Subject Name: Source Code Management

Subject Code : CS-181

Cluster : ALPHA

Department: DCSE

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Submitted To :-

DR. Gagandeep Kaur

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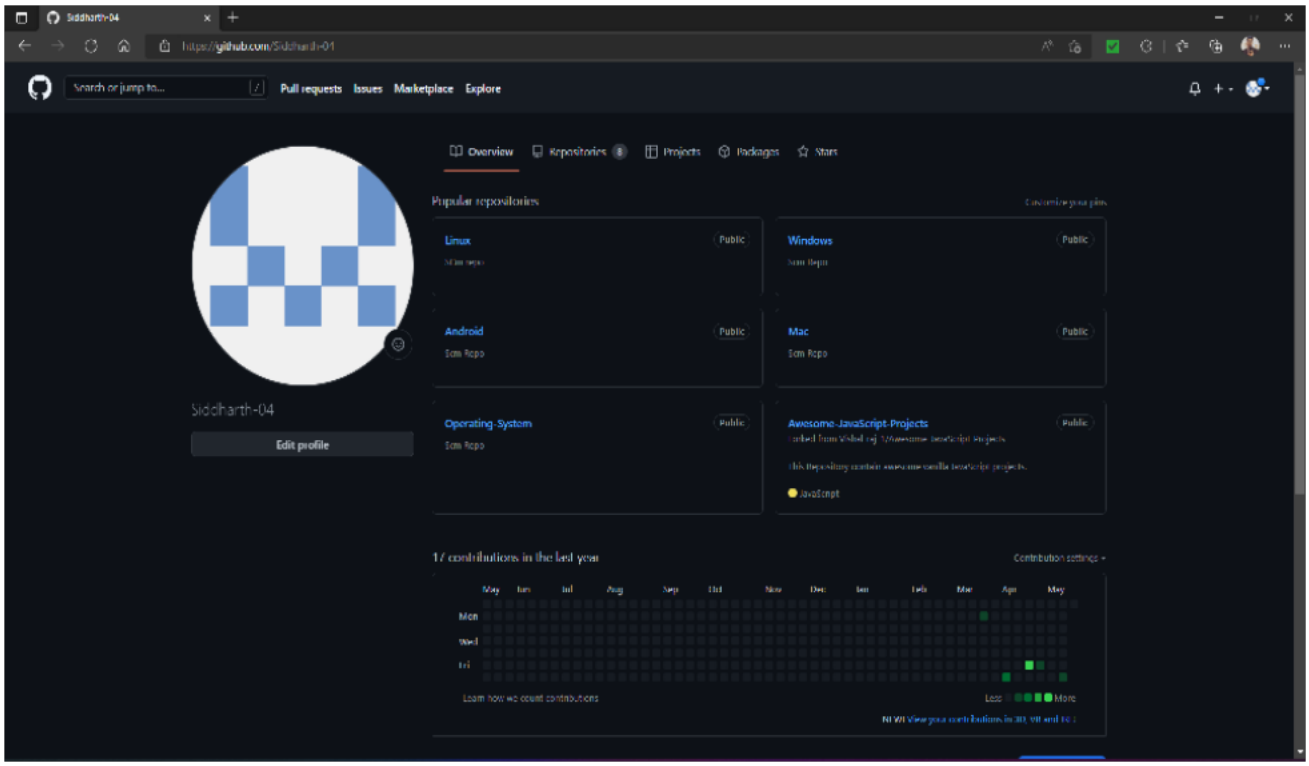
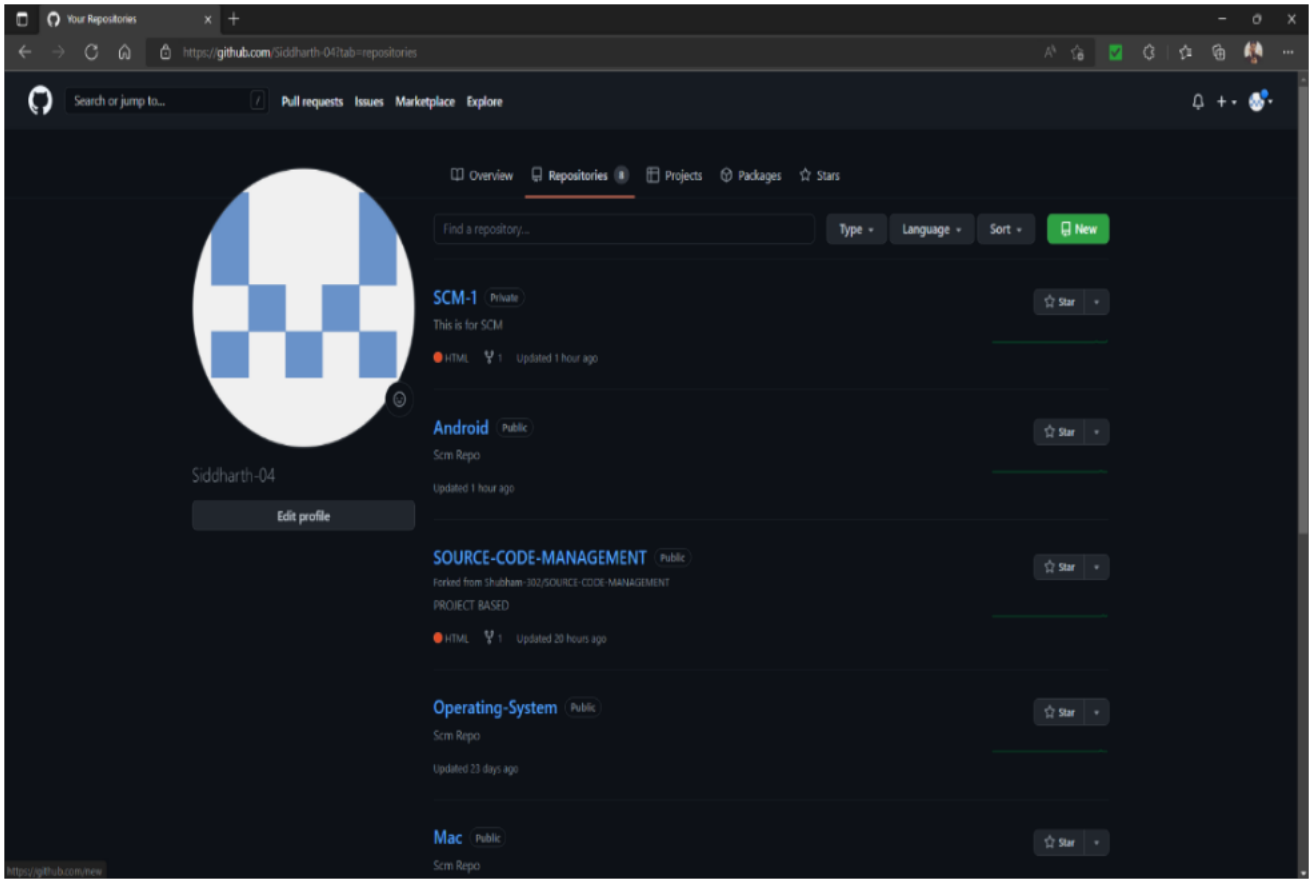
Aim: Create a distributed Repository and add members in project team

