



UTM
UNIVERSITI TEKNOLOGI MALAYSIA



MODULE 5 : WORKING WITH GIT & GITHUB (COLLABORATIVE REPOSITORY)

PREPARED BY:

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Universiti Teknologi Malaysia



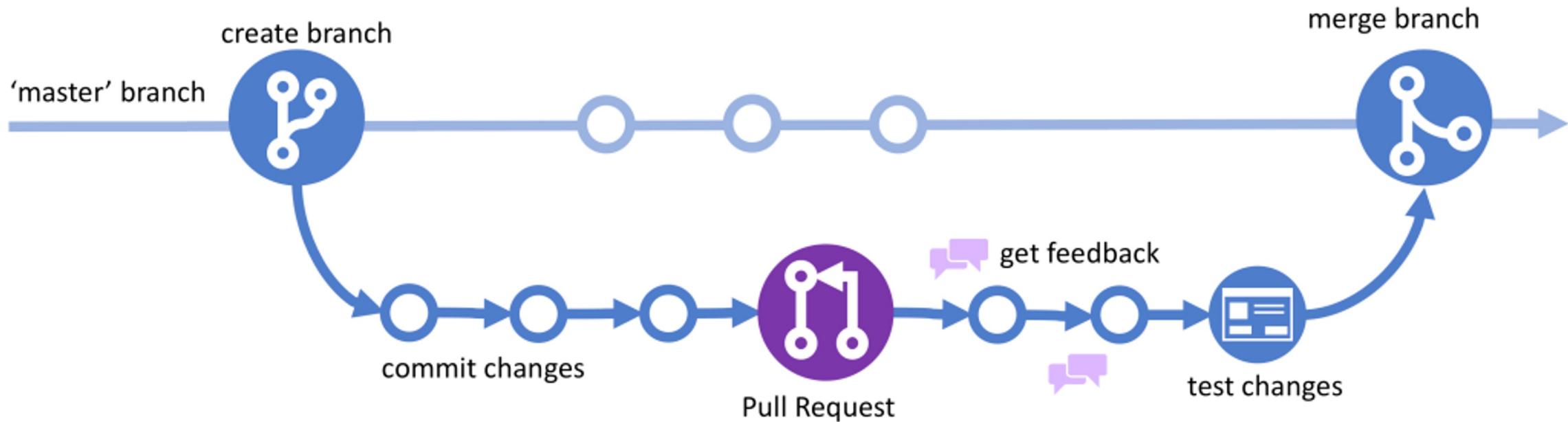
Working with Git & GitHub

(Collaboration Repo.)

1. Collaborative Workflow
2. Creating a Collaborative Repository
3. Create Branch and Making File Changes
4. Committing and Pushing Changes
5. Reviewing and Merging Pull Requests
6. Merging and Closing Pull Requests
7. Synchronizing with the Main Branch

