CMSC388T

Project Management Tools

Today's Lecture

1

Pull Requestss

How do you review code?

2

Purpose of Tools

Why do we use project management tools and what advantages do they have?

3

Github Project Boards

How does github incorporate these project management tools?

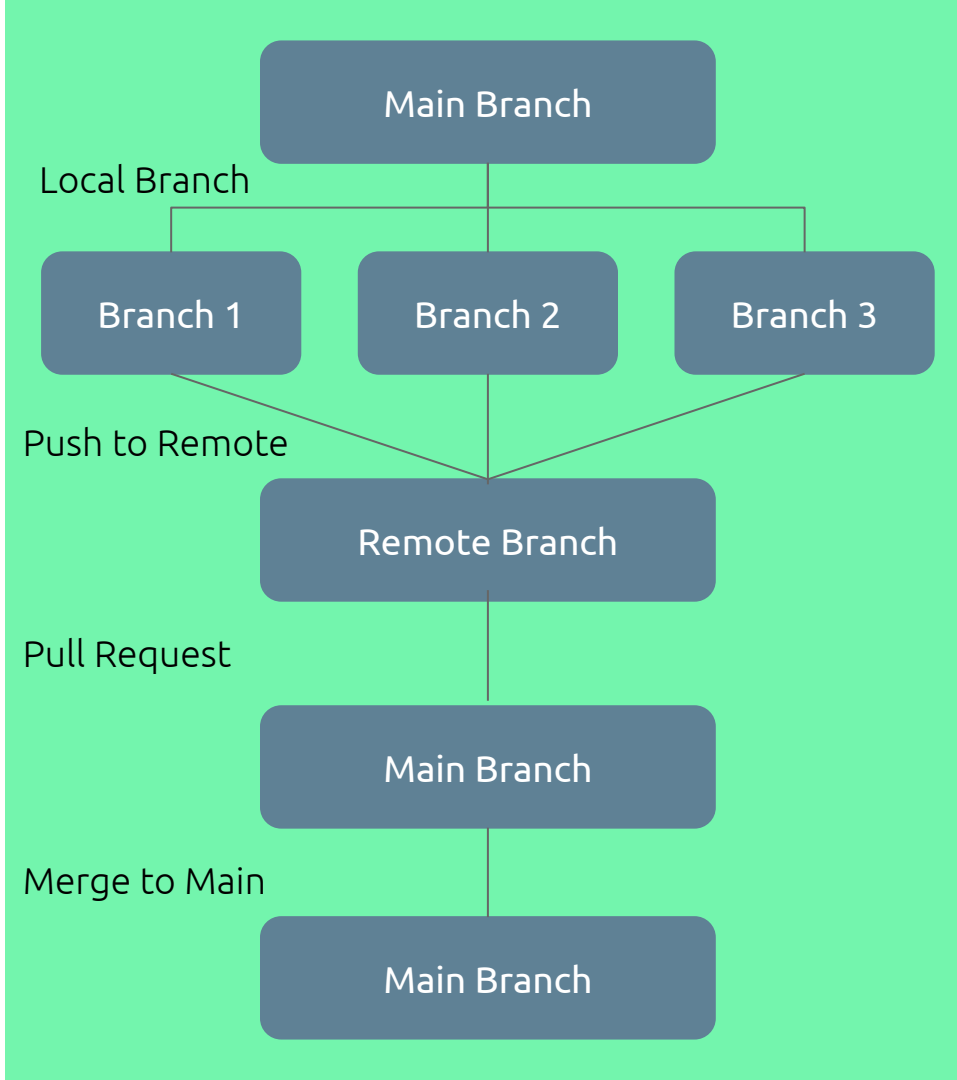
- **Branching, Pull Requests**

Pull requests, Reiew, and Fork
When do we Branch and Why is it useful?

Branching

Allows for multiple team members to modify code and work on different assignment for a project.

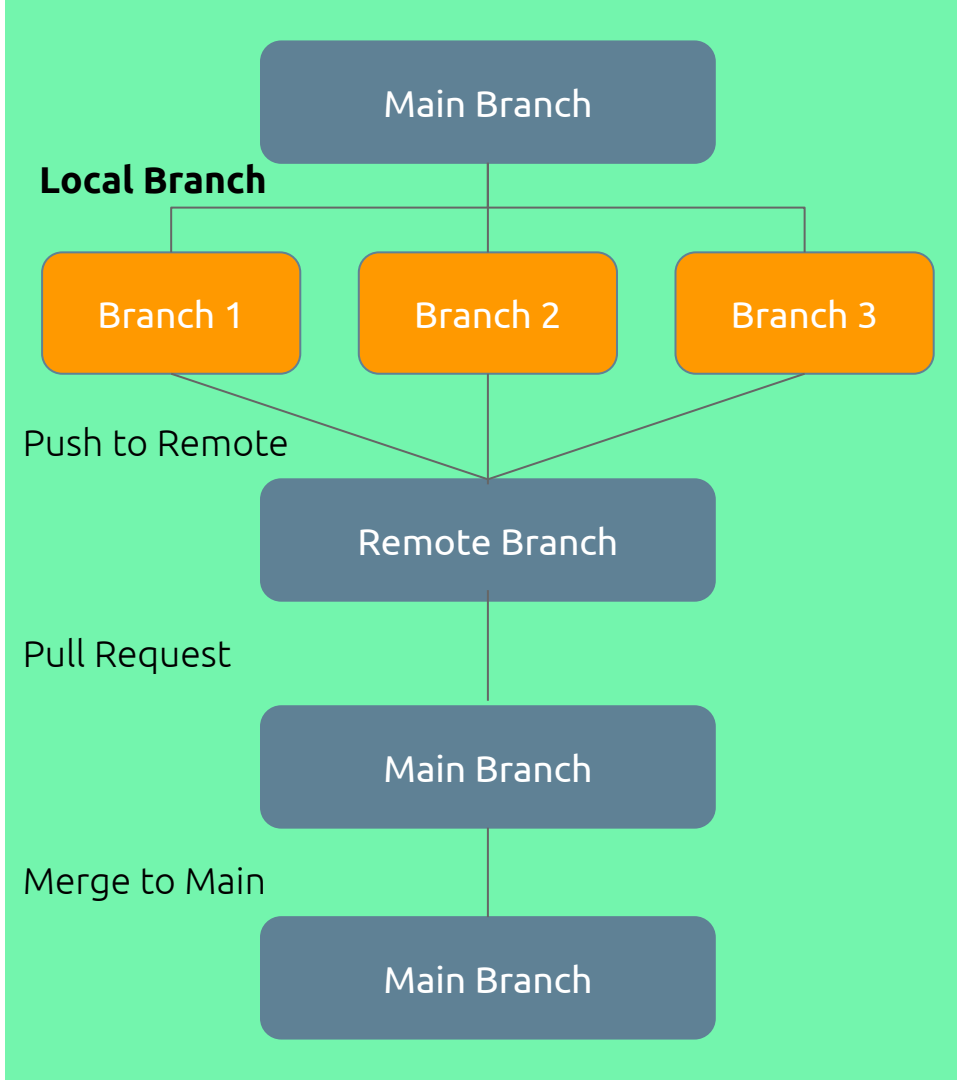
Makes a local copy of the current code that allows a team member to modify and then push to be merged with the main branch