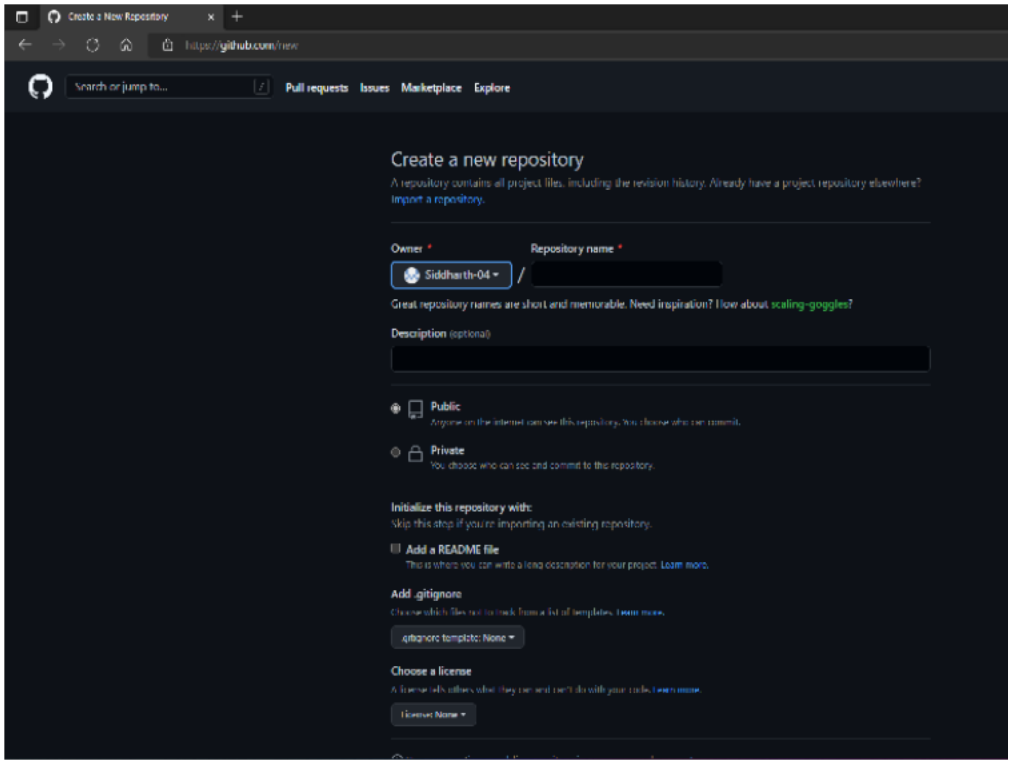
- Login to your GitHub account and you will land on the homepage as shown below. Click on Repositories option in the menu bar.



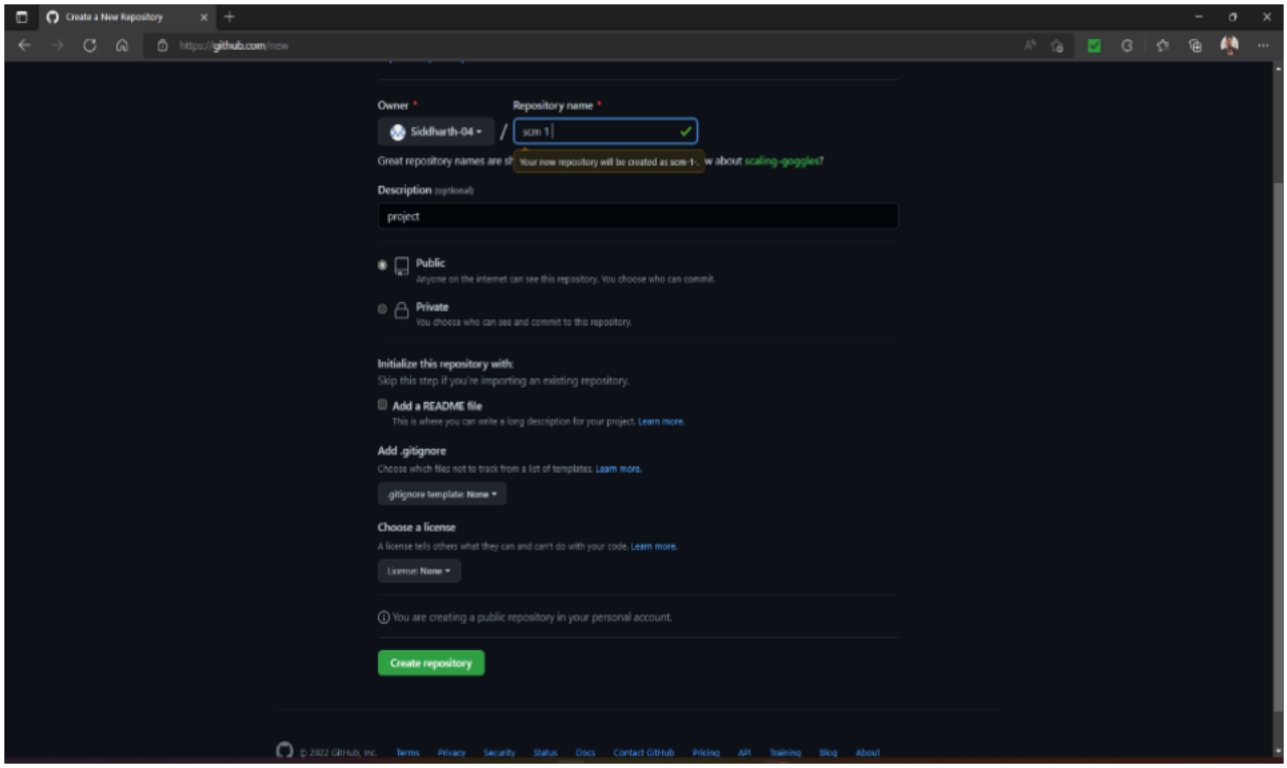
- Click on the 'New' button in the top right corner.



