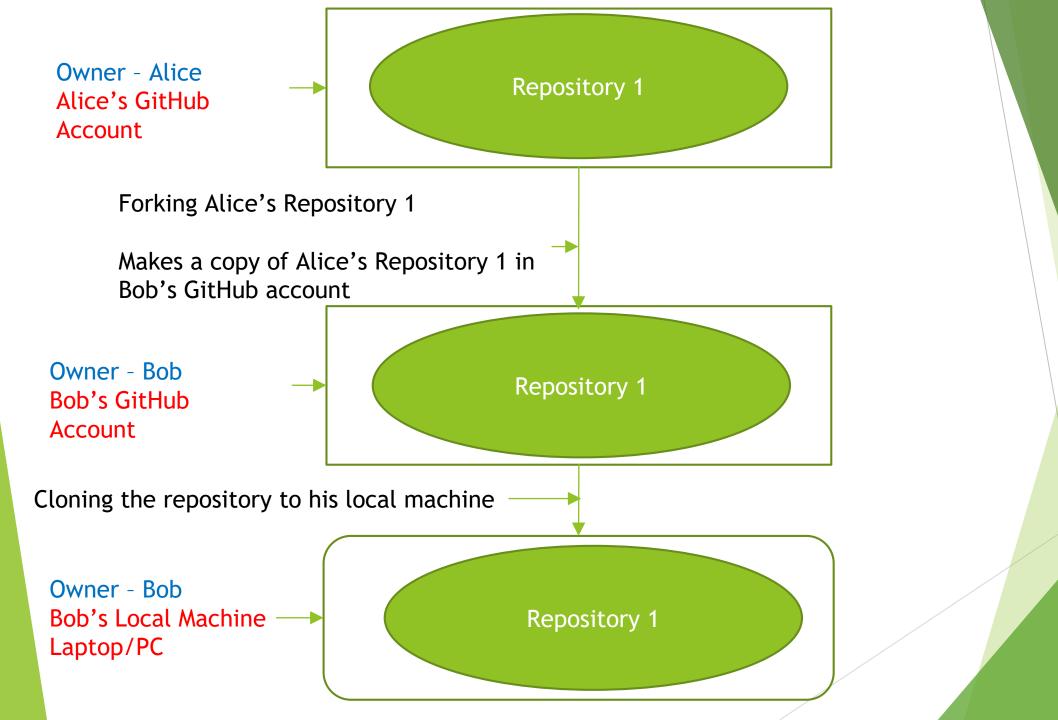
# GitHub

### What is GitHub

- GitHub is a web-based Git repository hosting service.
- It offers distributed revision control and Source Code Management (SCM).
- lt is an open source version control system.
- Version control helps multiple users work on a single project and on the same file and keeps track of all changes.
- This helps rolling back to a stable version if for some reason the newer version has some issue.
- It also helps identify which user has committed a code which was faulty.



### Steps to Use GitHub

- 1. Open the repository you want to use.
- 2. Fork the repository to your own GitHub account.
- 3. Clone the repository from your GitHub account to your local machine.
- 4. Push the changes to the repository in your GitHub account after your modify the files that want to change.
- 5. Create a pull request to the owner of the original repository to incorporate your changes.

- ► The first step is to identify the repository that you want to modify.
- So the first thing that you will have to do is find the repository on GitHub.
- Fig. The repository will show you all the files that are present in the repository.
- You can view all the changes that have been made in the repository.
- It will also show you who all have modified the repository.

- Forking the repository.
- Once you have identified the repository you will be forking the repository.
- This means that you will be making a copy of the original repository or a mirror image of the original repository on your GitHub account.
- This is done so that you can freely modify this repository without it affecting the original repository.
- Once the repository is forked you will find a copy of the repository on your personal GitHub account.

- Cloning a repository.
- At this point you have the copy of the repository on your GitHub account.
- Now we need to create a copy or clone of this repository on your local machine.
- The cloning option is going to create a copy of the repository on your local machine.
- Once that is done you can freely modify the files, test your changes and so on.
- These changes will be visible only to you and no one else.