1. Create Local Branch

Copies the main branch to allow user to make local changes and team members to work on the same project simultaneously

git checkout [branch-name] -b

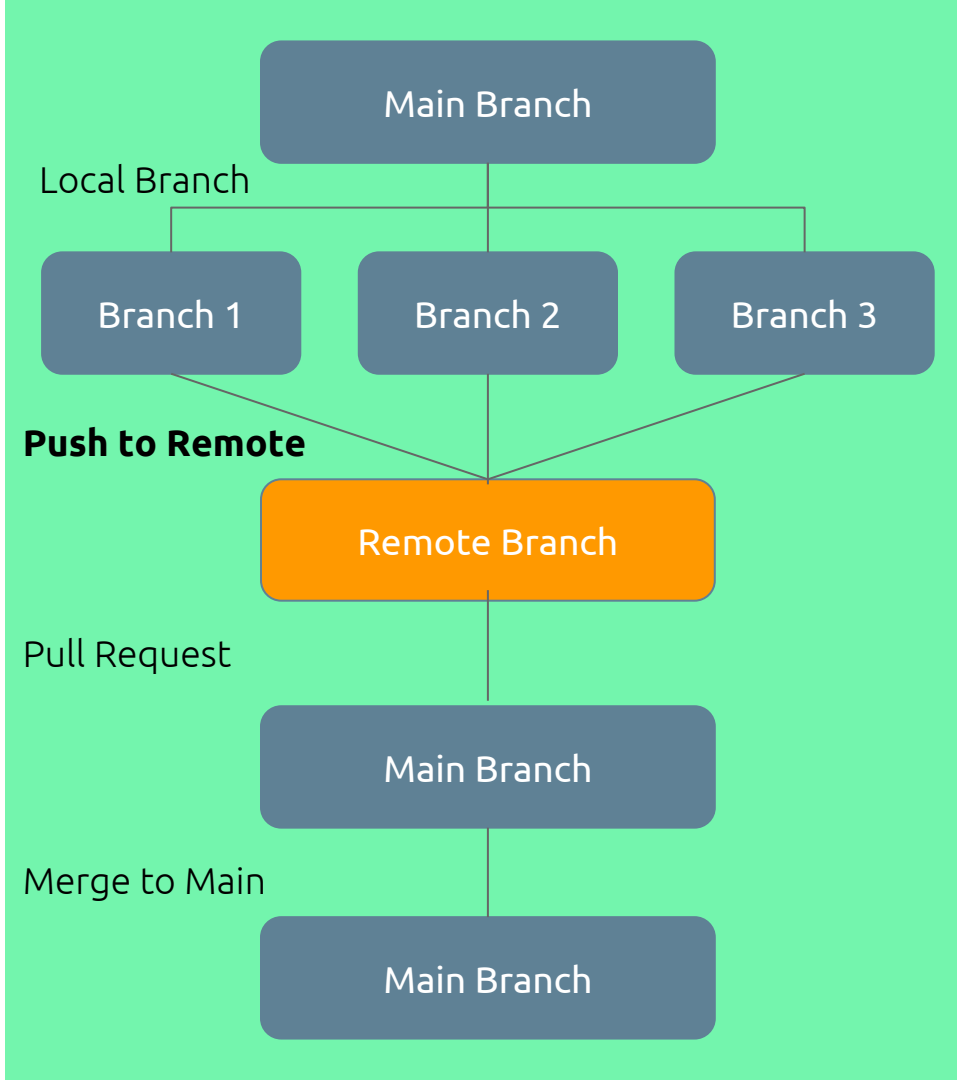


2. Push to Main

Push the local branch to the repository which will make the branch to be visible to all teammates.

Note: pushing the branch to the remote does not mean merging with the main branch

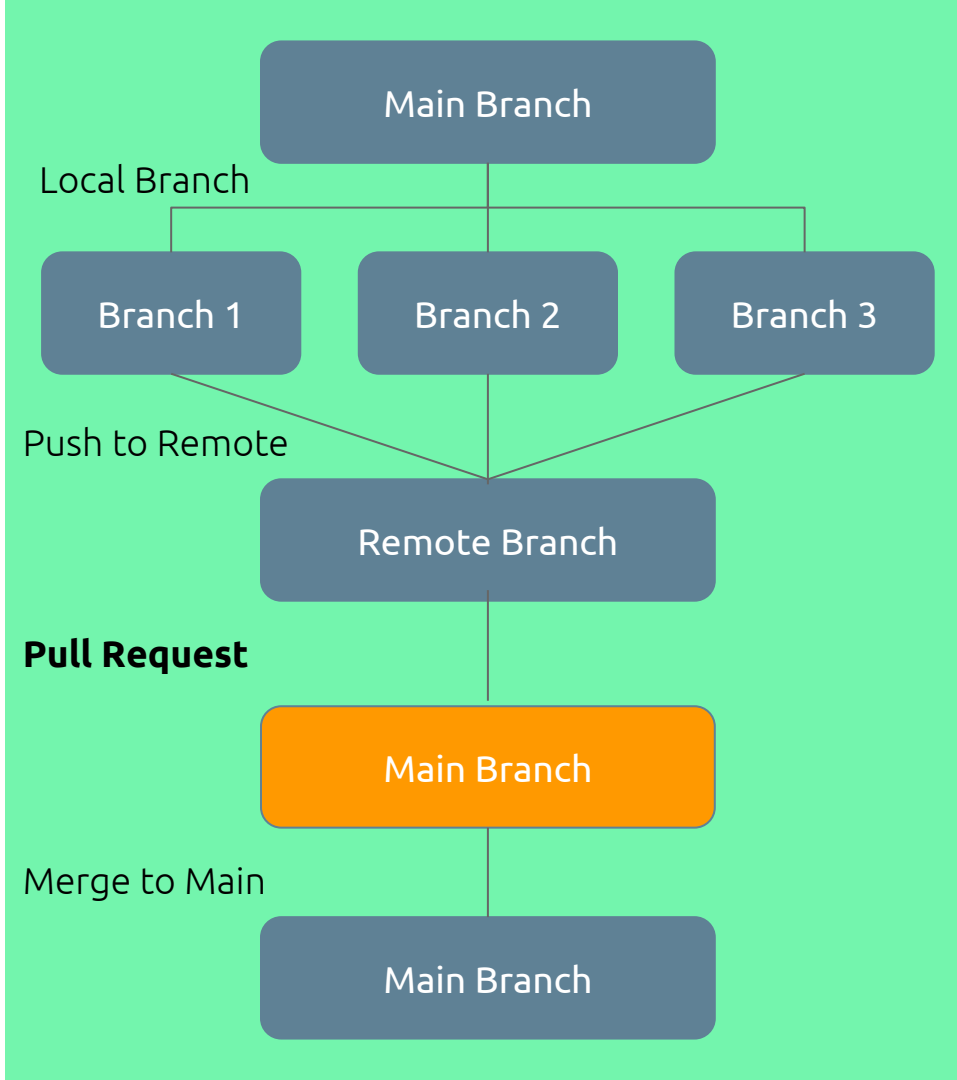
git push -u origin [branch-name]



3. Pull Request (PR)

Create a pull request and assign reviewers to review and make comments on the changes.