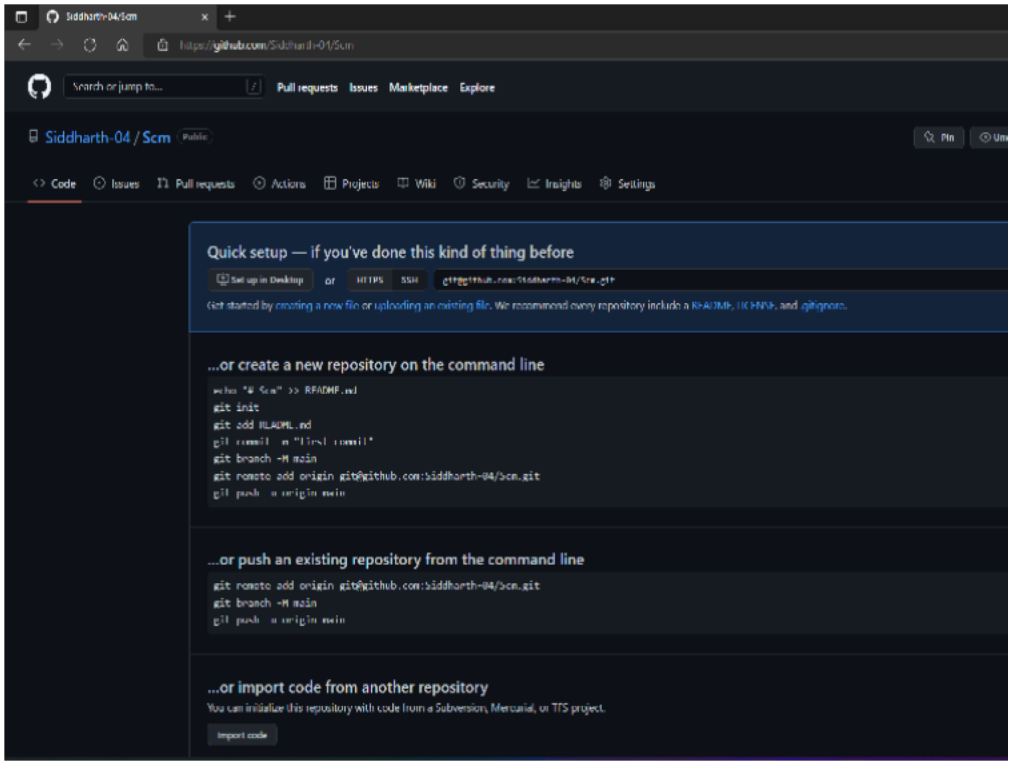
- Enter the Repository name and add the description of the repository.



- Select if you want the repository to be public or private.
- Click to the create repository.