- Push the changes to your GitHub repository.
- Now that you have modified the files and made the changes that you need, you need to make these changes be reflected in your GitHub account to make these changes persistent.
- You will be using the Push option to do so.
- Push option is going to take all the changes that you have made in your local clone and make those changes on your GitHub account.
- Once the push is done all the changes that you have made in your local clone will be present in your GitHub account
- NOTE: At this point the changes are still the repository in YOUR GitHub account and not in the original repository of the owner.

- Pull Requests.
- At this point you have all your changes on your GitHub account. Now we need to have our changes integrated onto the original repository.
- This repository is owned by a different owner. So we create a PULL REQUEST to the original repository.
- This means that you are requesting the original owner to pull your changes into his original repository.
- At this point the owner will be able to view all your proposed changes to his repository. He can review these changes and give you comments on your changes asking your to modify your changes.
- It is up to the owner whether he wants to incorporate your changes to his repository or whether to reject your changes.
- Once the owner accepts the pull request your changes will be integrated on to his original repository

## Repository

- A repository is a location where all files in a particular project are stored.
- It is usually called a REPO.
- Each project will have its own repo and can be accessed by a unique URL.



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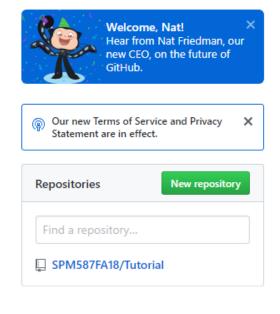
#### Learn Git and GitHub without any code!

New repository
Import repository
New gist
New organization

Using the Hello World guide, you'll create a repository, start a branch, write comments, and open a pull request.