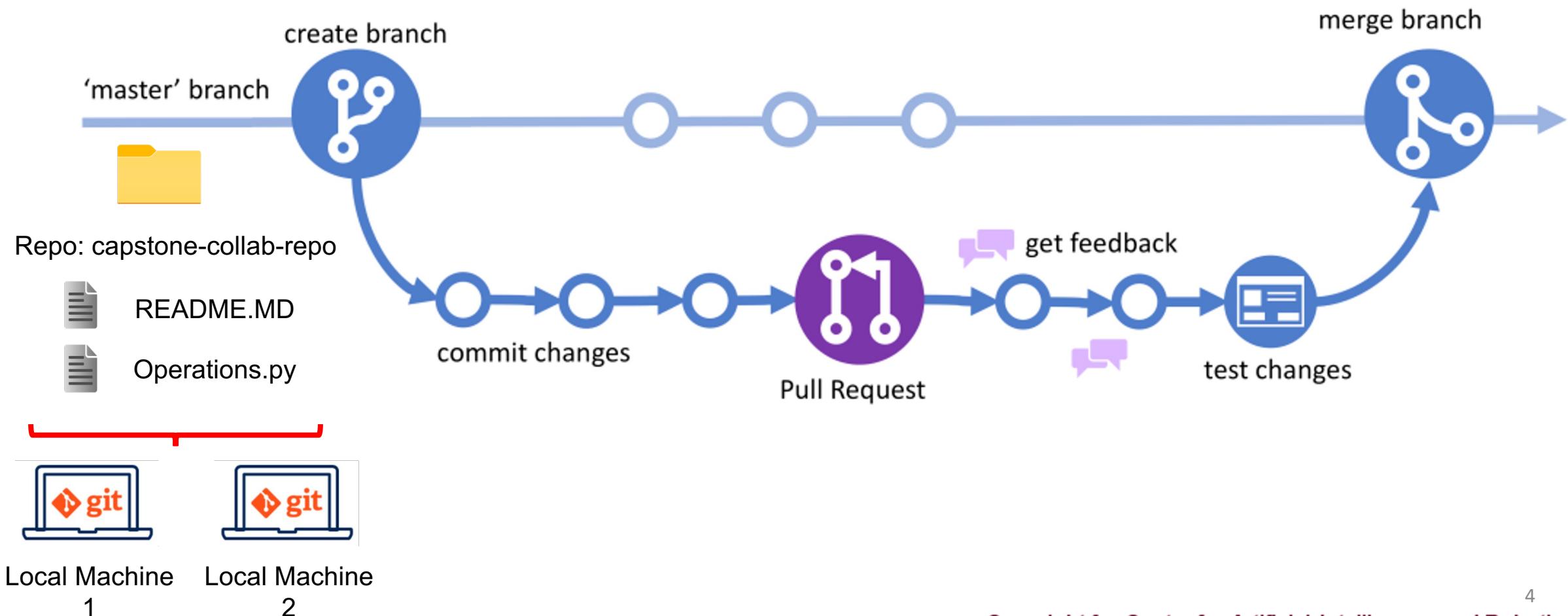
1. Collaborative Workflow

GitHub Flow



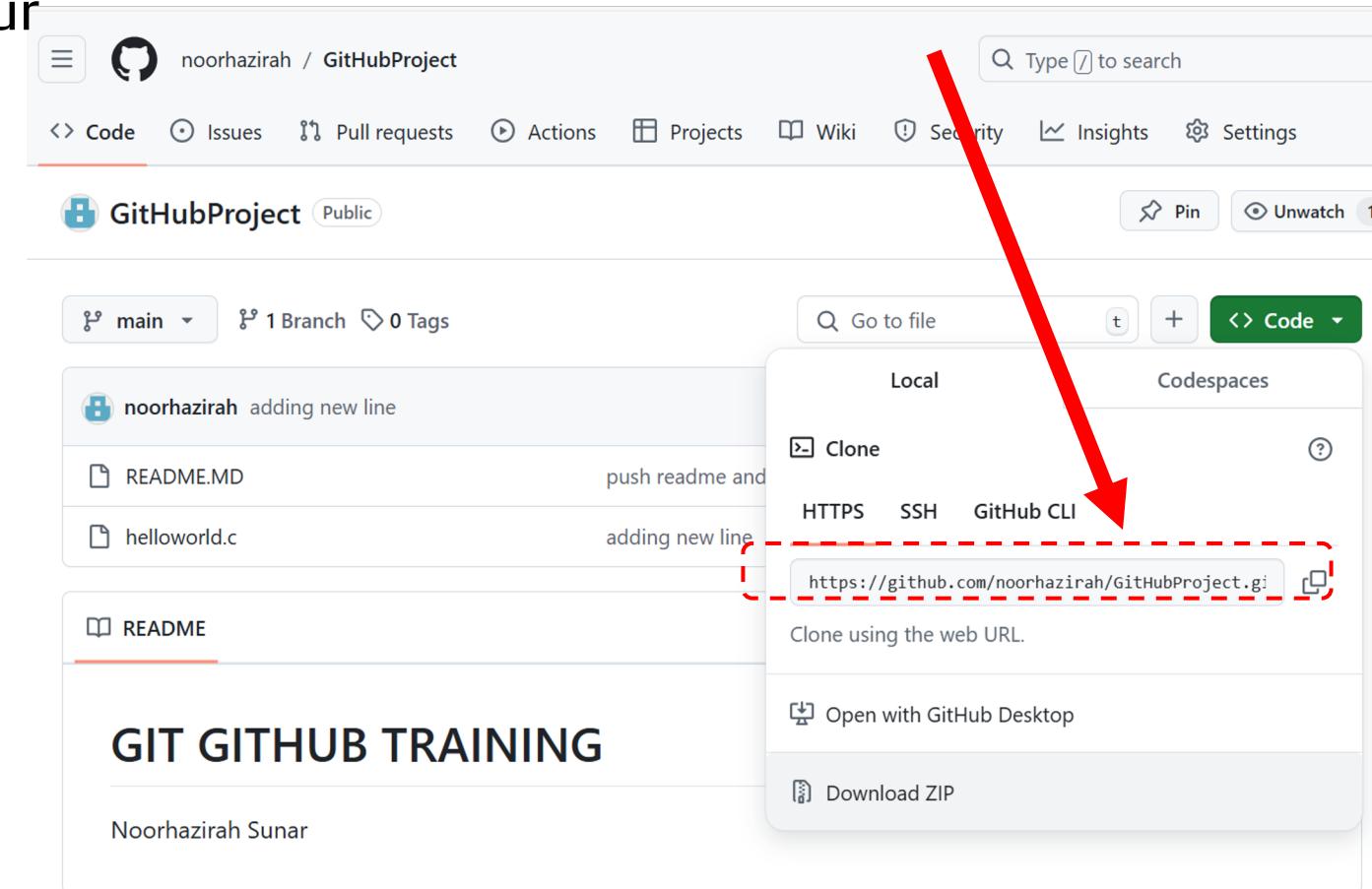
2. Creating Collaborative Repository

GitHub Flow



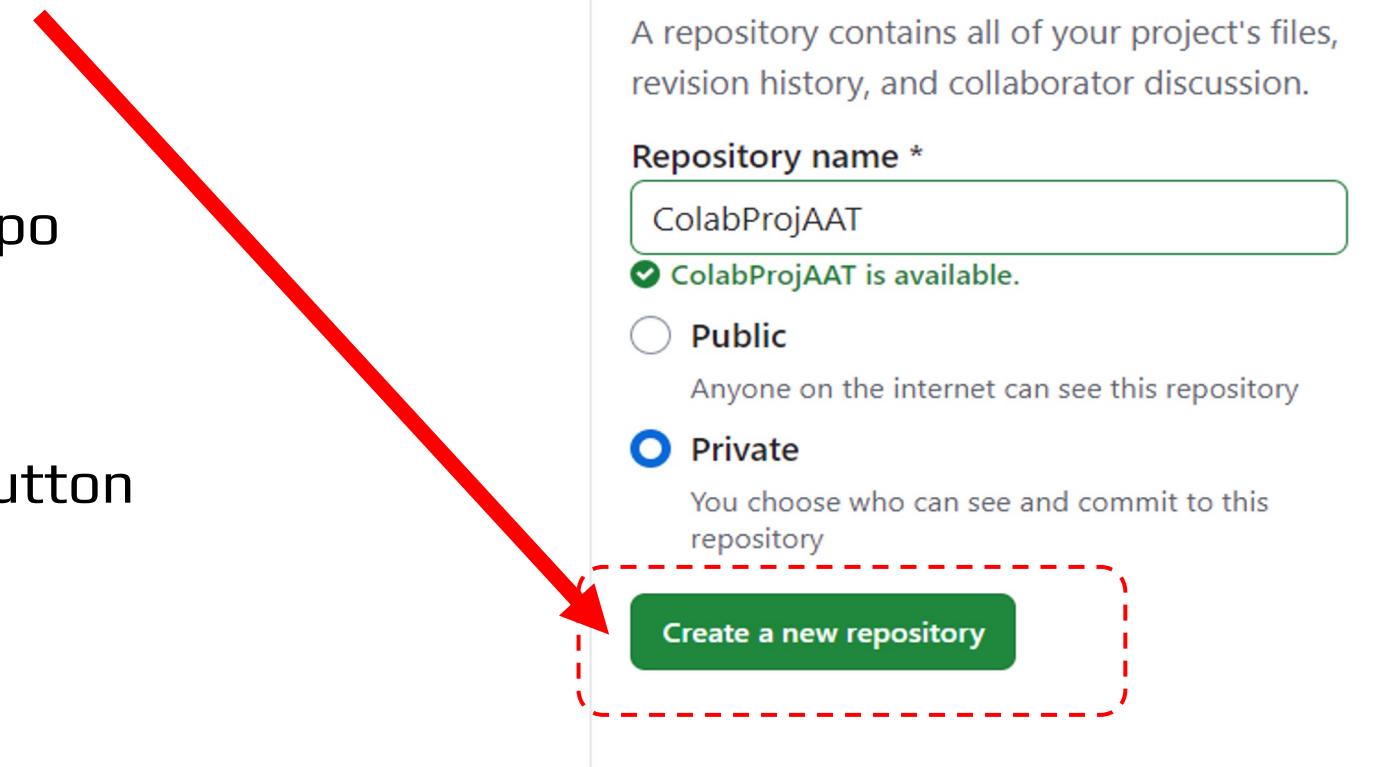
2. Creating Collaborative Repository (Public)