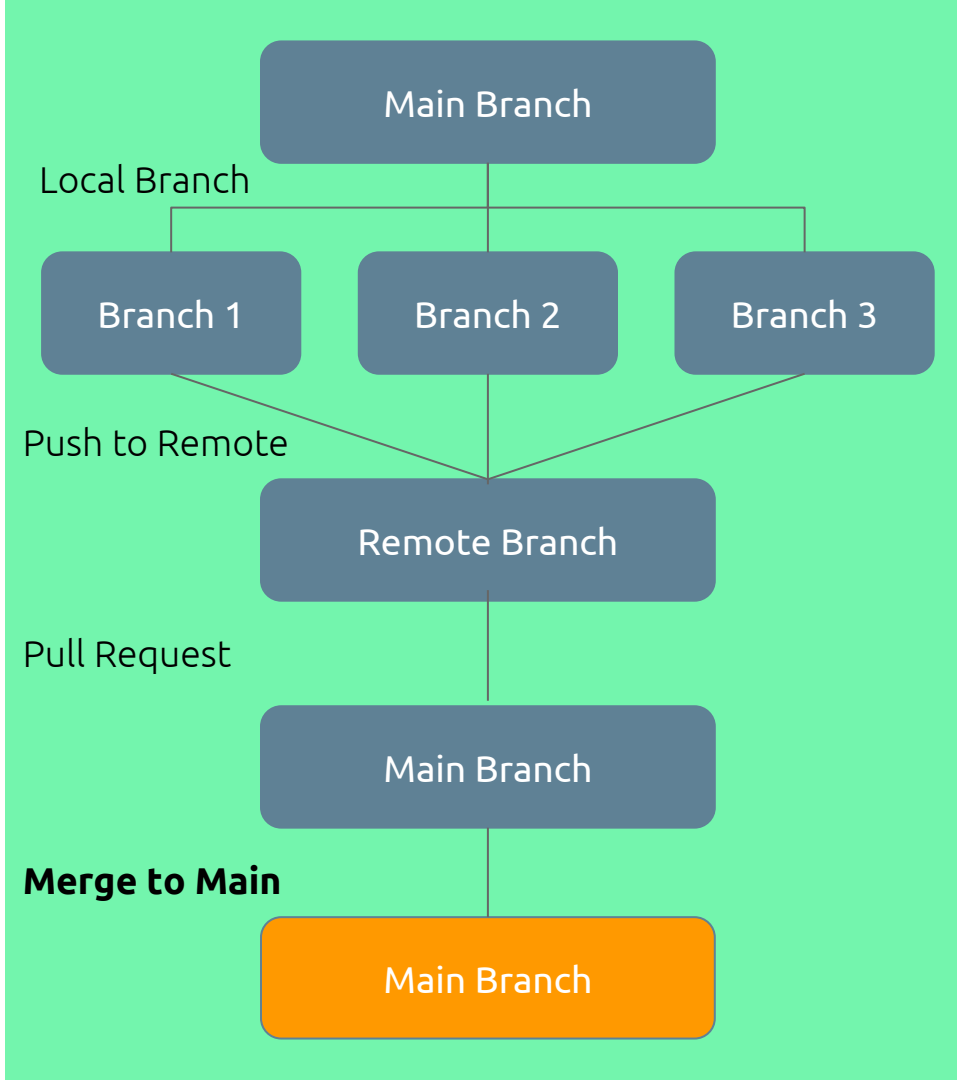
This gives the teammate responsible for the task a chance to fix any potential bugs or problems that could arise after merging with the main branch



4. Merge to Main

Once the reviewers approve the branch pushed to the main it is ready to then be merged with the main branch which will add the changes made from the local branch that was once copied to the main.

This process allows for multiple teammates to work on separate issues and merge them all in the end simultaneously



Branching to Feature vs Branching to Feature-Item

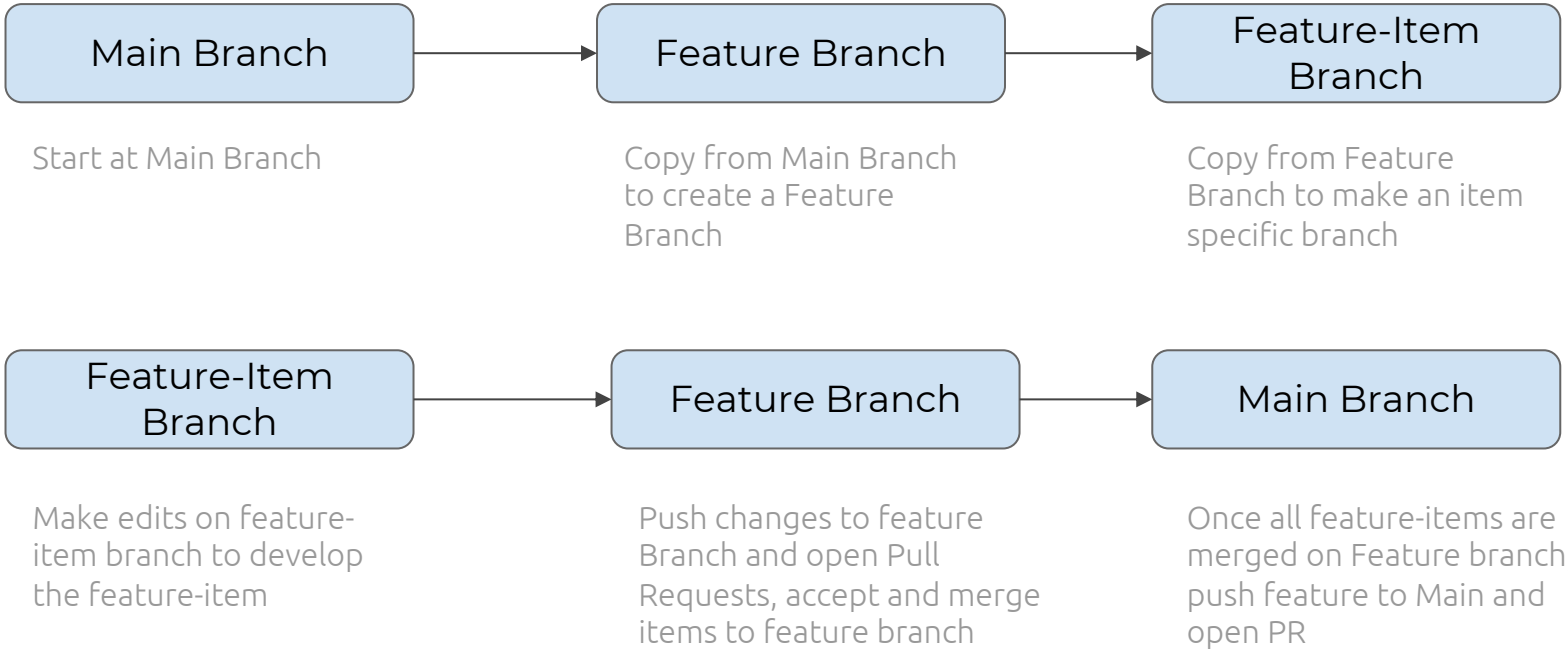
Branching to Feature

- Copy feature branch from Main branch
- Can have multiple people working on same feature
- Creates a branch that will be the subject of a new feature to implement

Branching to Feature-Item

- Copy feature-item branch from feature branch
- Typically one person works on each feature-item
- Creates a branch from the feature branch to address a specific item for the new feature

Feature-Item Branching Process



- **Project Management Tools**

What are they and why are they useful?