Read the guide

Start a project

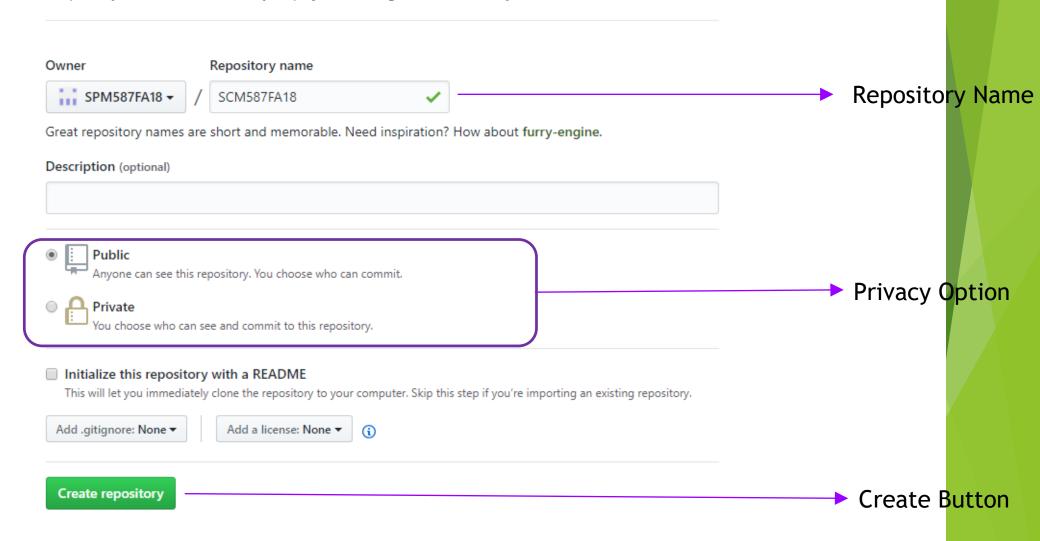


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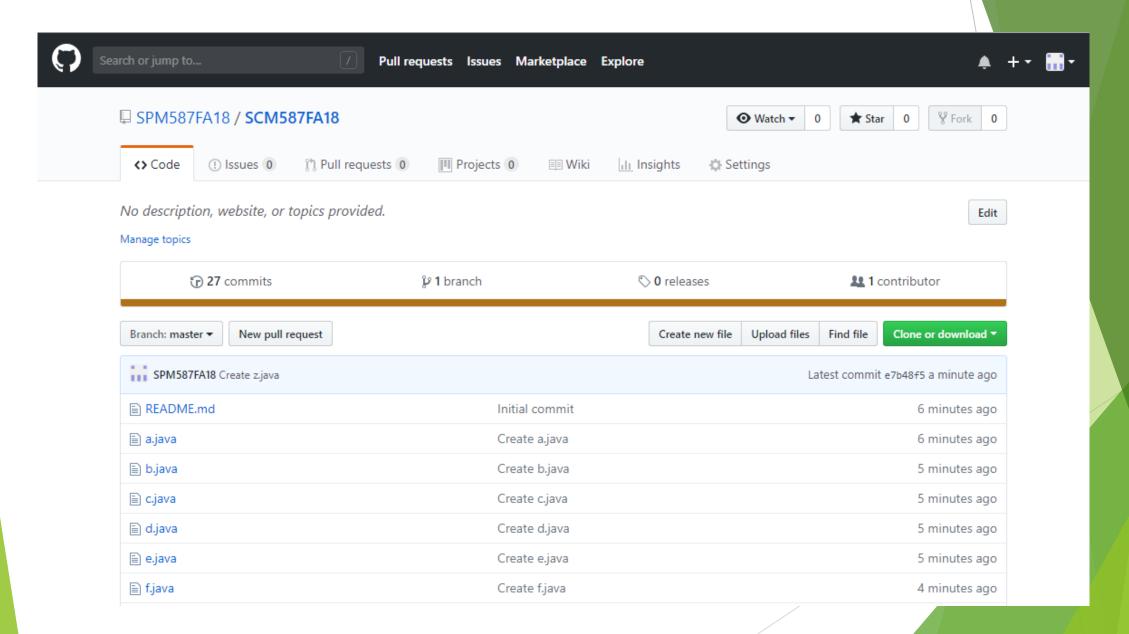


#### Create a new repository

A repository contains all the files for your project, including the revision history.