1. Open command prompt, point to your working directory (i.e: cd desktop)
2. Clone the repository git clone [url repository]



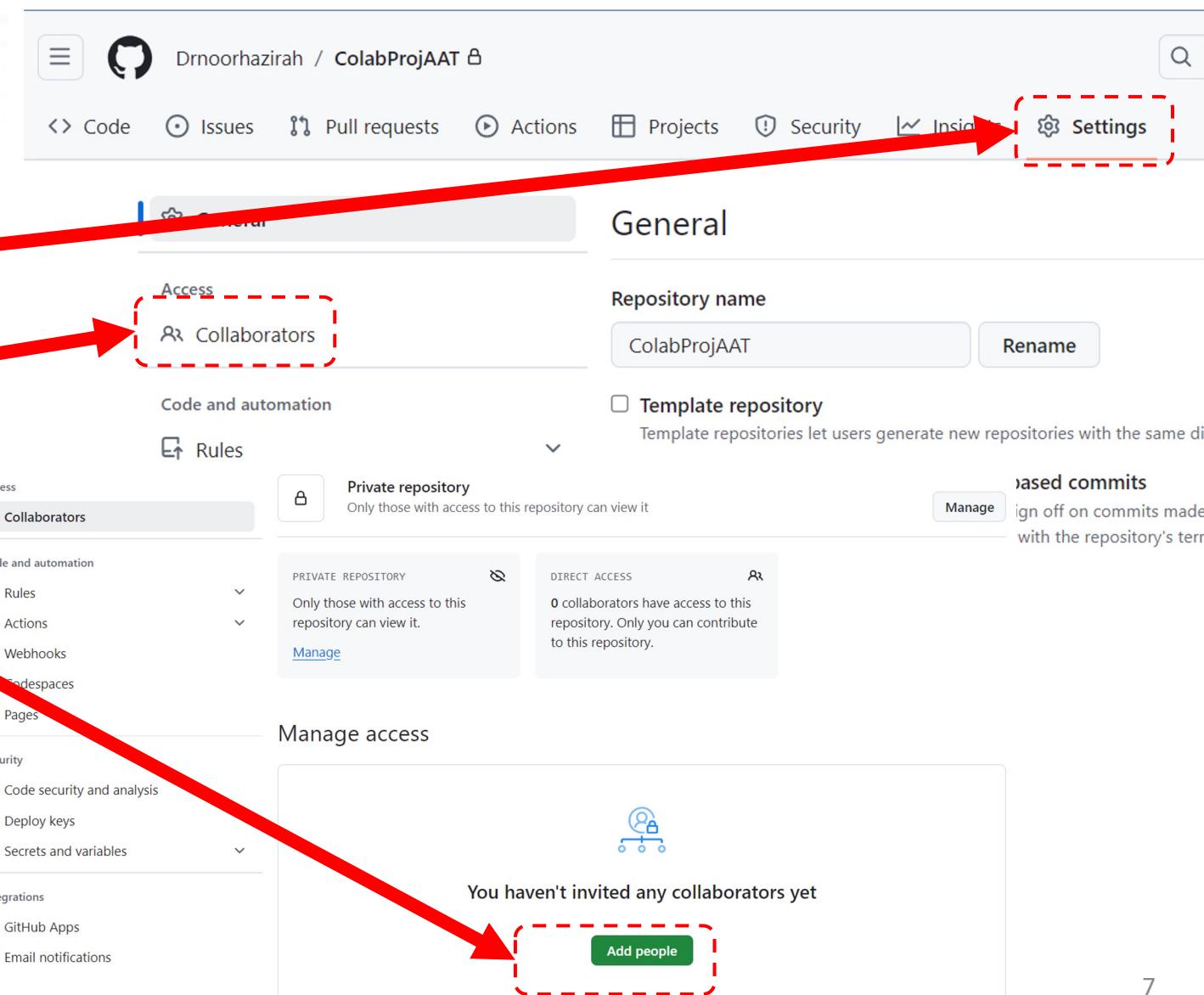
2. Creating a Collaborative Repository (Private)

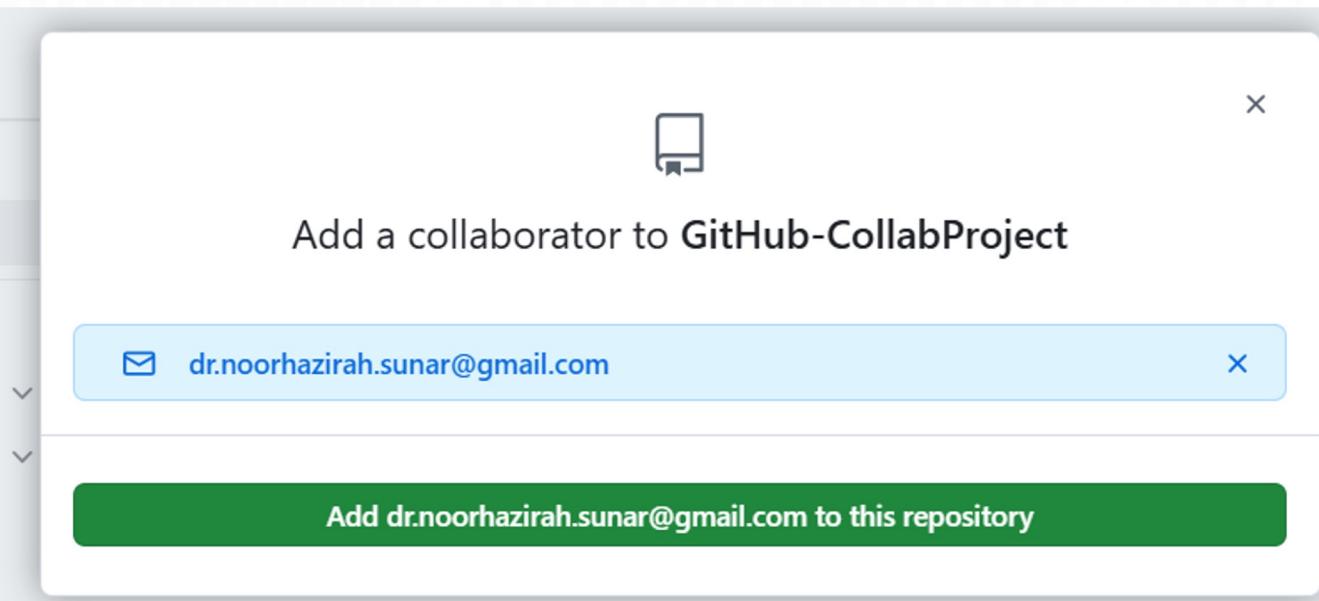
1. Go to GitHub account
2. Create new repo
3. Provide a name for your repo
4. Choose for private repo
5. Click “create repository” button



2. Creating a Collaborative Repository (Private)

1. To add collaborators,
go to “settings” and
select “Collaborators”
2. Click “Add people”,
invite by search their
GitHub username, full
name or email





Manage access

[Add people](#)

Select all Type ▾

Find a collaborator...

