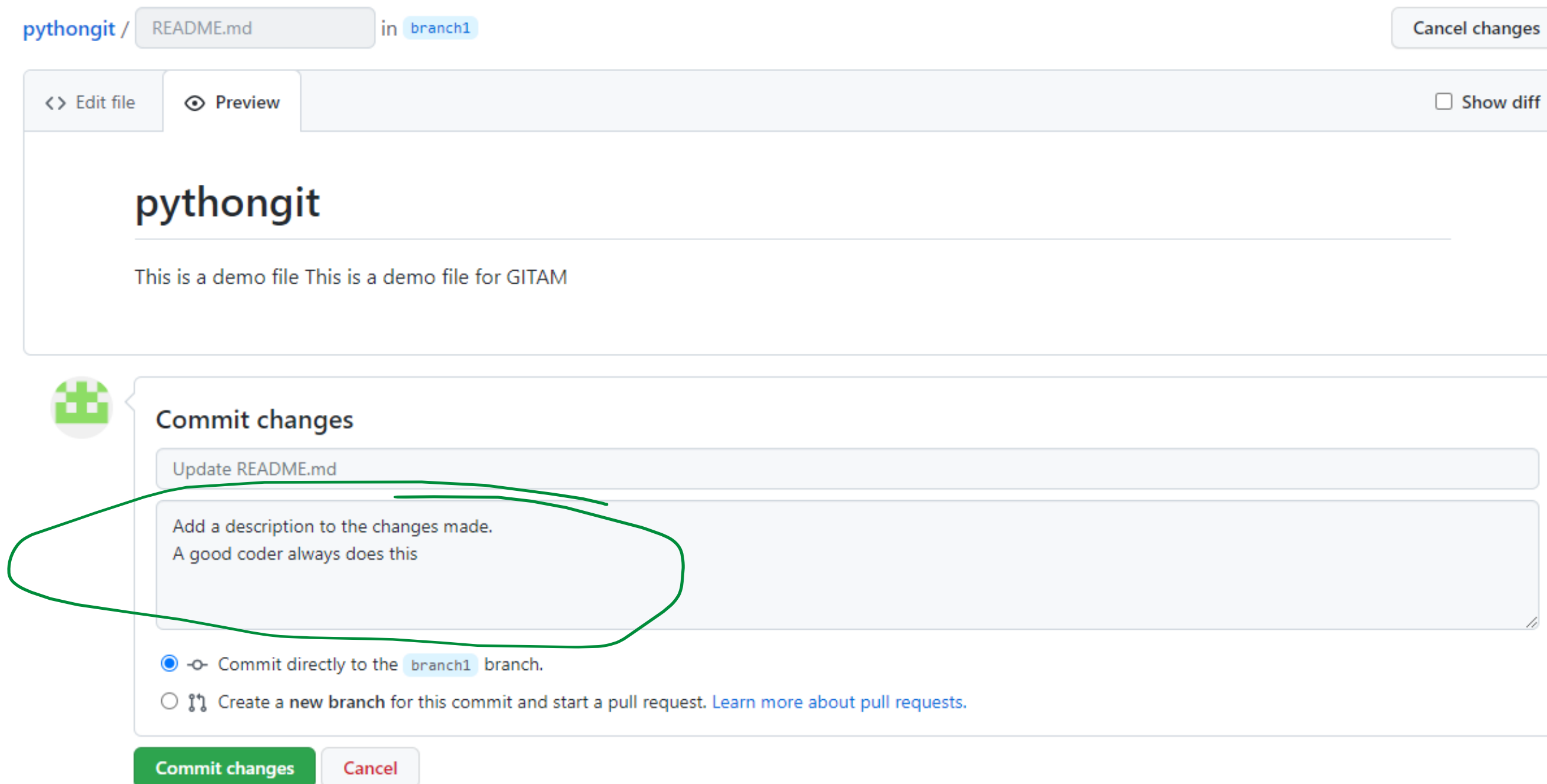
# GitHub – COMMIT & Preview

- Preview
  - Displays the changes made and can be observed



# GitHub – COMMIT & Preview

- Preview
  - Displays the changes made and can be observed




The screenshot shows the GitHub web interface for committing changes. At the top, the breadcrumb navigation shows 'pythongit / README.md' and 'in branch1'. A 'Cancel changes' button is in the top right. Below the navigation, there are two tabs: 'Edit file' and 'Preview', with the 'Preview' tab selected. To the right of the tabs is a checkbox labeled 'Show diff'. The main content area displays the preview of the README.md file, which contains the text 'pythongit' followed by 'This is a demo file This is a demo file for GITAM'. Below the preview, there is a 'Commit changes' section. It features a green checkmark icon and a title 'Commit changes'. Underneath, there is a text input field containing 'Update README.md'. Below the input field is a larger text area with the placeholder text 'Add a description to the changes made. A good coder always does this'. This text area is circled in green. At the bottom of the 'Commit changes' section, there are two radio button options: the first is selected and labeled 'Commit directly to the branch1 branch.', and the second is labeled 'Create a new branch for this commit and start a pull request. Learn more about pull requests.' At the very bottom, there are two buttons: 'Commit changes' (green) and 'Cancel' (grey).

pythongit / README.md in branch1 Cancel changes

<> Edit file Preview Show diff

pythongit

This is a demo file This is a demo file for GITAM

 Commit changes

Update README.md

Add a description to the changes made.  
A good coder always does this

☒ Commit directly to the branch1 branch.