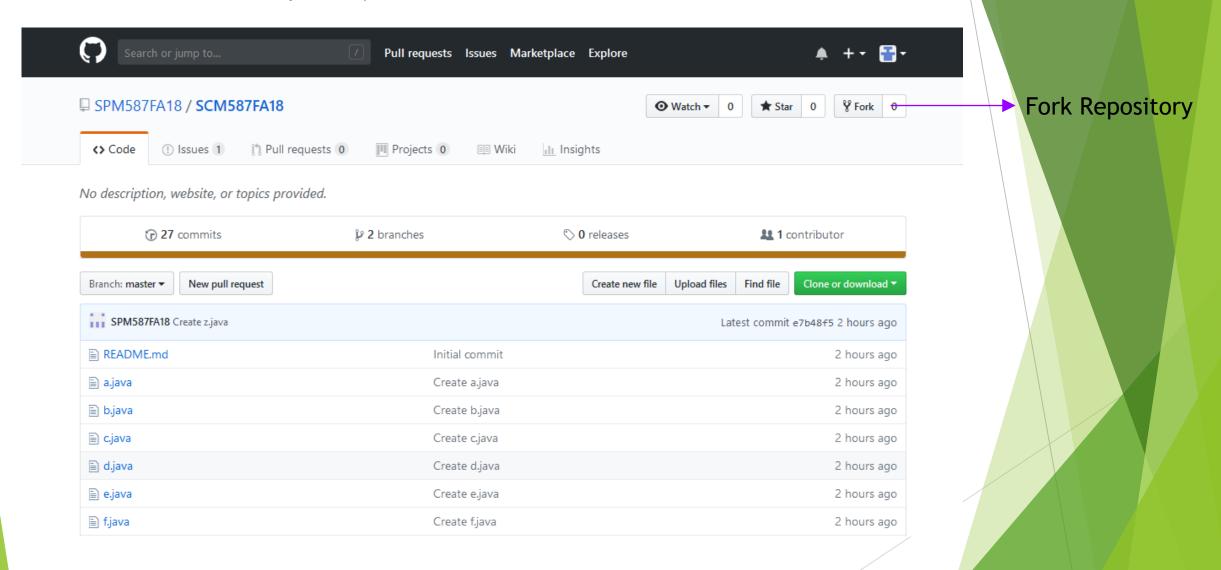
#### Viewing your repository

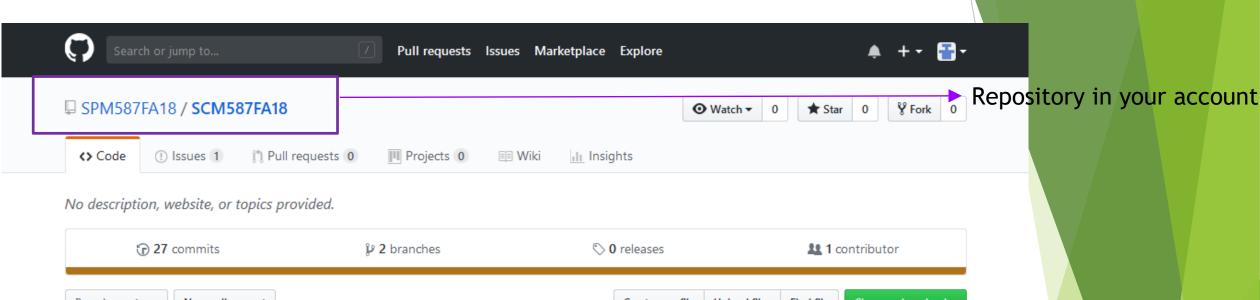


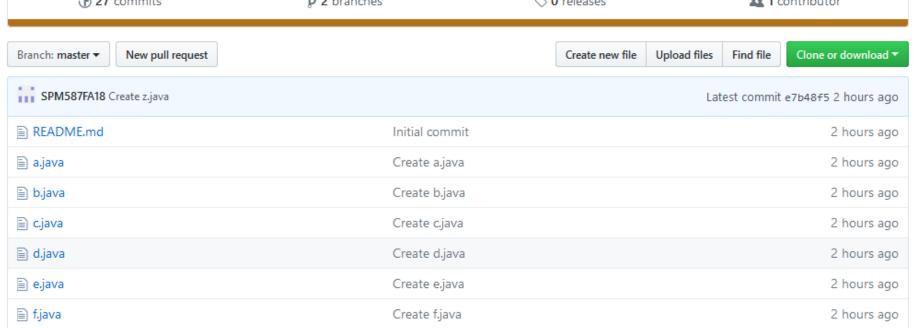
## Forking a Repo

- Forking is when you create a new project based on another project.
- If you like to contribute to a project you can fork that repo.
- ► This creates a copy of that repository in your account.
- You can make changes to this repo without affecting the original repo.
- At some point if the original repository has new changes in it which you want you can always update your repo with those changes.
- You can request the author of the original repo to take in your changes as well from your forked repo.