<input type="checkbox"/>	 Drnoorhazirah	Awaiting Drnoorhazirah's response	Pending Invite <input type="button"/>	<input type="button"/>
--------------------------	---	-----------------------------------	---------------------------------------	------------------------

| + - ○ ⓘ ⓘ ⚡

All

Unread

Search notifications

Group by: Date



Clear out the clutter.

Get the most out of your new inbox by quickly and easily marking all of your previously read notifications as done.

Dismiss

Get started

 Select all norhazirah/GitHub-CollabProject

Invitation to join norhazirah/GitHub-CollabProject from norhazirah

subscribed



2 minutes ago

ProTip! When viewing a notification, press e to mark it as Done.

1-1 of 1

Prev

Next

Repositories



norhazirah/GitHub-CollabProject



Drnoorhazirah/ColabProjAAT



Drnoorhazirah/GitHubProjAAT



+

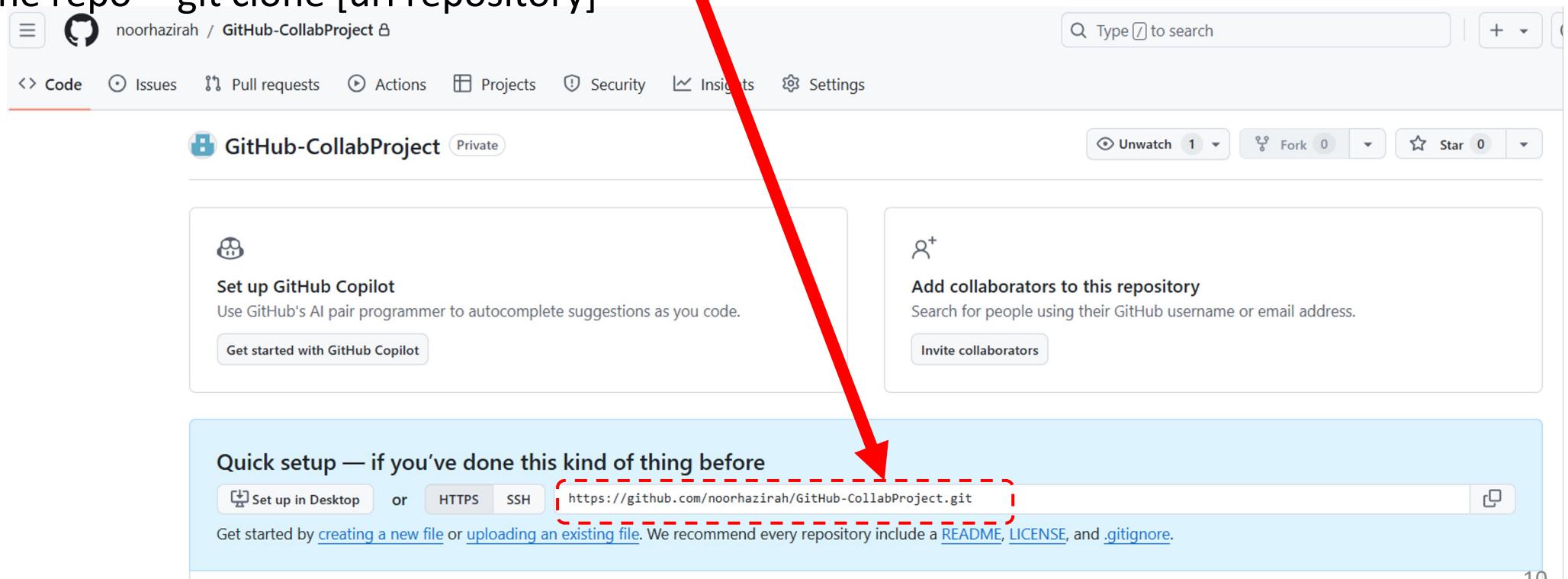
[norhazirah](#) invited you to collaborate[Accept invitation](#)[Decline](#)

Owners of GitHub-CollabProject will be able to see:

- Your public profile information
- Certain activity within this repository
- Country of request origin
- Your access level for this repository
- Your IP address

2. Creating a Collaborative Repository (Private)

1. Collaborators can clone the repo to their local machine
2. Open command prompt, point to your working directory (i.e cd desktop)
3. Clone the repo -- `git clone [url repository]`