☐ Create a new branch for this commit and start a pull request. [Learn more about pull requests.](#)

Commit changes Cancel

# GitHub – COMMIT & Preview

- Commit Changes
  - Add a description

Attach files by dragging & dropping, selecting or pasting them.



## Commit changes

Update README.md

Add a description to the changes made.  
A good coder always does this

- ☒ Commit directly to the `branch1` branch.
- ☐ Create a new branch for this commit and start a pull request. [Learn more about pull requests.](#)

Commit changes

Cancel




# Compare main branch and branch 1




This screenshot shows the GitHub repository 'pythongit' by user 'akgundu'. The 'main' branch is selected in the branch dropdown menu, which is circled in green. A yellow banner at the top indicates 'branch1 had recent pushes 1 minute ago' with a 'Compare & pull request' button. The repository details show an initial commit by 'akgundu' 15 minutes ago. The README file is visible, containing the text 'pythongit' and 'This is a demo file', with the latter underlined in purple.


This screenshot shows the same GitHub repository 'pythongit' but with 'branch1' selected in the branch dropdown menu, also circled in green. The yellow banner now states 'branch1 had recent pushes 3 minutes ago'. Below the banner, it indicates 'This branch is 1 commit ahead of main.' and shows a commit history for 'akgundu' updating 'README.md' 3 minutes ago. The README content is 'pythongit' followed by 'This is a demo file This is a demo file for GITAM', with the second sentence underlined in purple. The right sidebar shows repository statistics and options for releases and packages.





# Compare main branch and branch 1



[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)

 [akgundu / pythongit](#) Public


 [Pin](#)  [Unwatch](#) 1  [Fork](#) 0  [Star](#) 0

[Code](#) [Issues](#) [Pull requests](#) [Actions](#) [Projects](#) [Wiki](#) [Security](#) [Insights](#) [Settings](#)


History for [pythongit](#) / README.md

Commits on May 25, 2022




Update README.md

 akgundu committed 5 minutes ago




Initial commit

 akgundu committed 18 minutes ago

Verified

 4407772  

Verified

 4e0f911  

[Newer](#) [Older](#)

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# GitHub – Open & Merge Pull Request

- Pull Request and Merge
  - A piece of work can be compared and merged with the collaborated

The screenshot shows the GitHub interface for a repository named 'pythongit' by user 'akgundu'. The repository is public. The 'Pull requests' tab is selected in the navigation bar. A yellow banner at the top indicates that 'branch1' had recent pushes 10 minutes ago, with a 'Compare & pull request' button. Below this, the repository's main branch is 'main', with 2 branches and 0 tags. A commit by 'akgundu' is shown, titled 'Initial commit', with a commit hash of '4e0f911' and a timestamp of '23 minutes ago'. The commit message is 'Initial commit'. The file 'README.md' is listed as part of the commit. The README content is visible, showing the repository name 'pythongit' and the text 'This is a demo file'. On the right side, the 'About' section shows 'This is a demo file' and statistics: 0 stars, 1 watching, and 0 forks. The 'Releases' section shows 'No releases published' and a link to 'Create a new release'. The 'Packages' section shows 'No packages published' and a link to 'Publish your first package'.