#### Fork a repository



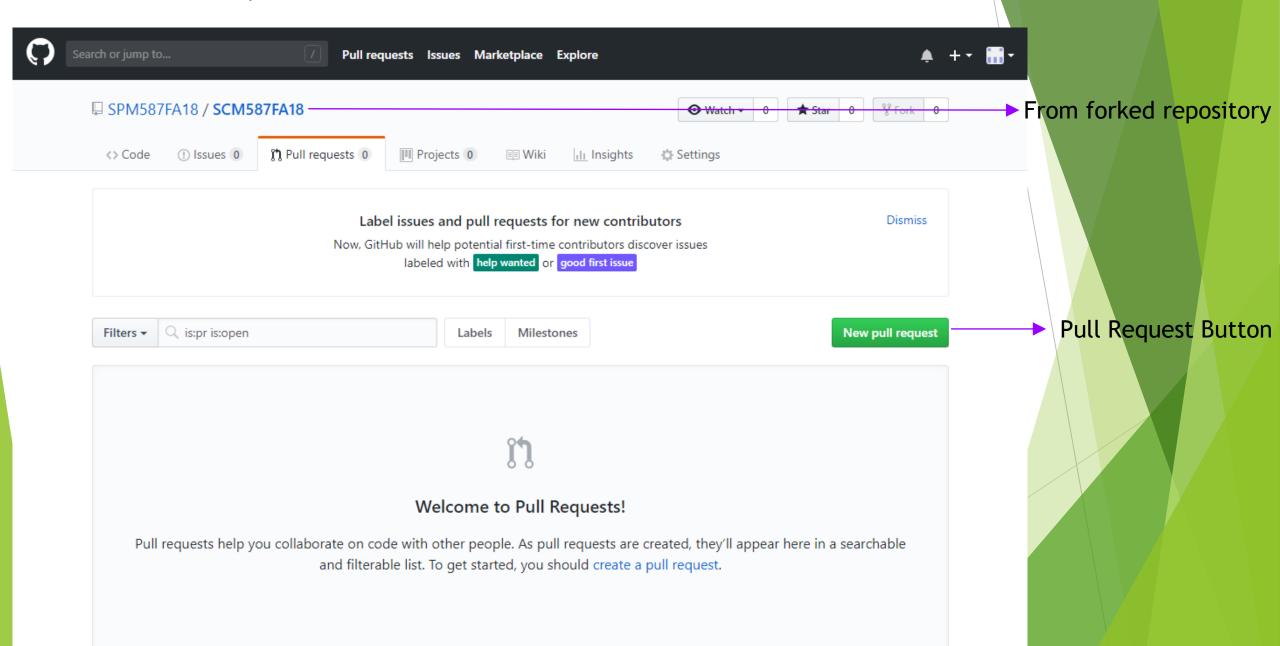




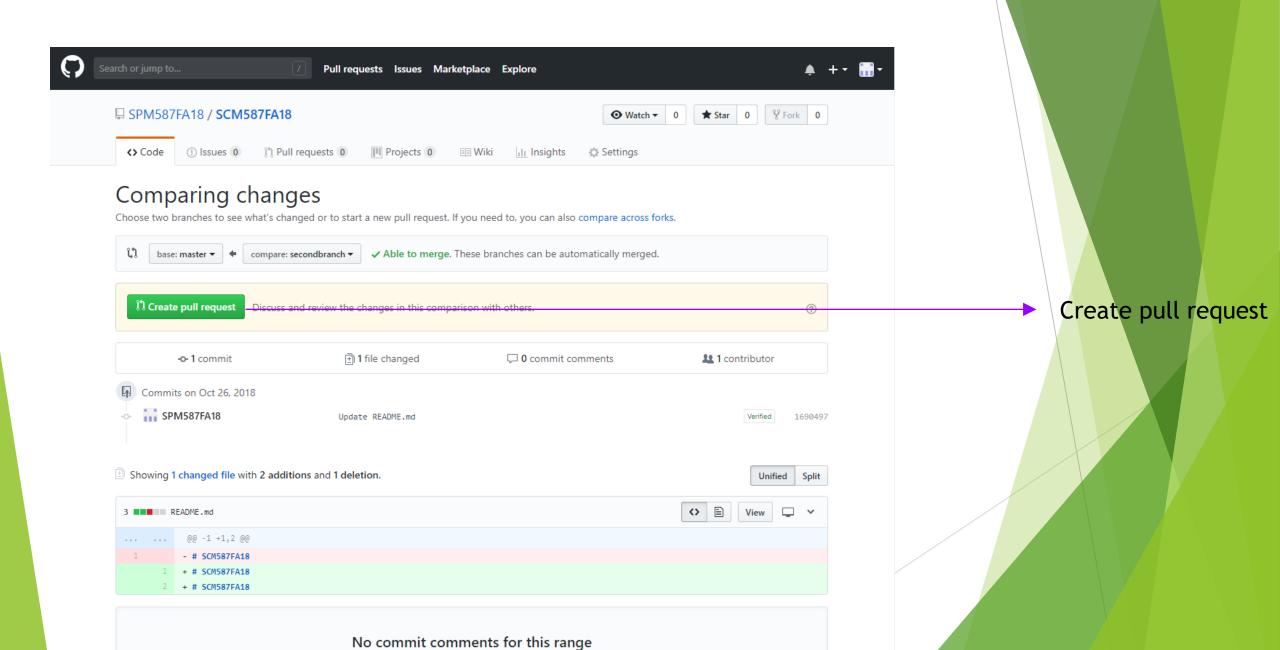
### **Pull Requests**

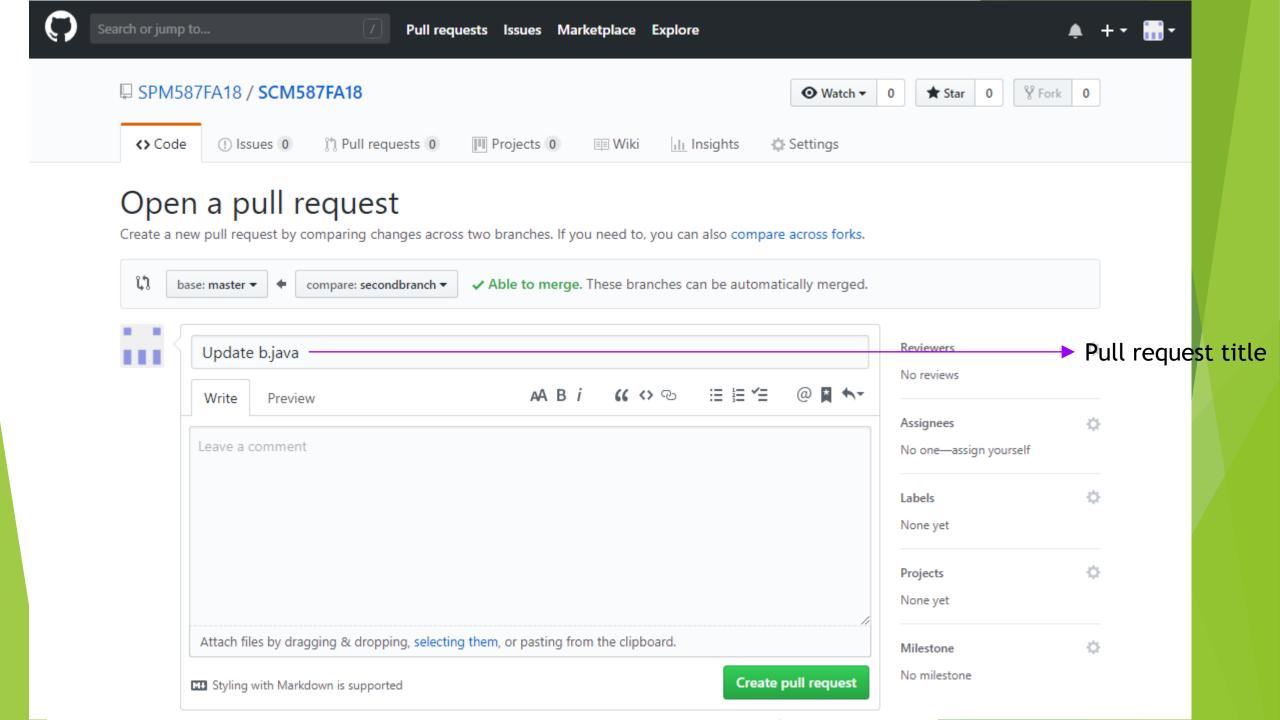
- Once you fork a repo and makes changes to that forked repo, you have the changes only in your repo.
- Say you want to add your changes to the original repo.
- You can do so by creating a pull request for your changes to be pulled into the original repo.
- The original repos owner can review your changes and accept your changes and pull in your changes to the original repo.
- He can also reject it if he wants to.