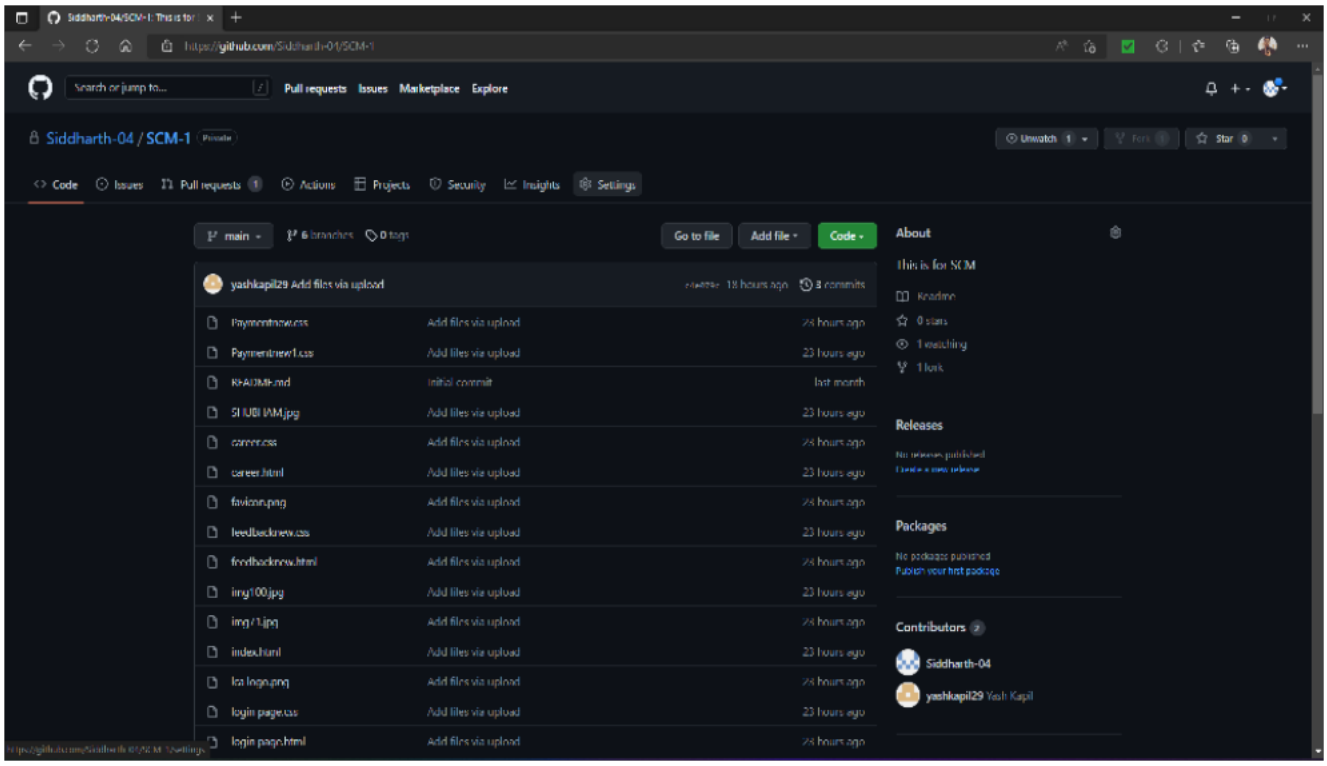


- If you want to import code from an existing repository select the

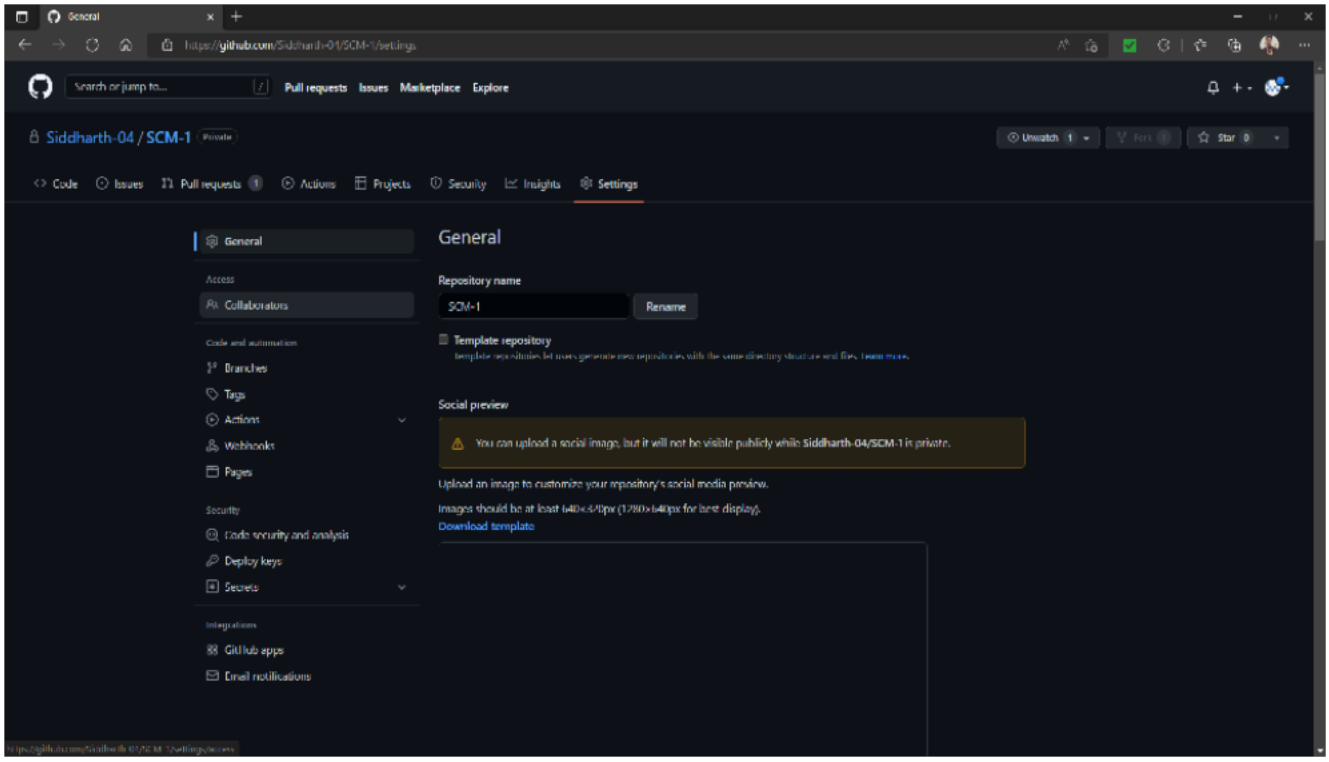


import code option.