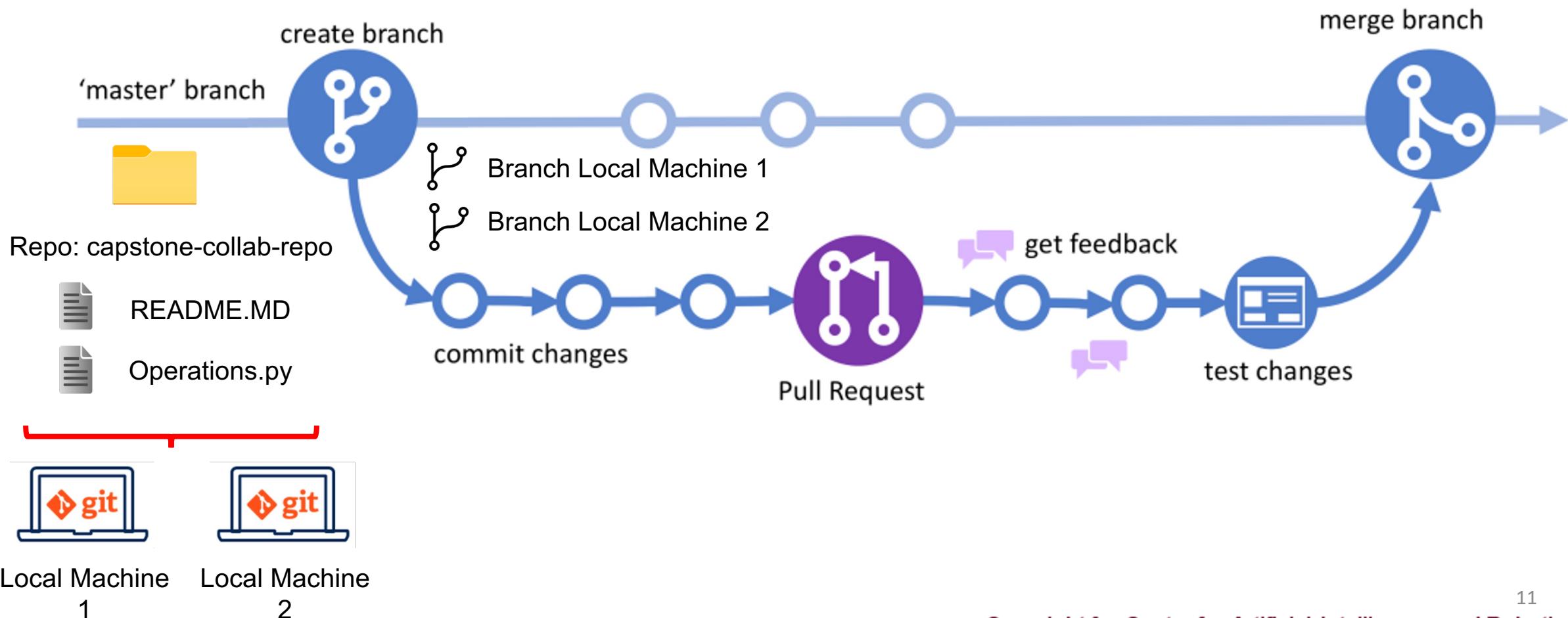


3. Create Branch & Make File Changes

GitHub Flow

Collaborators Task:

1. Local Machine 1 – Add subtract function in file operations.py
2. Local Machine 2 – Add multiply function in file operations.py



3. Create Branch & Make File Changes

1. To create a branch, go back to your command prompt (make sure still inside correct working directory).

2. Type - **git branch ["branch-name"]**

3. Check branch created or not by typing **git branch** in your command prompt

4. You will see there are 2 available branches (main and your created branch)

```
noorh@NOORHAZIRAH MINGW64 ~/Desktop
$ cd GitHub-CollabProject/

noorh@NOORHAZIRAH MINGW64 ~/Desktop/GitHub-CollabProject (main)
$ git branch azie-branch

noorh@NOORHAZIRAH MINGW64 ~/Desktop/GitHub-CollabProject (main)
$
```

```
noorh@NOORHAZIRAH MINGW64 ~/Desktop/GitHub-CollabProject (main)
$ git branch
  azie-branch
* main
```

5. To switch branch - **git checkout ["your branch name"]**
6. Green color indicates which branch is currently activate

```
noorh@NOORHAZIRAH MINGW64 ~/Desktop/GitHub-CollabProject (main)
$ git checkout azie-branch
Switched to branch 'azie-branch'

noorh@NOORHAZIRAH MINGW64 ~/Desktop/GitHub-CollabProject (azie-branch)
$ git branch
* azie-branch
  main
```

3. Create Branch & Make File Changes

7. Make file changes according to your task
8. For example, Local Machine 1 – need to add function for subtract operation in operations.py file
9. Use Atom (code editor) to make changes and save the file
10. Track status of your file changes - **git status**

```
noorh@NOORHAZIRAH MINGW64 ~/Desktop/GitHub-CollabProject (azie-branch)
$ git status
On branch azie-branch
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
    (modified:   operation.py )
no changes added to commit (use "git add" and/or "git commit -a")
```

11. Commit changes :

> git add [filename]

> git commit -m ["your message"]

> git push

```
noorh@NOORHAZIRAH MINGW64 ~/Desktop/GitHub-CollabProject (azie-branch)
$ git add operation.py

noorh@NOORHAZIRAH MINGW64 ~/Desktop/GitHub-CollabProject (azie-branch)
$ git commit -m "add subtraction function"
[azie-branch f1bf67b] add subtraction function
 1 file changed, 4 insertions(+)
```

```
noorh@NOORHAZIRAH MINGW64 ~/Desktop/GitHub-CollabProject (azie-branch)
$ git push -u origin azie-branch
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 397 bytes | 198.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
remote:
remote: Create a pull request for 'azie-branch' on GitHub by visiting:
remote:     https://github.com/noorhazirah/GitHub-CollabProject/pull/new/azie-branch
remote:
To https://github.com/noorhazirah/GitHub-CollabProject.git
 * [new branch]      azie-branch -> azie-branch
branch 'azie-branch' set up to track 'origin/azie-branch'.
```

3. Create Branch & Make File Changes

 GitHub-CollabProject Private

main 2 Branches 0 Tags

Go to file Add file Code

Switch branches/tags X

Find or create a branch...

Branches Tags

✓ main default

azie-branch

View all branches

THIS IS MY CREATED BRANCH 😊



GitHub-CollabProject

This is my tutorial creating repository on GitHub-CollabProject

3. Create Branch & Make File Changes

[GitHub-CollabProject](#) / operation.py 



Drnoorhazirah add subtraction function

Code

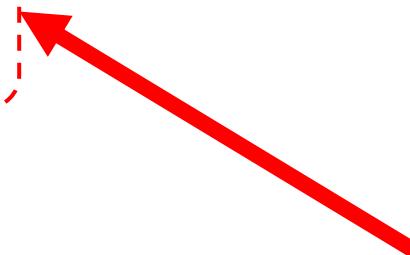
Blame

11 lines (9 loc) · 197 Bytes



Code 55% faster with GitHub Copilot

```
1  def greet():
2      print('Hello World')
3
4  def sub_numbers(num1, num2):
5      sub = num1 - num2
6      print('Subtraction:', sub)
7      # call the function
8
9  greet()
10
11 sub_numbers(9,2)
12
13 print('Outside function')
```



I CAN VIEW CHANGES
IN MY CREATED
BRANCH 😲

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

[Create pull request](#)

-o- 1 commit

± 1 file changed

× 1 contributor

-o- Commits on Sep 16, 2024

add subtraction function

 Drnoorhazirah committed 13 minutes ago

 f1bf67b 

Showing 1 changed file with 4 additions and 0 deletions.