Search or jump to... Pull requests Issues Marketplace Explore

akgundu / pythongit Public

Pin Unwatch 1 Fork 0 Star 0

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

branch1 had recent pushes 10 minutes ago Compare & pull request

main 2 branches 0 tags Go to file Add file Code

akgundu Initial commit 4e0f911 23 minutes ago 1 commit

README.md Initial commit 23 minutes ago

README.md

pythongit

This is a demo file

About This is a demo file

Readme 0 stars 1 watching 0 forks

Releases No releases published Create a new release

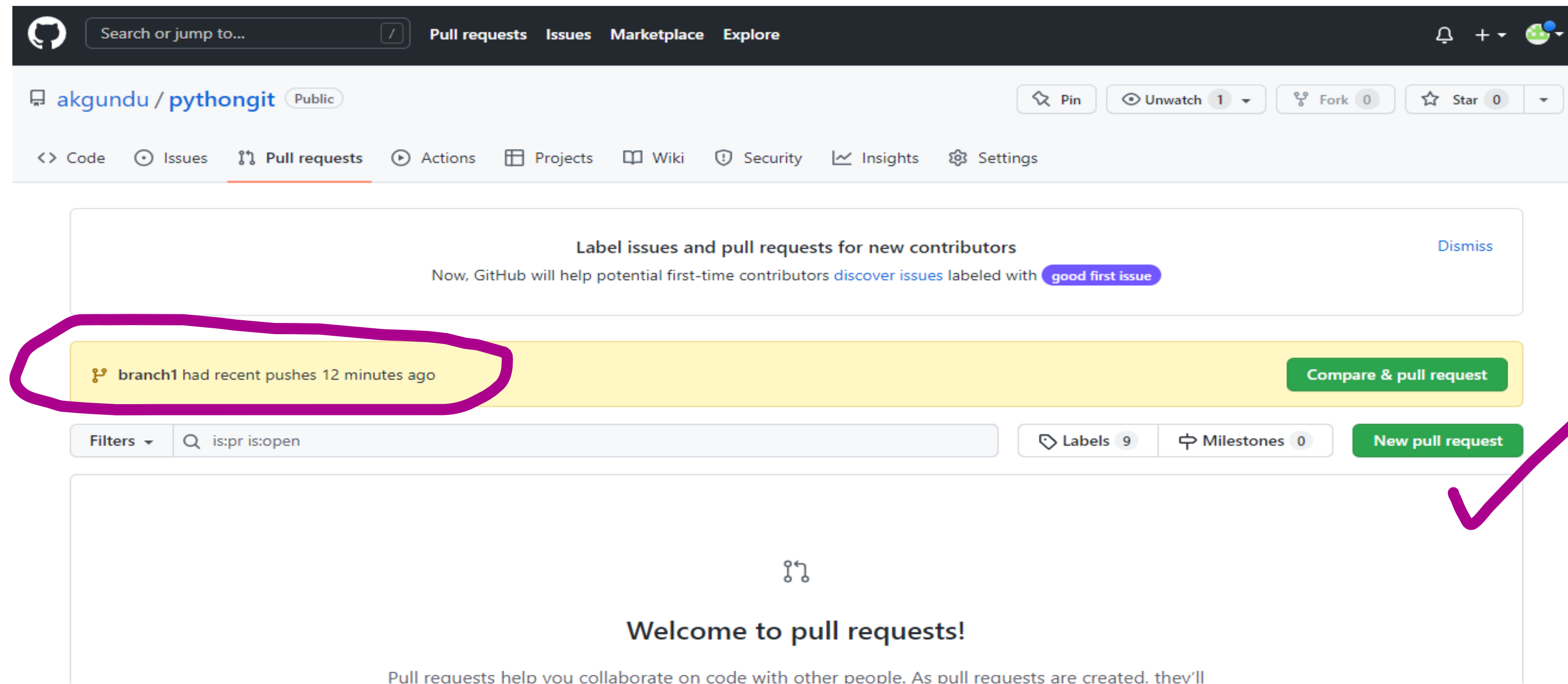
Packages No packages published Publish your first package

github.com/akgundu/pythongit/pulls



# GitHub – Open & Merge Pull Request

- Pull Request and Merge
  - A piece of work can be compared and merged with the collaborated



# GitHub – Open & Merge Pull Request

- Pull Request and Merge
  - A piece of work can be compared and merged with the collaborated

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

## Compare changes

Compare changes across branches, commits, tags, and more below. If you need to, you can also [compare across forks](#).

base: main ← compare: main

Choose different branches or forks above to discuss and review changes. [Learn about pull requests](#) [Create pull request](#)

### Compare and review just about anything

Branches, tags, commit ranges, and time ranges. In the same repository and across forks.

Example comparisons	
<a href="#">branch1</a>	13 minutes ago
<a href="#">main@{1day}...main</a>	24 hours ago

# GitHub – Open & Merge Pull Request

<> Code Issues Pull requests Actions Projects Wiki Security Insights Settings

## Comparing changes

Choose two branches to see what's changed or to start a new pull request. If you need to, you can also [compare across forks](#).

base: main ← compare: branch1 ✓ **Able to merge.** These branches can be automatically merged.

Discuss and review the changes in this comparison with others. [Learn about pull requests](#)

Create pull request

1 commit

1 file changed

1 contributor

Commits on May 25, 2022

Update README.md  
akgundu committed 14 minutes ago

Verified



4407772



Showing 1 changed file with 1 addition and 0 deletions

Split

Unified

1 README.md



@@ -1,2 +1,3 @@

1 1 # pythongit



# GitHub – Open & Merge Pull Request

Commits on May 25, 2022

Update README.md ...

akgundu committed 19 minutes ago

Verified



4407772



Update README.md

akgundu committed 1 minute ago

Verified



a8f8218



Update README.md ...

akgundu committed 1 minute ago

Verified



49bdc93



Showing 1 changed file with 3 additions and 1 deletion.