Project Management Tools

- Organizational method for developers and managers to coordinate edits,and progress on work in one place
- Useful to manage projects so they stay on schedule
- Creates a central place to keep track of all team member progress

Industry Application Examples

Jira

Bug, Issue Tracker, Test Case Management

Trello

Boards & Cards to prioritize and organize Team tasks

Airtable

Boards & Cards to prioritize and organize multiple teams or company wide

Pivotal Tracker

Tracker for backlog, project breakdown, team transparency

Slack

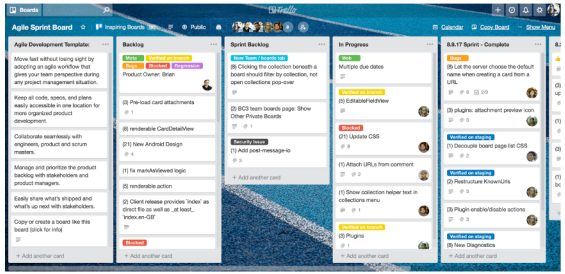
Communication Tool that allows for integration with other applications like git

Teams

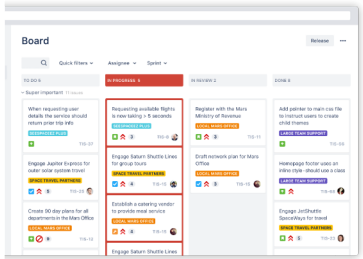
Microsoft communication tool that has conference call integration

Kanban Board

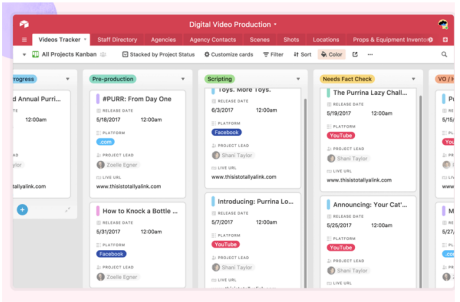
- Organizes team progress and transparency for assignments
  - Examples: Trello, Airtable, Jira
- Allow for teams to differentiate individual progress
- Team members can indicate their progress on a project with updating which assignments are in progress, yet to begin, or ready for review
- Very common application in the Industry World



Trello



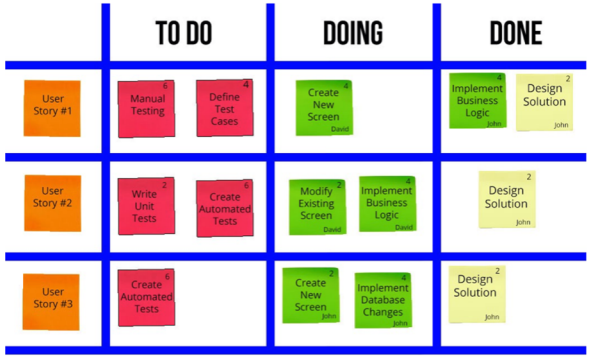
Jira



Airtable

Scrum Board

- Organize and manage a timeline of issues and tasks in order to achieve a desired goal
- Primarily focus on ensuring that project assignments and goals adhere to the timeline
- Plan sprints (typically 2-3 week long goals) a team wants to accomplish while Kanban boards focus on individual team member tasks



3. Using Github Project Boards

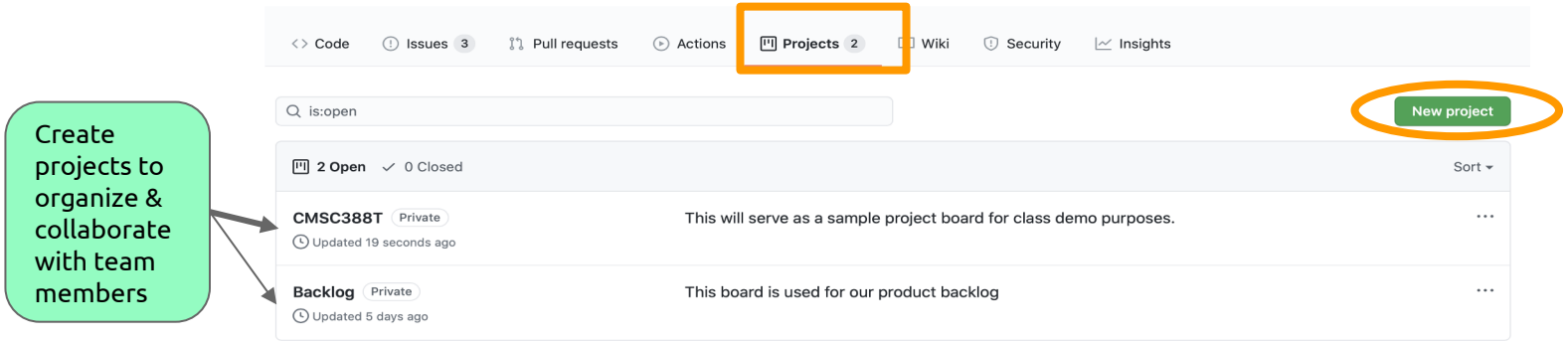
How github allows you to use these tools?

Github Project Management

- Github has an integrated Project Management Feature that utilizes Kanban boards to keep track of team members progress and assignments.
- Creates a transparent, organized, and collaborative atmosphere for team projects.
- Keeps track of and organizes branching, pull requests, reviews, and merges.