[Split](#) [Unified](#)

4  operation.py 

... @@ -1,7 +1,11 @@

```
1 def greet():
2     print('Hello World')
3
4 # call the function
5 greet()
6
7 print('Outside function')
```

1 def greet():
2 print('Hello World')
3
4 + def sub_numbers(num1, num2):
5 + sub = num1 - num2
6 + print('Subtraction:', sub)
7 # call the function
8 greet()
9 + sub_numbers(9,2)
10
11 print('Outside function')

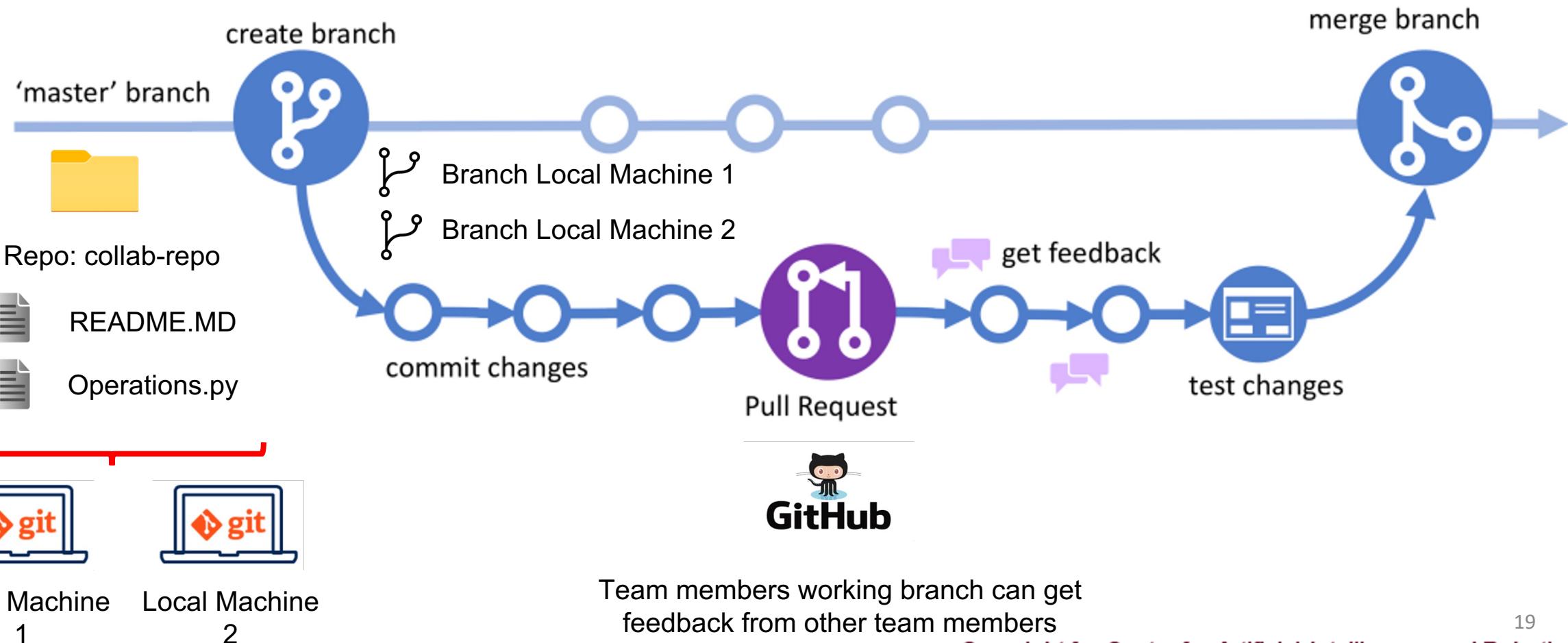


5. Reviewing and Merging Pull Requests

GitHub Flow

Collaborators Task:

1. Local Machine 1 – Add subtract function in file operations.py
2. Local Machine 2 – Add multiply function in file operations.py



5. Reviewing & Merging Pull Requests

 GitHub-CollabProject Private 


azie-branch had recent pushes 9 minutes ago 

 main  2 Branches  0 Tags  Go to file  

NOTIFICATION IN REPO
NEW PUSH BRANCH TO
BE REVIEWED 

 noorhazirah	Add files via upload		2f47738 · 33 minutes ago	 3 Commits
 README.md	Add files via upload		49 minutes ago	
 helloworld.c	Add files via upload		46 minutes ago	
 operation.py	Add files via upload		33 minutes ago	