Split

Unified

4 README.md



@@ -1,2 +1,4 @@

1 1 # pythongit

2 - This is a demo file

2 + This is a demo file.

3 + This is a demo file for GitHub teaching at GITAM.

4 + First commit



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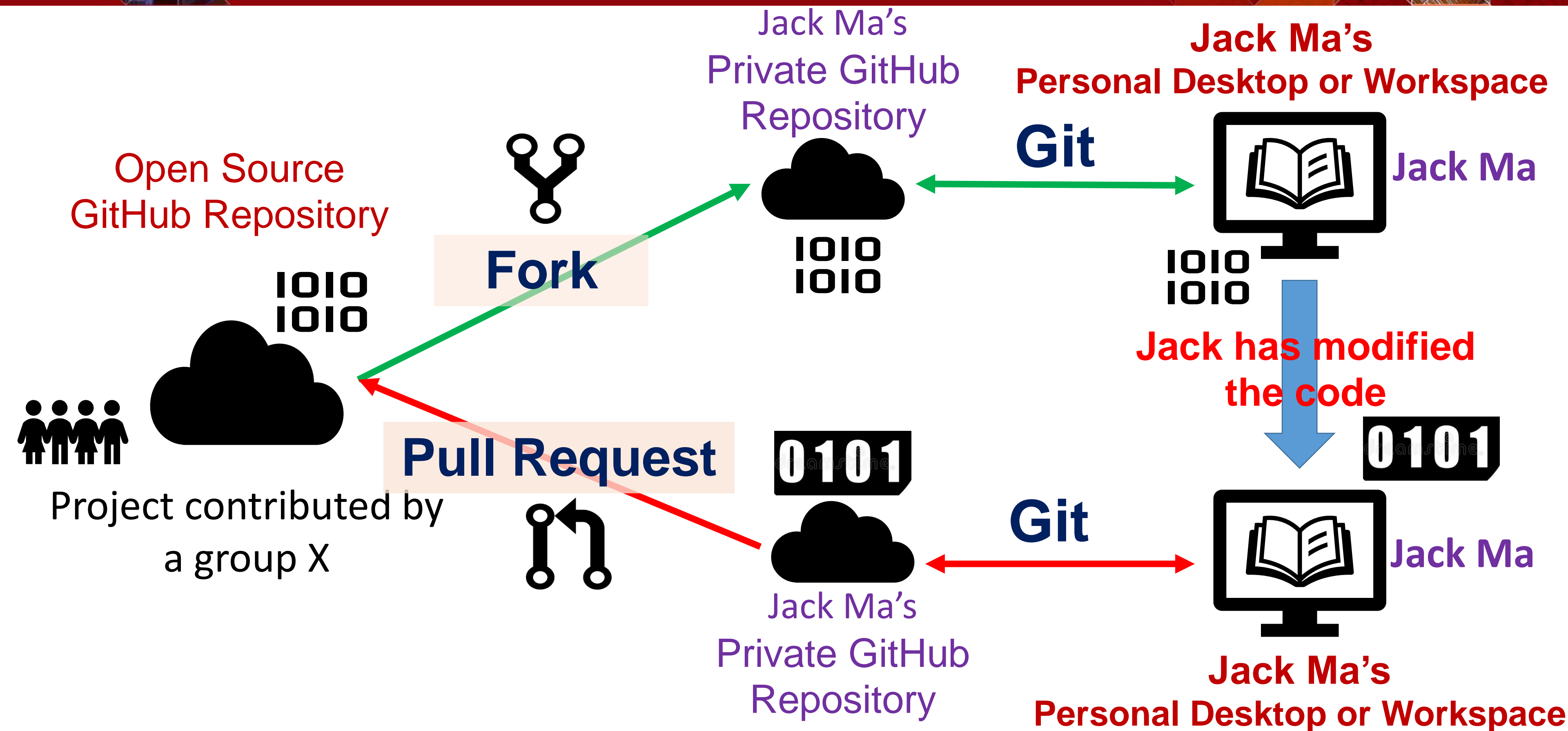
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# GitHub – Fork & Pull Request



# GitHub – Add Contributors

<> Code Issues Pull requests Actions Projects Wiki Security Insights **Settings**

General

Access

**Collaborators**

Moderation options

Code and automation

Branches

Tags

Actions

Webhooks

Environments

Pages

Security

Code security and analysis

Deploy keys

Secrets

## Who has access

PUBLIC REPOSITORY



This repository is public and visible to anyone.

[Manage](#)

DIRECT ACCESS



0 collaborators have access to this repository. Only you can contribute to this repository.

## Manage access



You haven't invited any collaborators yet

[Add people](#)





Thank You