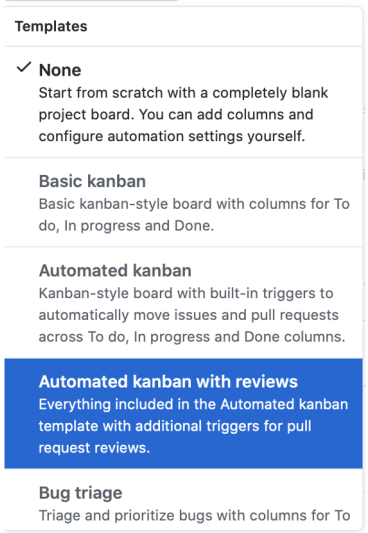
Github Project Management

The Github site has a tab to organize multiple projects for teams

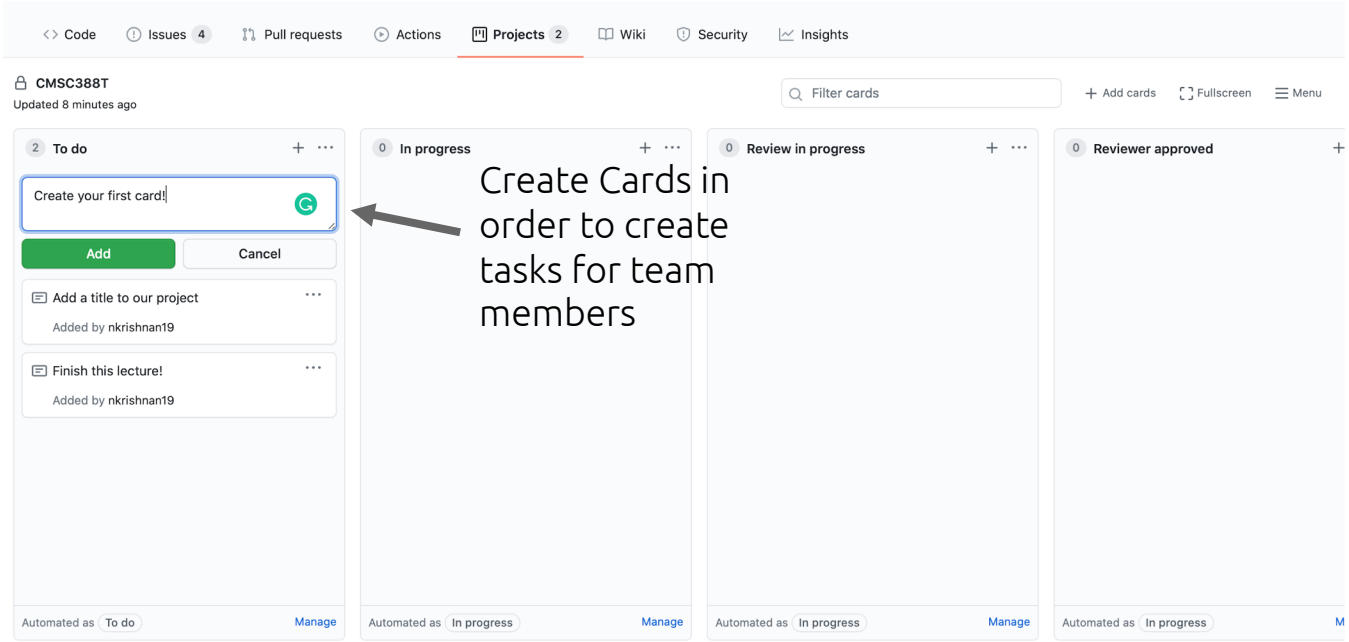


Collaborate with Github Project Manager

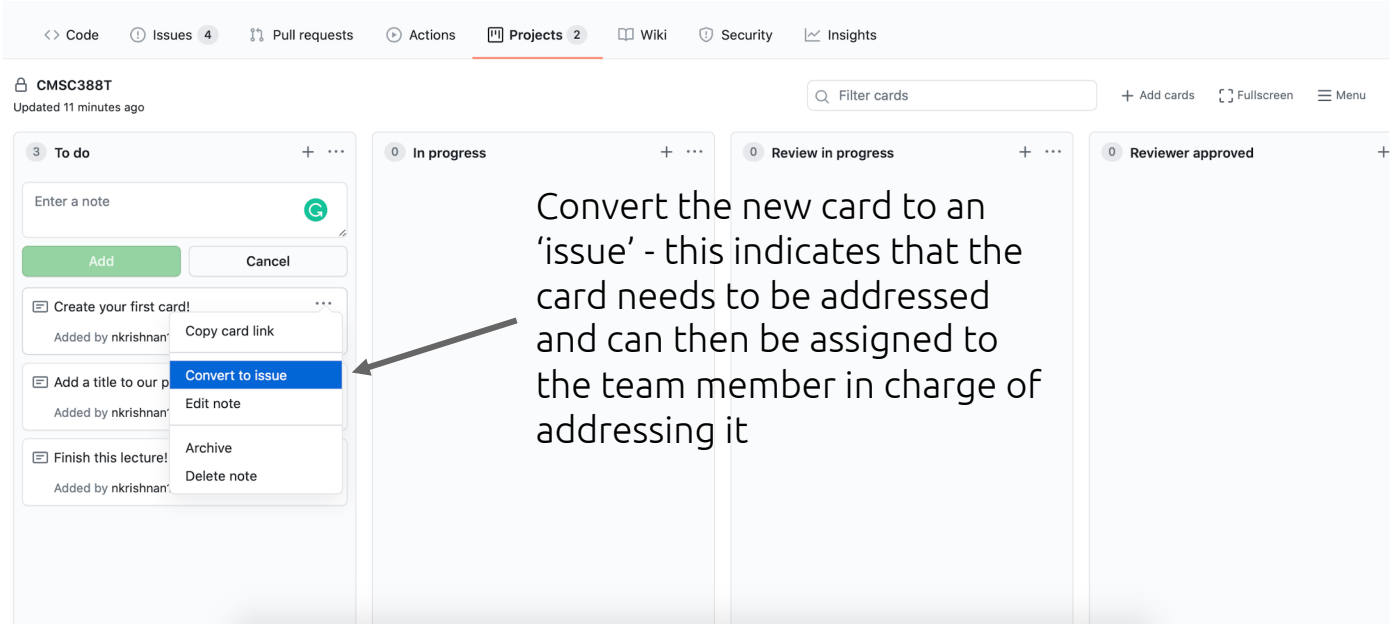
Customize the organization method of your project manager with the different templates that Github Project Manager has to offer. We recommend using the Automated Kanban with reviewers board.