#### **Pull Request**



#### Creating the pull request

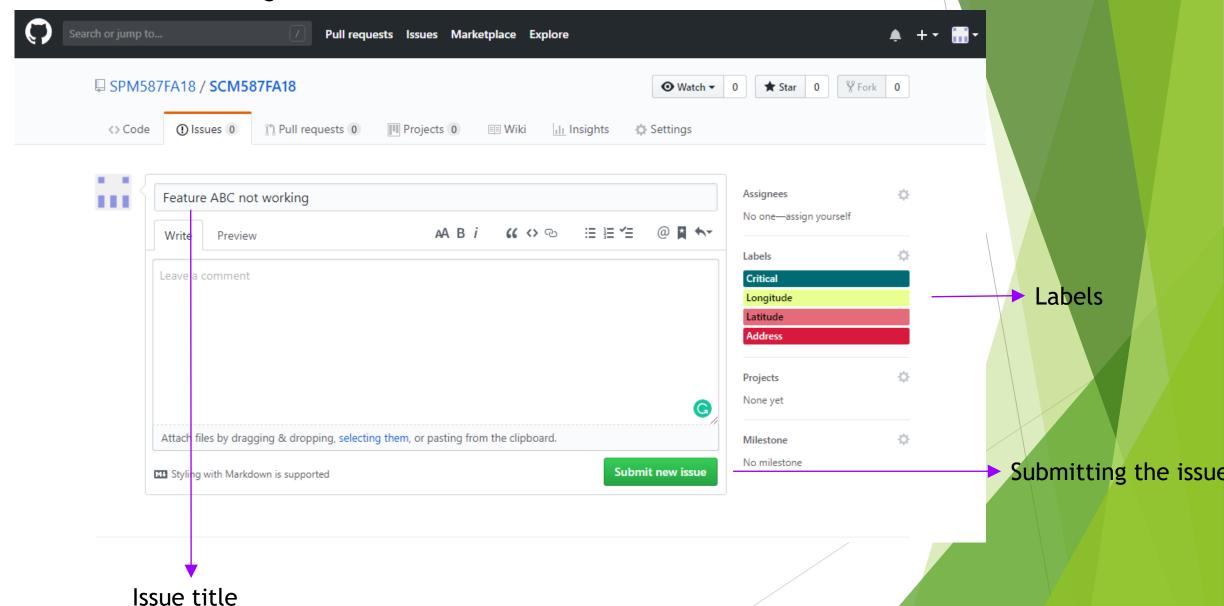




### Issues

- Issues option in GitHub is a bug tracking tool for GitHub.
- Let's say you find some bugs in your code.
- You can raise an issue for each bug that you find.
- Once you fix that code and the bug is cleared you will be making a commit to your repo.
- At this time you can close that bug.
- ► This will help a user looking into the repo to understand the bugs that have been identified and also what code fixed it.
- ▶ He can look at that particular fix and understand how it was fixed.