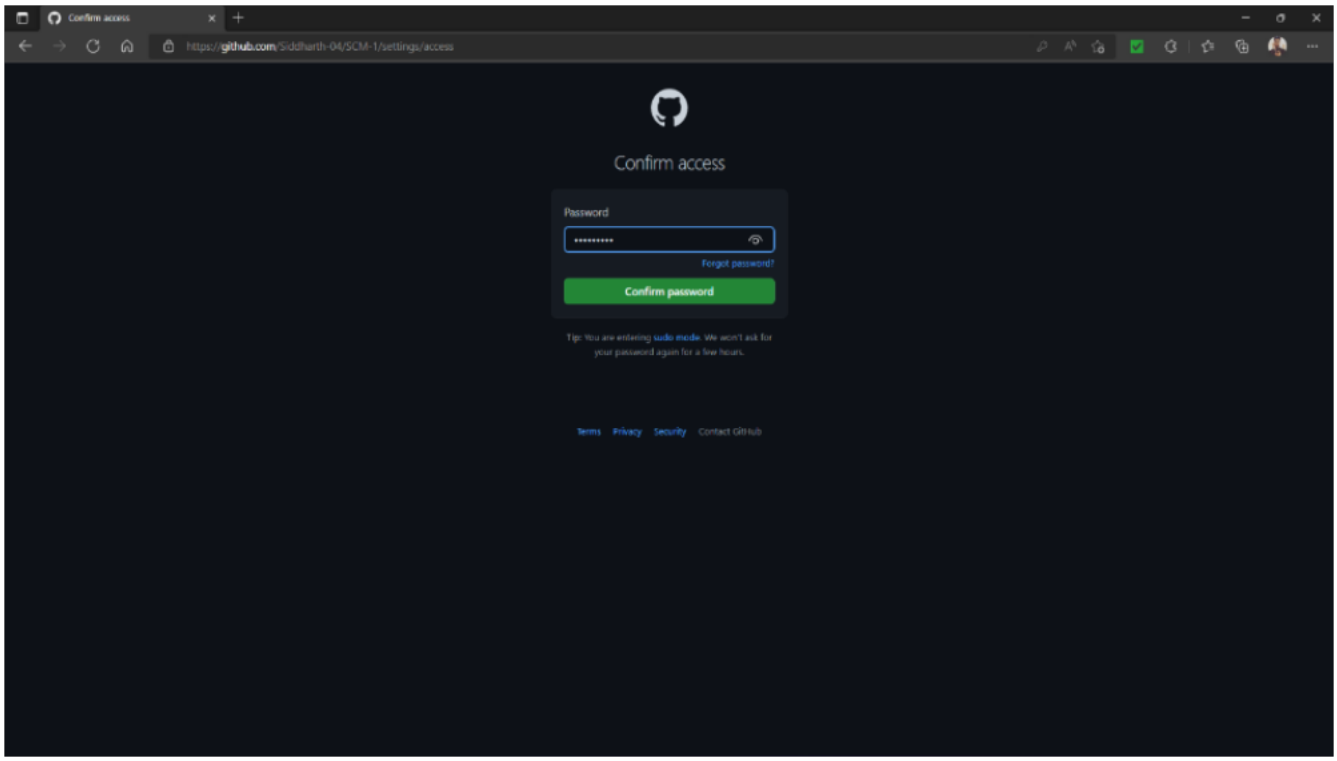
- Now, you have created your repository successfully.
- To add members to your repository, open your repository and select settings option in the navigation bar.



- Click on Collaborators option under the access tab.