Collaborate with Github Project Manager

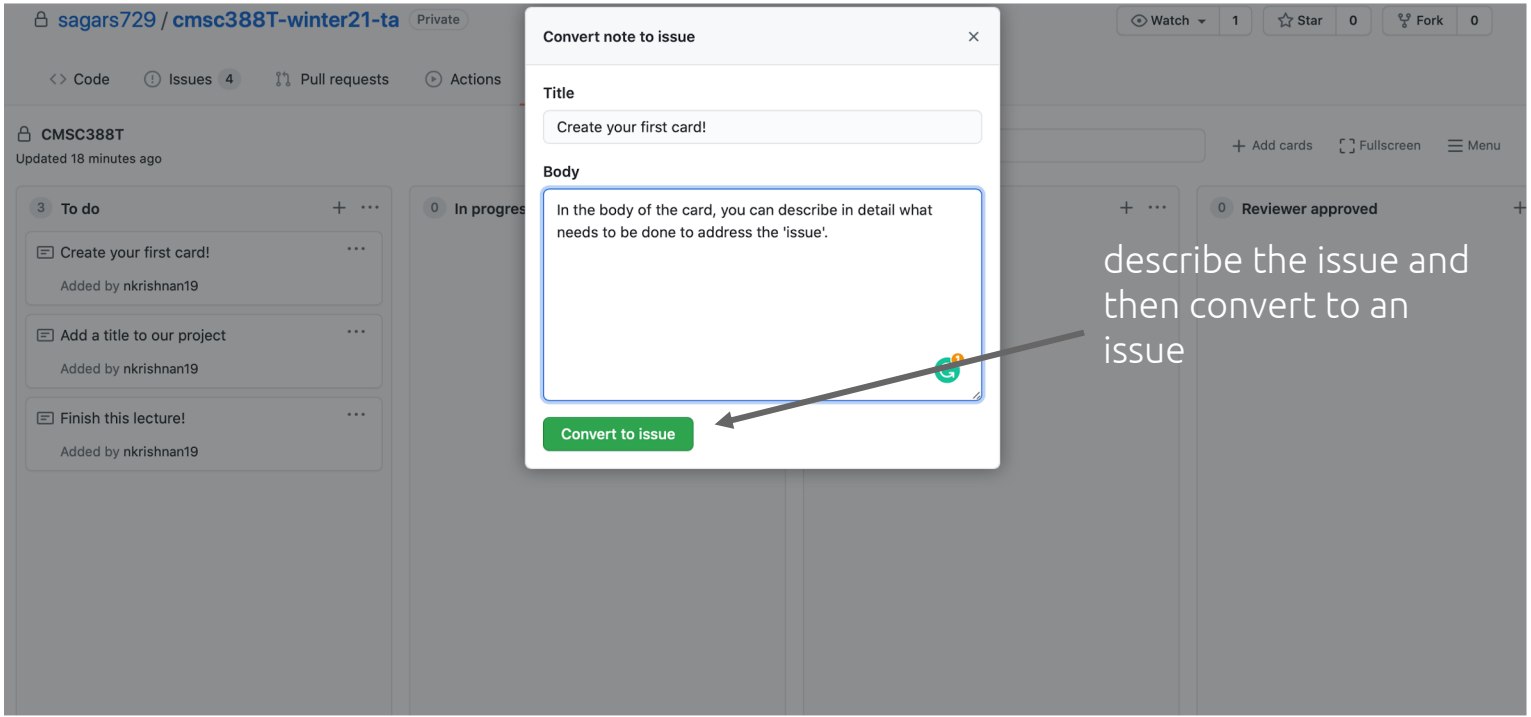


Collaborate with Github Project Manager

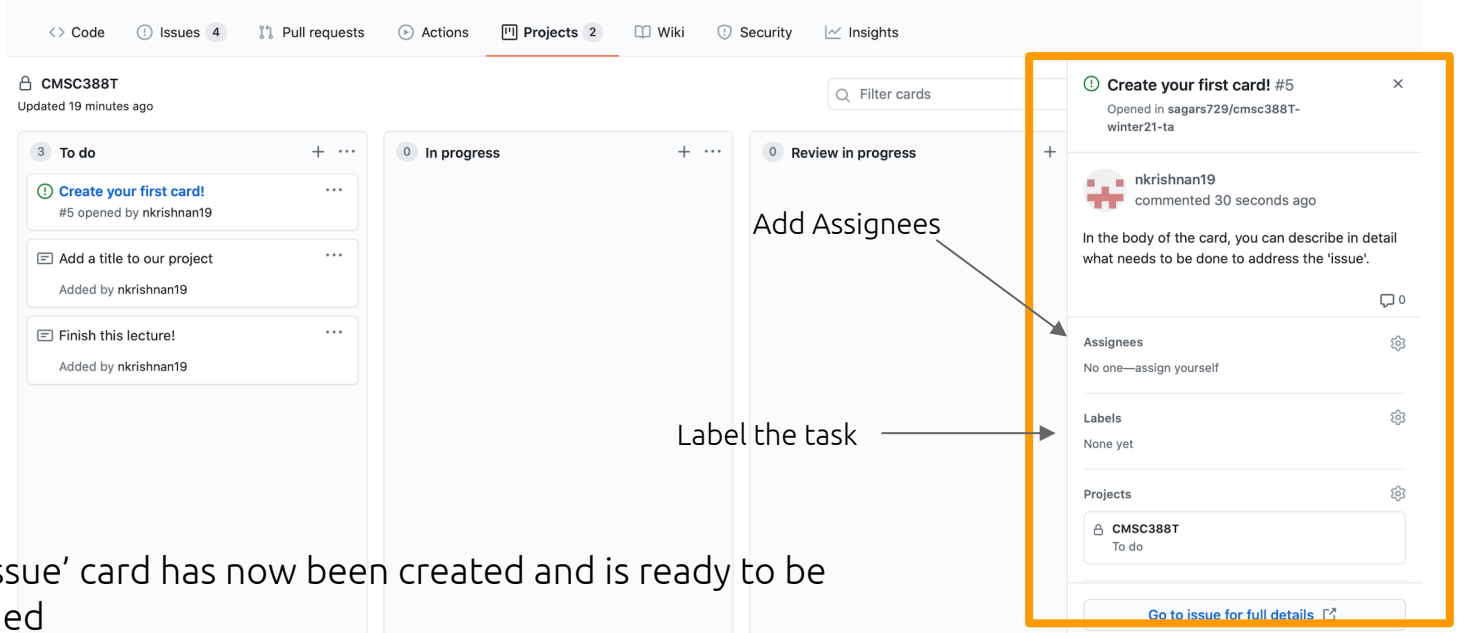


Convert the new card to an ‘issue’ - this indicates that the card needs to be addressed and can then be assigned to the team member in charge of addressing it

Collaborate with Github Project Manager



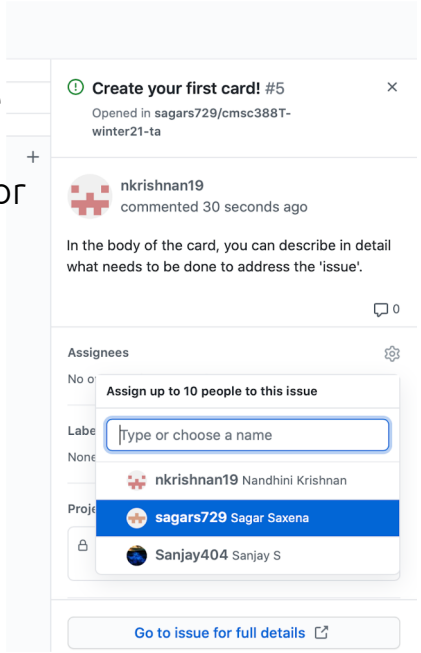
Collaborate with Github Project Manager



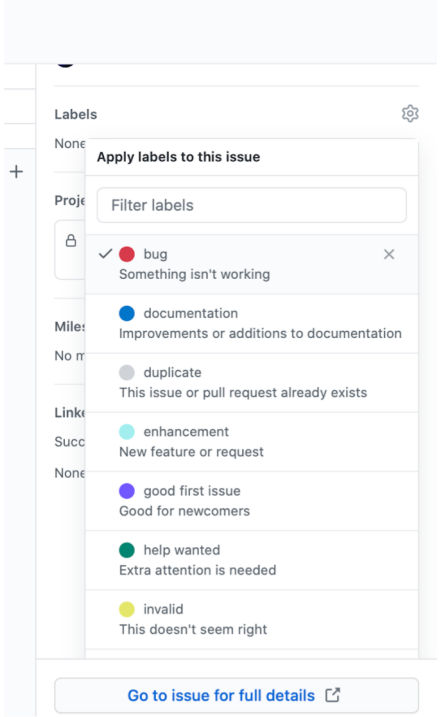
The ‘issue’ card has now been created and is ready to be assigned