 README 

GitHub-CollabProject

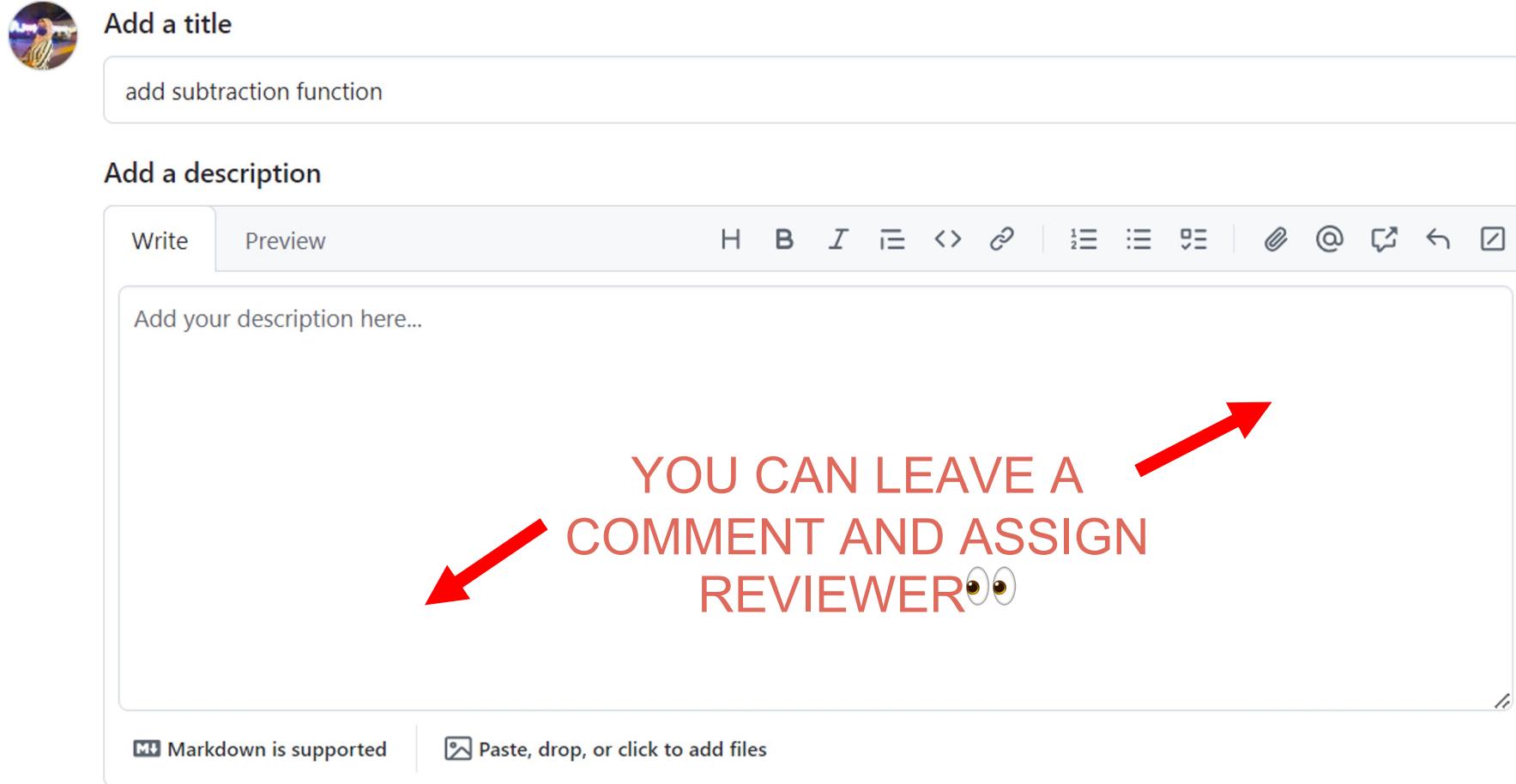
5. Reviewing & Merging Pull Requests

Showing 1 changed file with 4 additions and 0 deletions.

Split **Unified**

```
4 operation.py
...
@@ -1,7 +1,11 @@
1     1     def greet():
2     2         print('Hello World')
3     3
4 +    def sub_numbers(num1, num2):
5 +        sub = num1 - num2
6 +        print('Subtraction:', sub)
4     7     # call the function
5     8     greet()
9 +    sub_numbers(9,2)
6     10
7     11     print('Outside function')
```

5. Reviewing & Merging Pull Requests



The screenshot shows a pull request creation interface. At the top left is a user profile picture of a penguin. Next to it is a title input field with the placeholder "Add a title" and a text area containing "add subtraction function". Below this is a "Add a description" section with a rich text editor toolbar showing "Write" and "Preview" buttons, and icons for bold, italic, underline, and other formatting. A large text area below the toolbar has the placeholder "Add your description here...". In the center of this area, the text "YOU CAN LEAVE A COMMENT AND ASSIGN REVIEWER" is displayed in red, with two red arrows pointing towards it from the sides. At the bottom left, there are two buttons: "Markdown is supported" and "Paste, drop, or click to add files". On the bottom right is a green "Create pull request" button.

YOU CAN LEAVE A
COMMENT AND ASSIGN
REVIEWER

Markdown is supported

Paste, drop, or click to add files

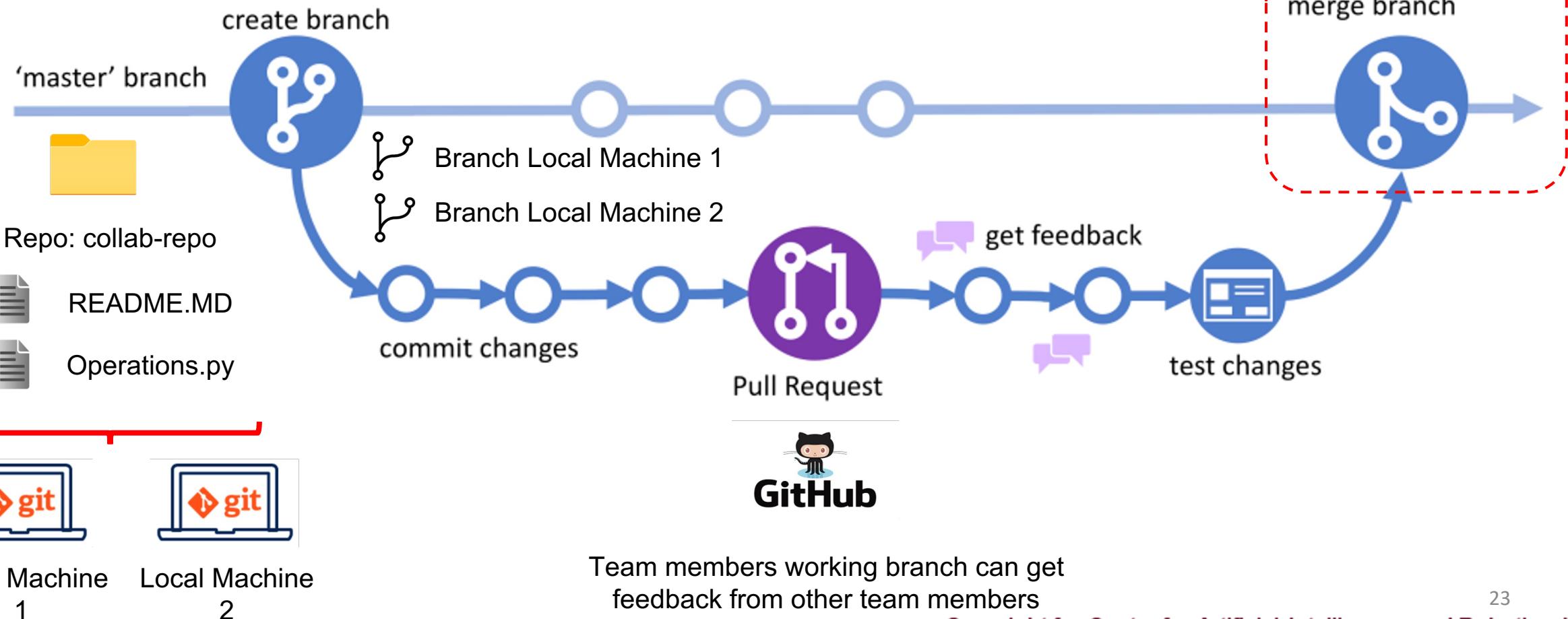
Create pull request

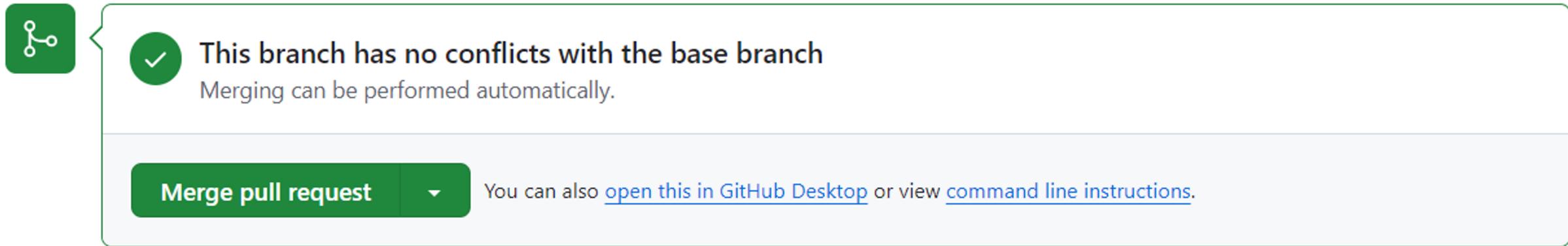
6. Merging and Closing Pull Requests

GitHub Flow

Collaborators Task:

1. Local Machine 1 – Add subtract function in file operations.py
2. Local Machine 2 – Add multiply function in file operations.py





This branch has no conflicts with the base branch
Merging can be performed automatically.