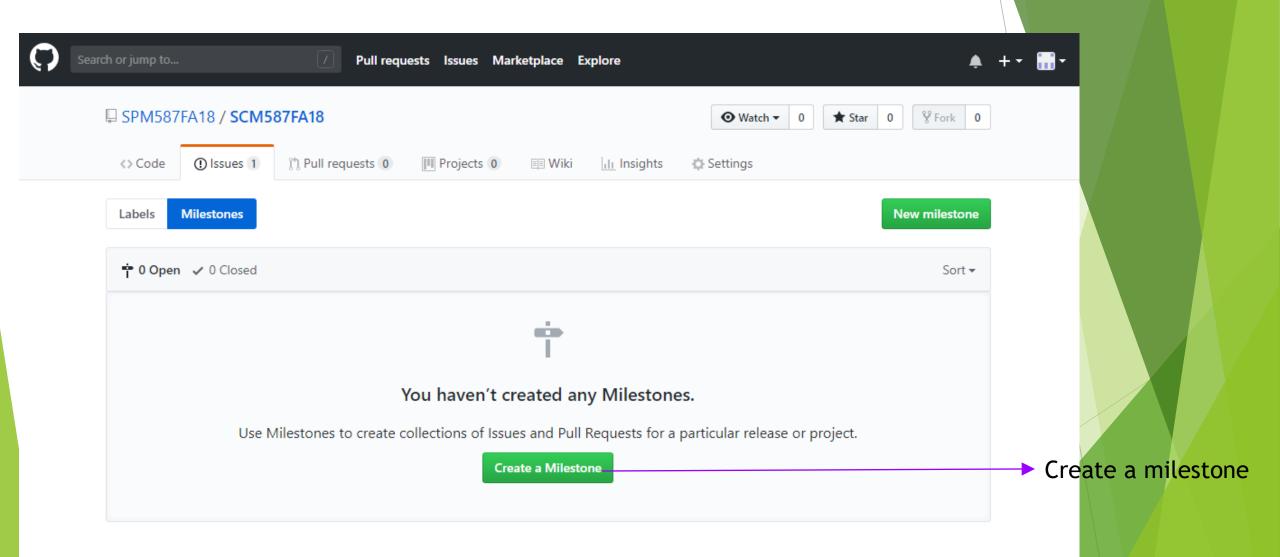
#### Labeling the issues



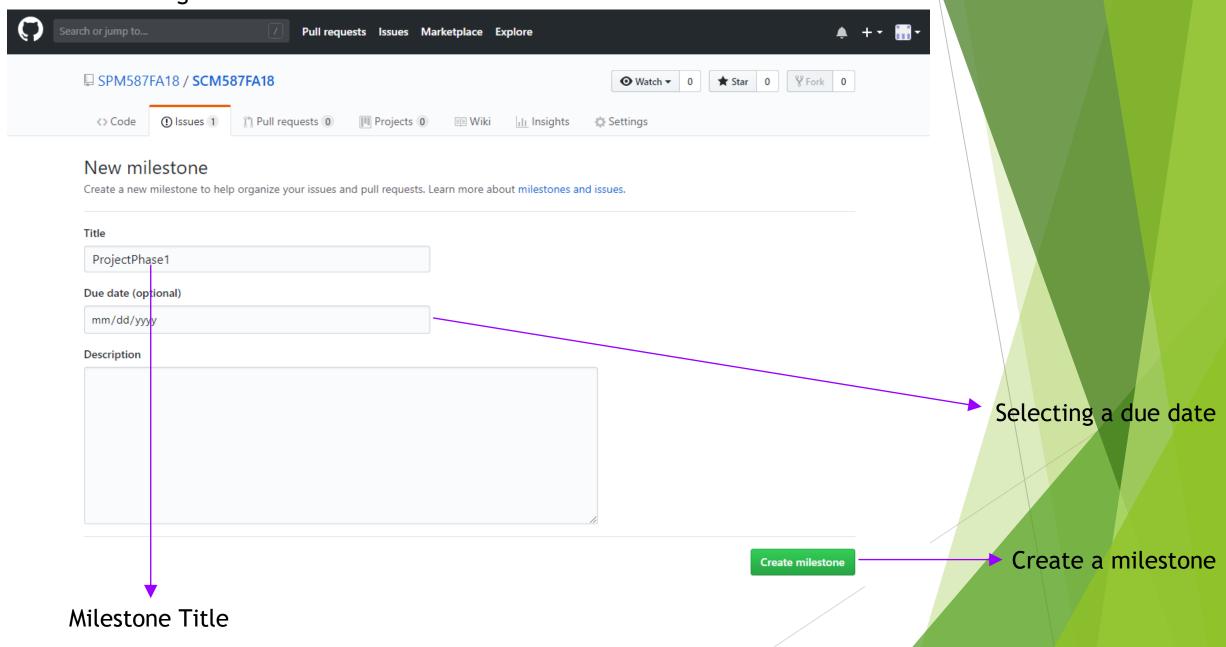
### Milestones

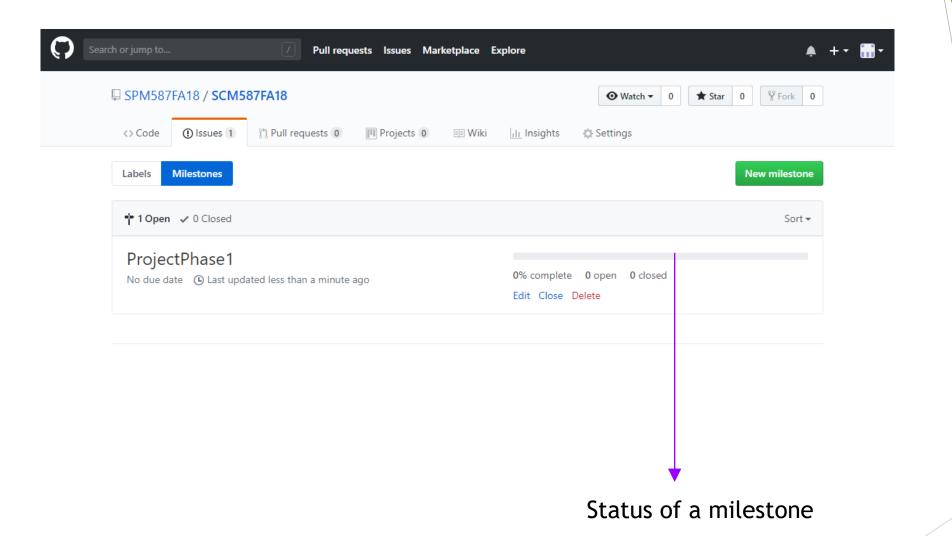
- You can also add milestones to your repo.
- Milestones help you keep track of your progress.
- Assume you have a project which you are doing in multiple parts.
- You can create milestones for each part.
- Once each part is completed and the corresponding bugs in that code have been cleared you can mark a milestone to be completed.
- You can split up your project into multiple enhancements and as each enhancement is completed it keeps showing the progress on the milestone.

#### Milestones



#### **Creating Milestones**





Questions?