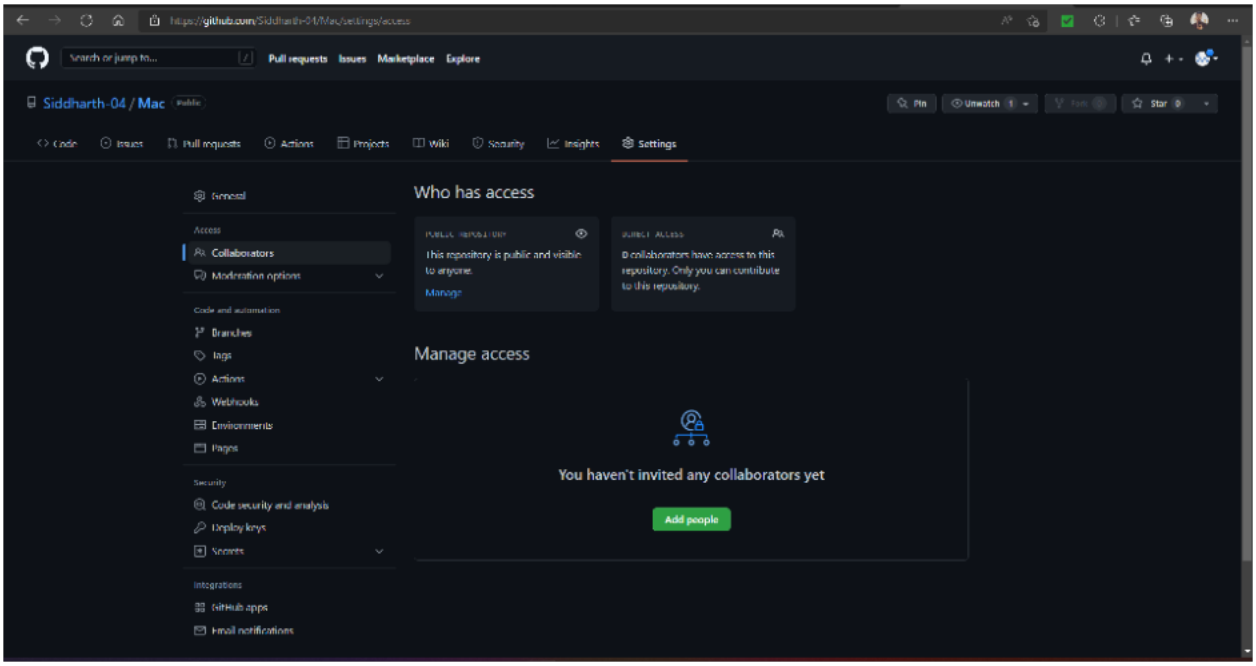


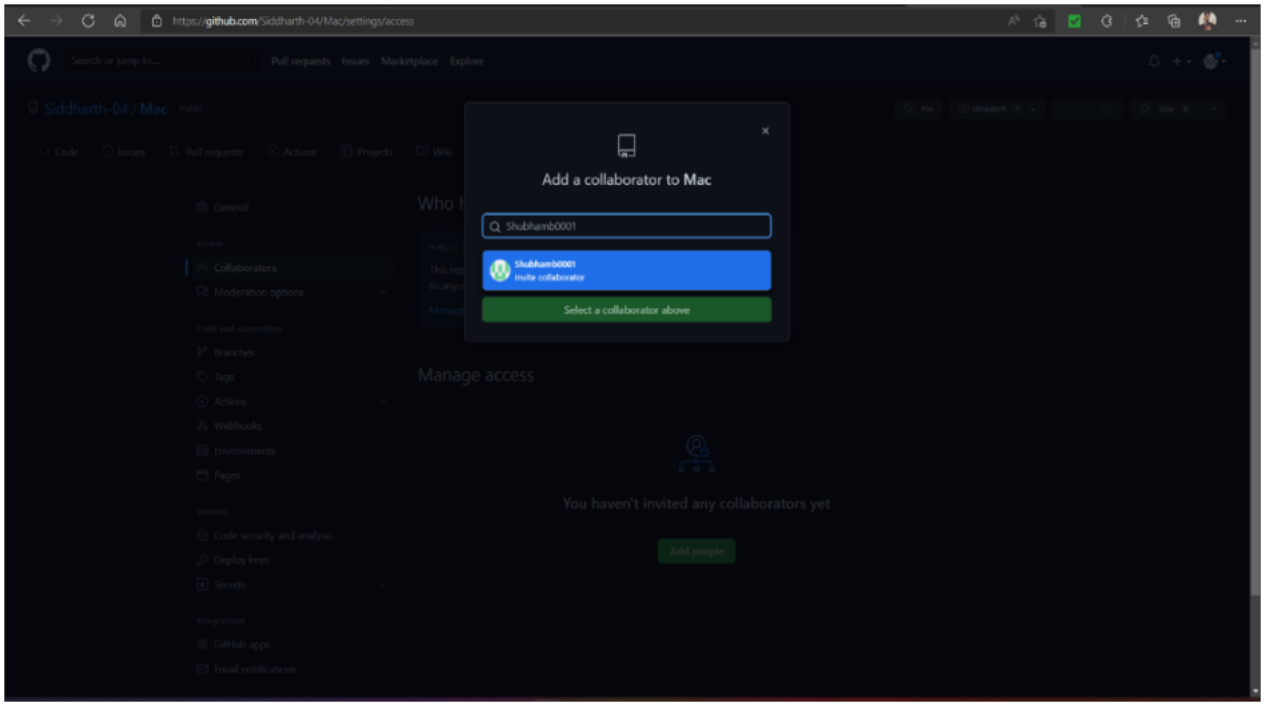
- After clicking on collaborators GitHub asks you to enter your password to confirm the access to the repository.



After entering the password, you can manage access and add/remove team members to your project.

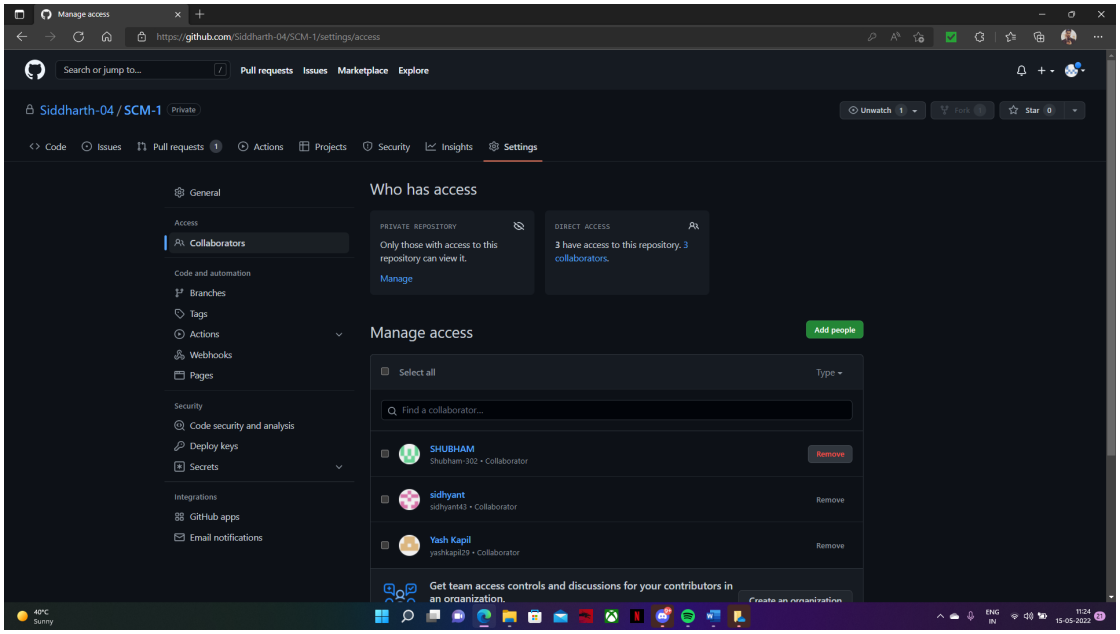
- To add members, click on the add people option and search the id of your respective team member.





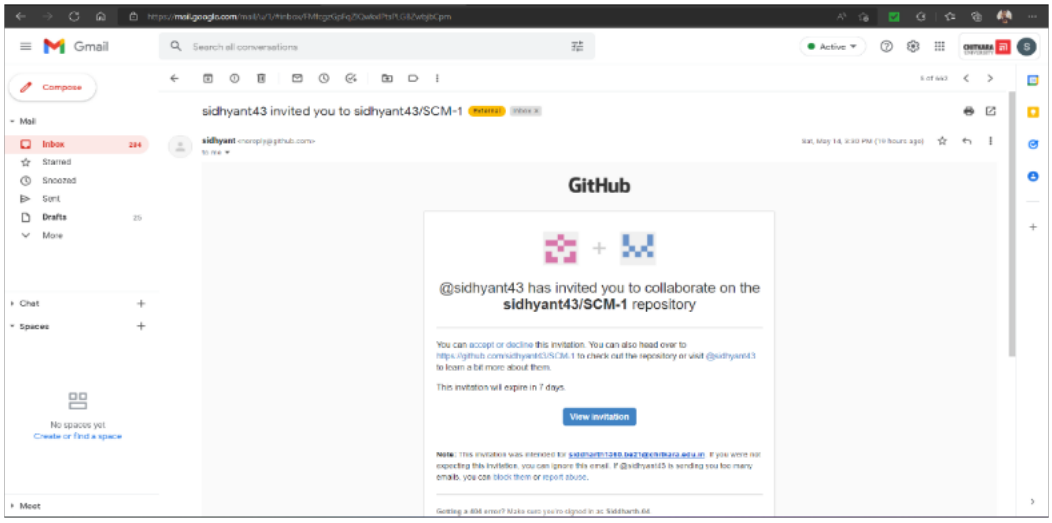
- Now, click on green box to add member in your repository.