Merge pull request ▾ You can also [open this in GitHub Desktop](#) or view [command line instructions](#).

A screenshot of a GitHub pull request merge interface. It shows a green circular icon with a checkmark and a gear symbol, indicating no conflicts. The text "This branch has no conflicts with the base branch" is displayed, followed by "Merging can be performed automatically." Below this, there is a green button labeled "Merge pull request" with a dropdown arrow, and text suggesting alternative merging methods like GitHub Desktop or command line instructions.



Review requested

Review has been requested on this pull request. It is not required to merge. [Learn more about requesting a pull request review.](#)

[Hide all reviewers](#)



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Faculty of
Electrical Engineering



CAIRO
UTM

1 pending reviewer

noorhazirah was requested for review

Continuous integration has not been set up

[GitHub Actions](#) and [several other apps](#) can be used to automatically catch bugs and enforce style.

This branch has no conflicts with the base branch

Merging can be performed automatically.

[Merge pull request](#)

You can also [open this in GitHub Desktop](#) or view [command line instructions](#).



Merge pull request #1 from noorhazirah/azie-branch

add subtraction function

This commit will be authored by dr.noorhazirah.sunar@gmail.com

[Confirm merge](#)

[Cancel](#)



Pull request successfully merged and closed

You're all set—the `azie-branch` branch can be safely deleted.

[Delete branch](#)

6. Merging and Closing Pull Requests

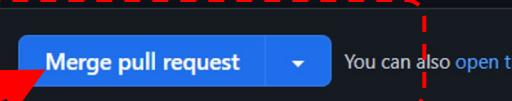
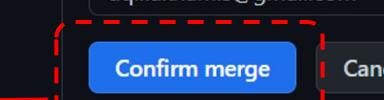
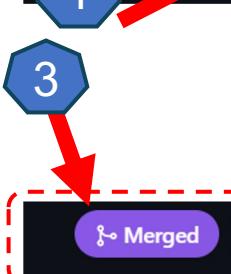
Add more commits by pushing to the [aqilla-branch](#) branch on [Cairo-UTM-Training/collab-repo](#).

 **Require approval from specific reviewers before merging**
Branch protection rules ensure specific people approve pull requests before they're merged.

 **Continuous integration has not been set up**
[GitHub Actions](#) and [several other apps](#) can be used to automatically catch bugs.

 **This branch has no conflicts with the base branch**
Merging can be performed automatically.

Merge pull request  You can also open this in [GitHub Desktop](#) or view com

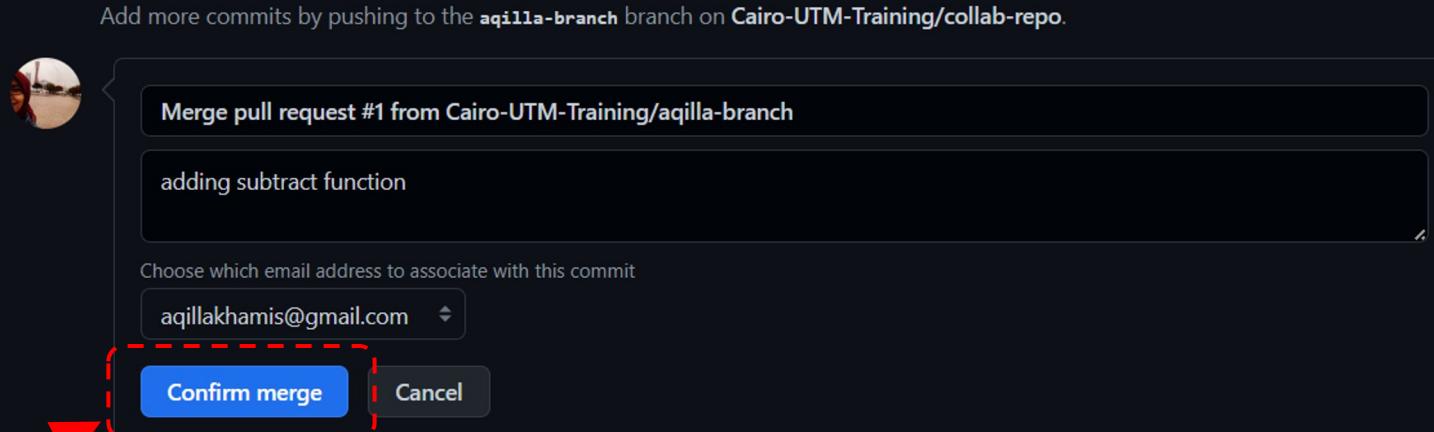
1   **2**   **3**  

Merged  **adding subtract function #1**
aqillahamis merged 2 commits into [main](#) from [aqilla-branch](#) now

 **aqillahamis** merged commit [1074d05](#) into [main](#) now

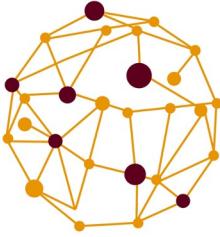
Pull request successfully merged and closed
You're all set—the [aqilla-branch](#) branch can be safely deleted.

Delete branch



7. Synchronizing with the Main/Master Branch

1. Fetch latest changes from the remote repo to make sure you have the most up-to-date-version of the main branch. Use the command -- git fetch origin
2. Pull the latest changes from the main branch to your local repo. Use command -- git pull origin main
3. Checkout to your branch using -- git checkout ["branch_name"]
4. Merge the changes from the main branch into your branch using -- git merge main
5. Resolve any conflicts (manually or based from the conflict markers)
6. Stage and commit the changes
7. Push to main branch -- git push origin <branch_name>



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UTM

THANK YOU



Centre for Artificial Intelligence and
Robotics



research.utm.my/cairo/



cairo@utm.my / trainer's email