Collaborate with Github Project Manager

Assignees are people responsible for the task

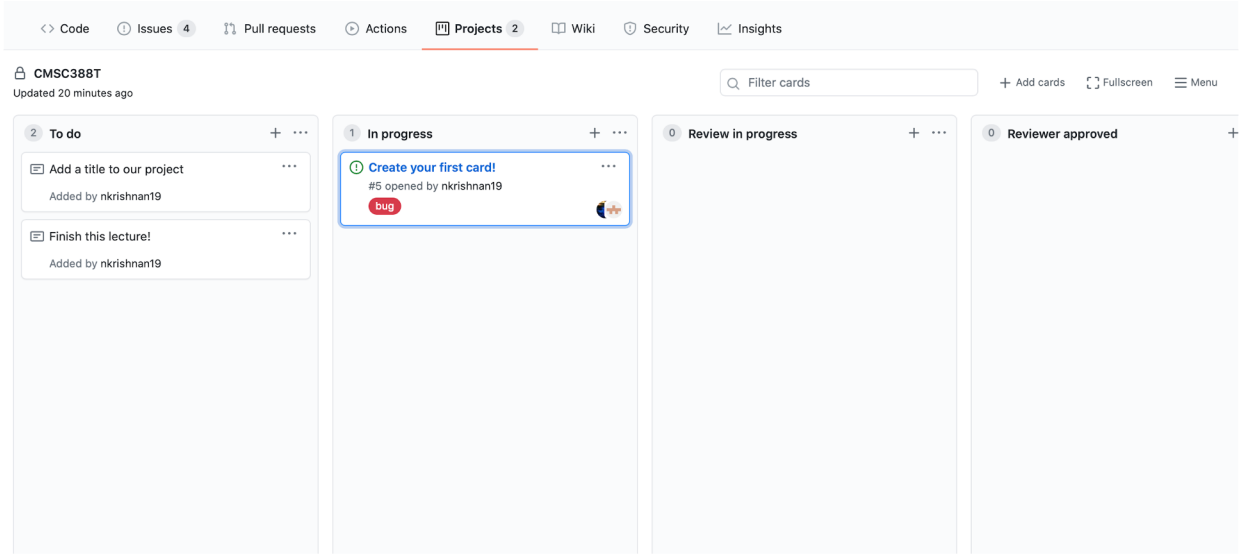


Labels are the type of issue that needs to be address



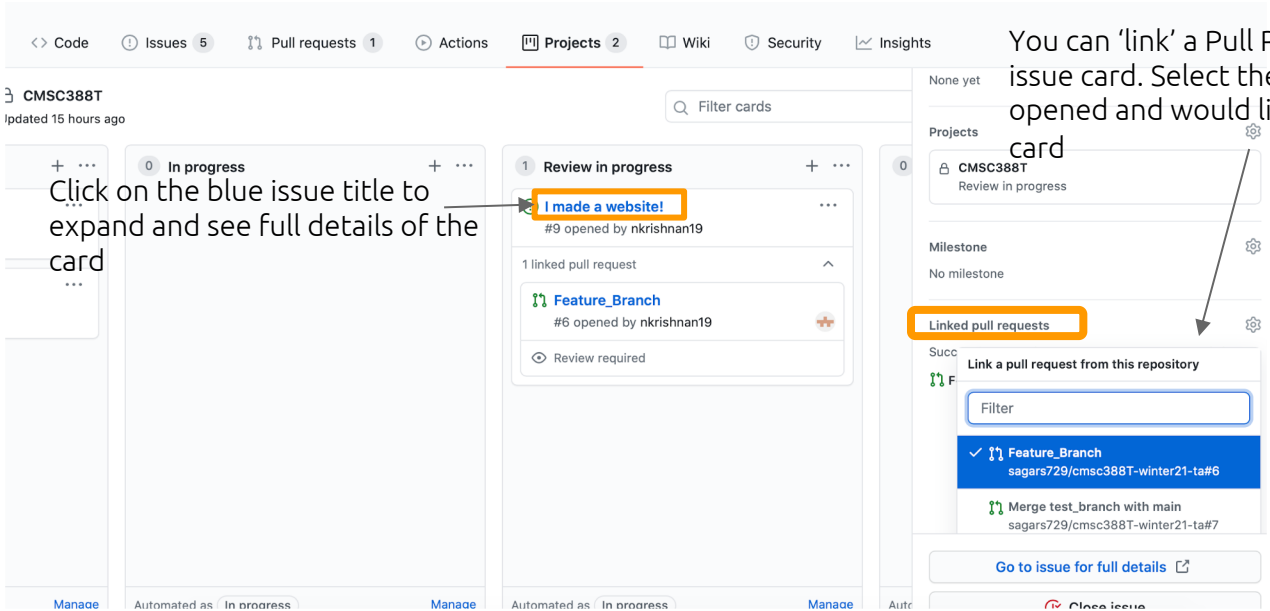
Collaborate with Github Project Manager

Use the Kanan Board to keep track of progress among teammates



Collaborate with Github Project Manager

Link Pull Requests to Issue Cards in order to keep track of all assignments

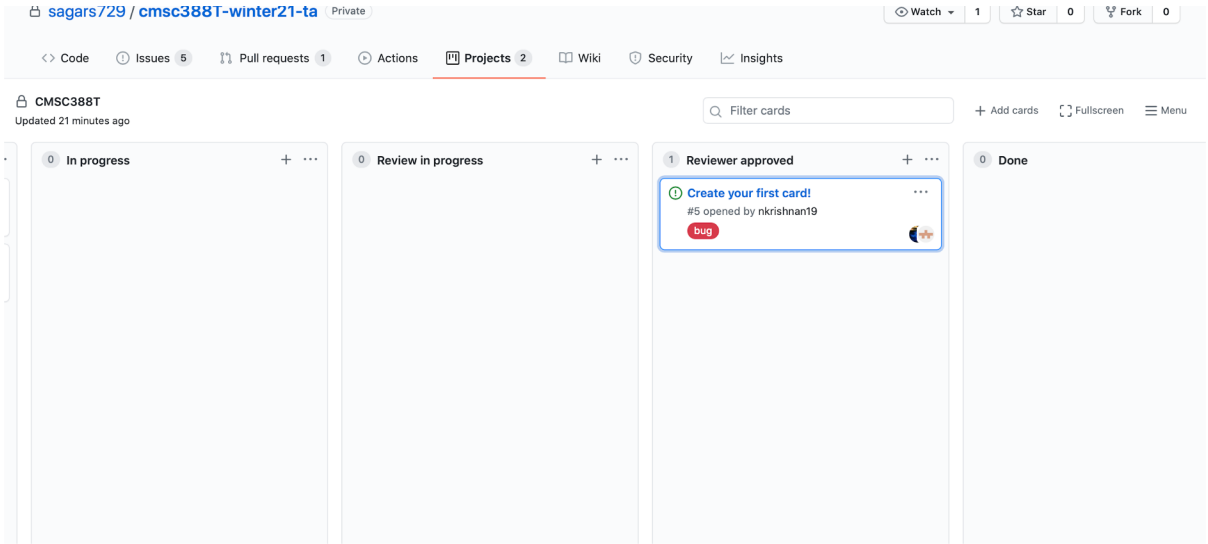


Click on the blue issue title to expand and see full details of the card

You can 'link' a Pull Request to an issue card. Select the PR that you opened and would like to link to the card

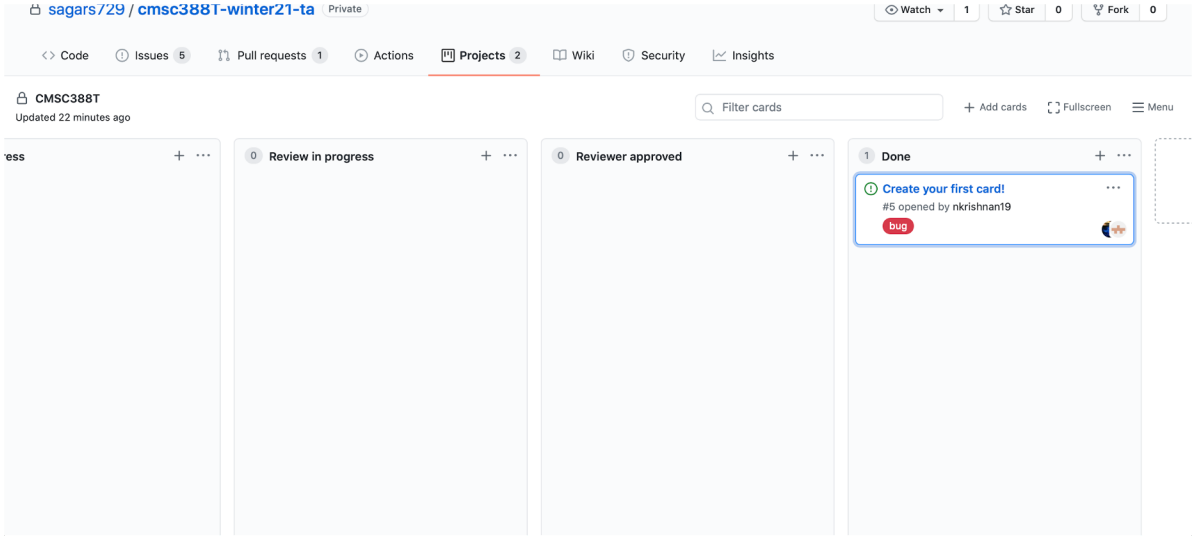
Collaborate with Github Project Manager

Once the Assigned Reviewer approves the PR, it can be updated as such on the Project Board