- To remove any member, click on remove option available in the last column of member's respective row.



To accept the invitation from your team member, open your email registered with GitHub.

- You will receive an invitation mail from the repository owner. Open the email and click on accept invitation.
- You will be redirected to GitHub where you can either select to accept or decline the invitation.



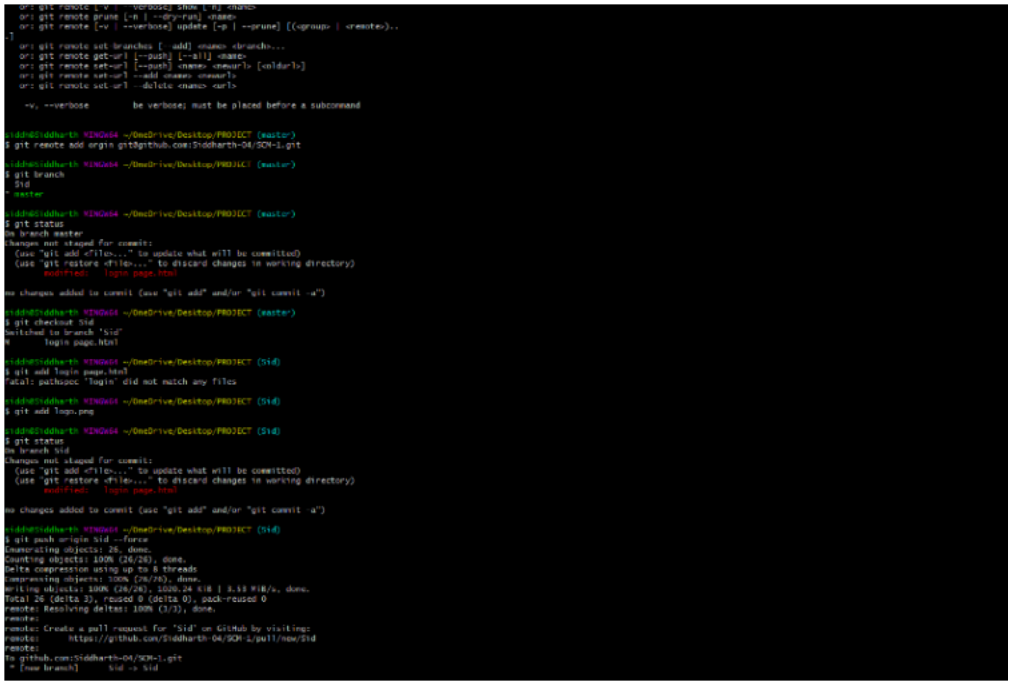
- Now all members are ready to contribute to project