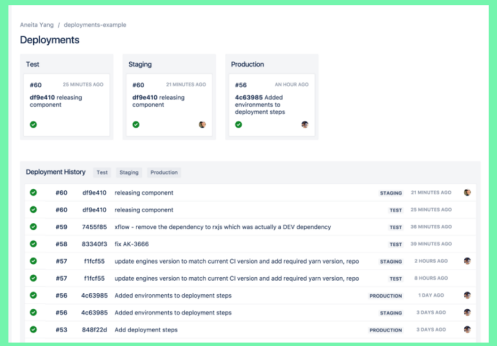


Collaborate with Github Project Manager

Use the Project to have transparency within group members about stages of assignments



Clicker Quiz: Which of the following is an example of a Kanban Board?



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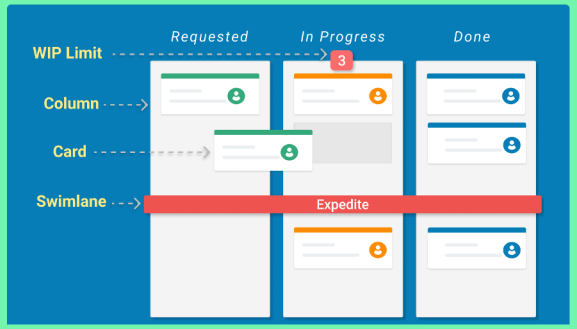

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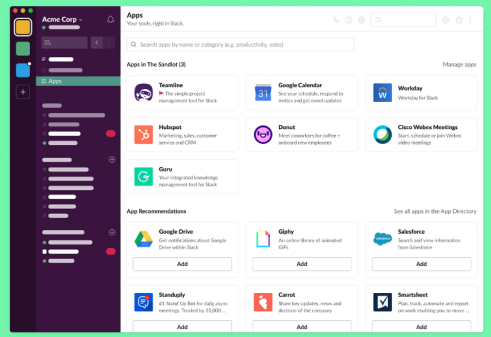

D.

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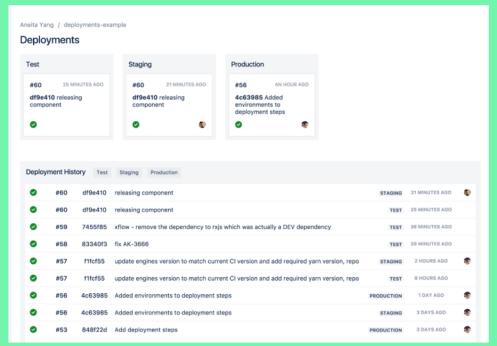

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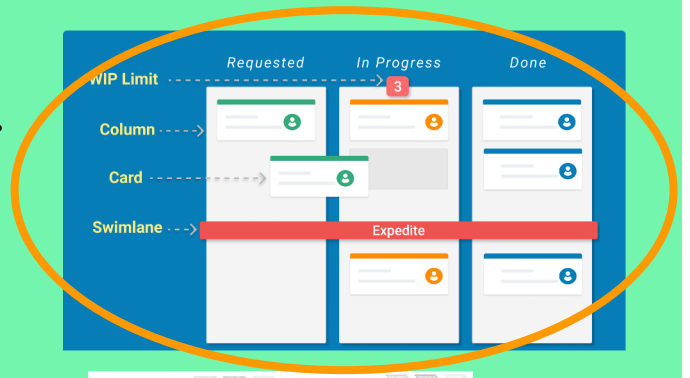

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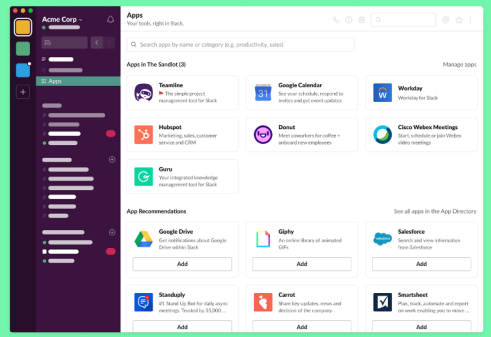

D.

ReadME.md

- Description of the project and contains useful information for someone who visits the repository or project
  - What is the project purpose
  - How should it be used
  - Why is it useful
  - Who contributes to project

ReadME.md

header

numbered list

bullets

```
# readme

This repository has a few templates for README files and some notes about which type of information you could write on them.


## Prepare the content

Readme files are made for developers (including you), but also could be used for the final users.
So while you are writing your readme files please consider a few things:

1. What is about?
    - Describe the content of your project or repository
    - Explain things the users would have a hard time understanding right away
2. What steps need to be taken?
    - Do they need to install any software?
    - Is there any hardware requirements or dependencies?
    - After the installation, how they compile or run the code?
3. Execution examples
    - You could provide examples of execution with code and screenshots

other things you could add:

- Table of content
- Test cases
- Know bugs
- Version
- Contributors
- License
- References

## Templates

- _cheatsheet.md
    - a simple markdown cheatsheet (in construction)
- assignment.md
    - an example of an university assignment
```

ReadME.md

````
### Sub-lists

```
1. You could have
    1. ordered sub-lists
        1. in different levels
2. Same thing
    - for unordered
        - sub-lists

- Doesn't matter if the main list is
    1. ordered or unordered
    2. you could mix them
        - in any level
- You could also align some text with
    - other items
        without list-style
```

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````

ordered list and sub lists

embedded Links

````
## 5. Links

URLs and URLs in angle brackets will automatically get turned into links as in <www.mozilla.org/en-US/firefox/>

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```


You could also paste the link in a new line without angle brackets:

```
https://www.mozilla.org/en-US/firefox/

```

https://www.mozilla.org/en-US/firefox/

Or you could use inline-style link:

```
[Firefox](https://www.mozilla.org/en-US/firefox/)
```

[Firefox](https://www.mozilla.org/en-US/firefox/)
````

ReadME.md

Embed Images & Videos

````
## 6. Images

```
![alt text](https://github.com/inessadl/readme/blob/master/img/ff_logo2013.png)
```

![alt text](https://github.com/inessadl/readme/blob/master/img/ff_logo2013.png)



## 7. Youtube videos

They can't be added directly but you can add an image with a link to the video like this:

[![image alt text](https://github.com/inessadl/readme/blob/master/img/ue4.jpg)](https://www.youtube.com/watch?v=XJOqXK9v3ok)
````

ReadME.md

Code block in README.md

````
# TestRepo

**Example Code Block**
```java
System.out.println("Hello World");
```

**Example Code Block**
```python
print("Hello World")
```
````

Code View in README.md