Experiment :- 2

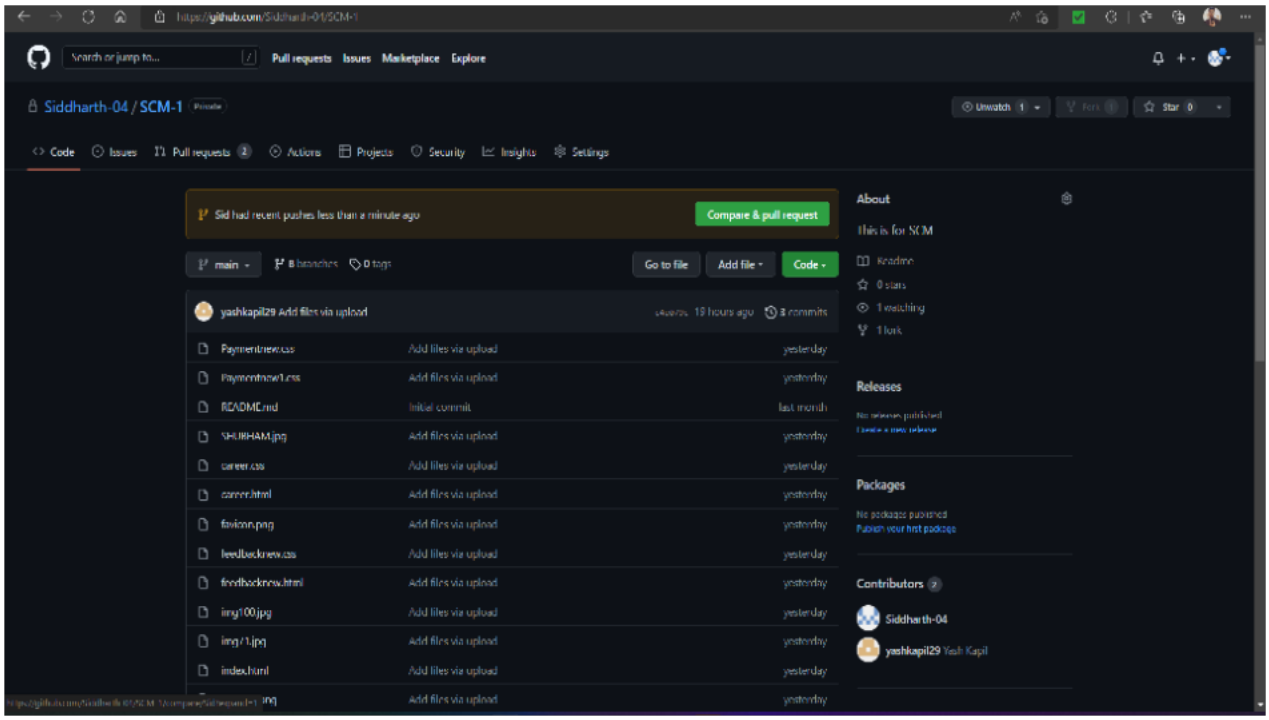
Aim: Open and Close a Pull Request

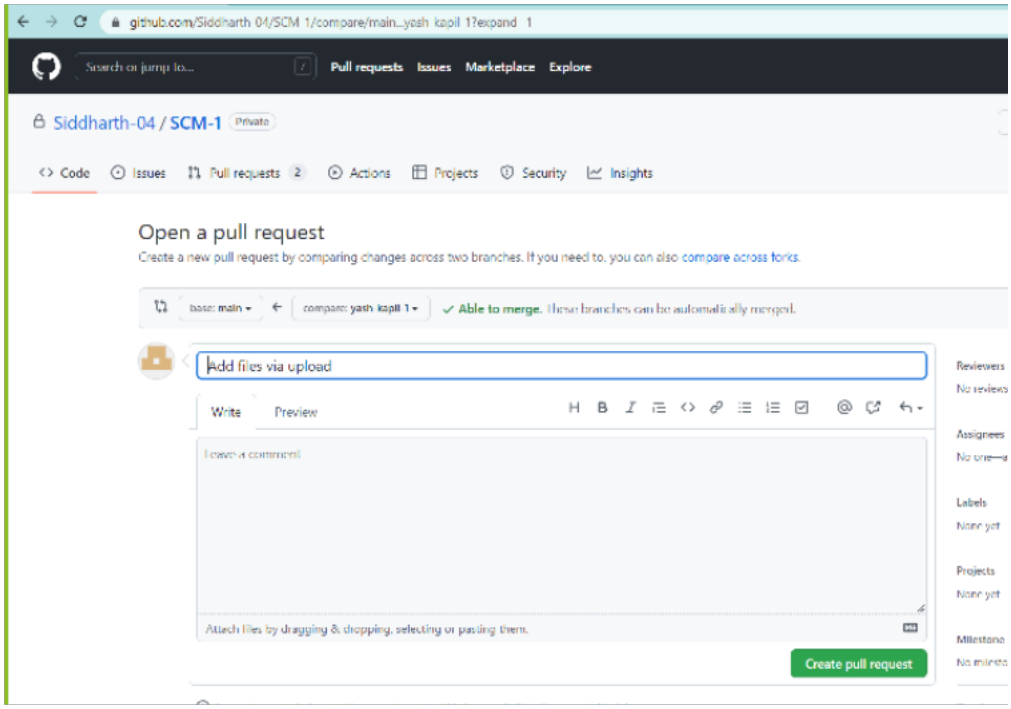
- To open a pull request we first have to make a new branch, by using git branch.
- After making new branch we add a file to the branch or make changes in the existing file.

- Add and commit the changes to the local repository.
- Use git push origin to push the new branch to the main repository

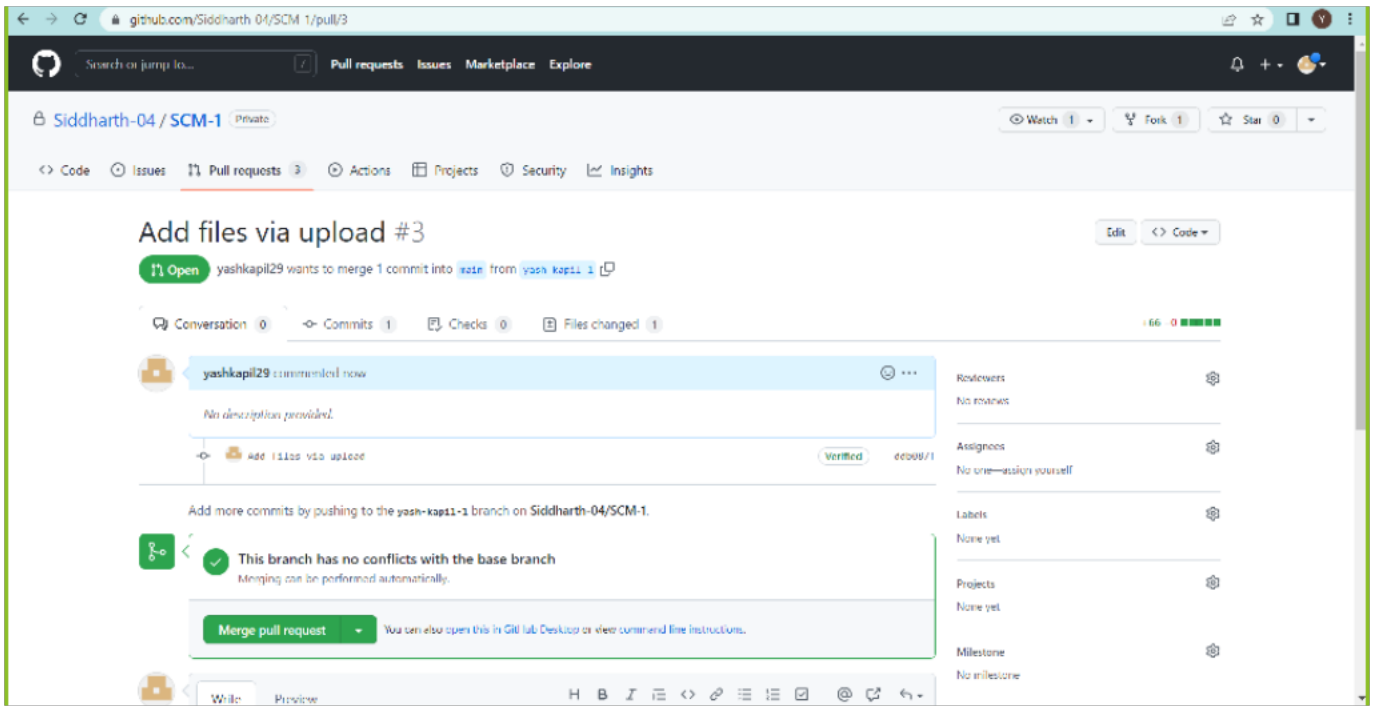


- After pushing new branch GitHub will either automatically ask you to create a pull request or you can create your own pull request by selecting the option compare & pull request.

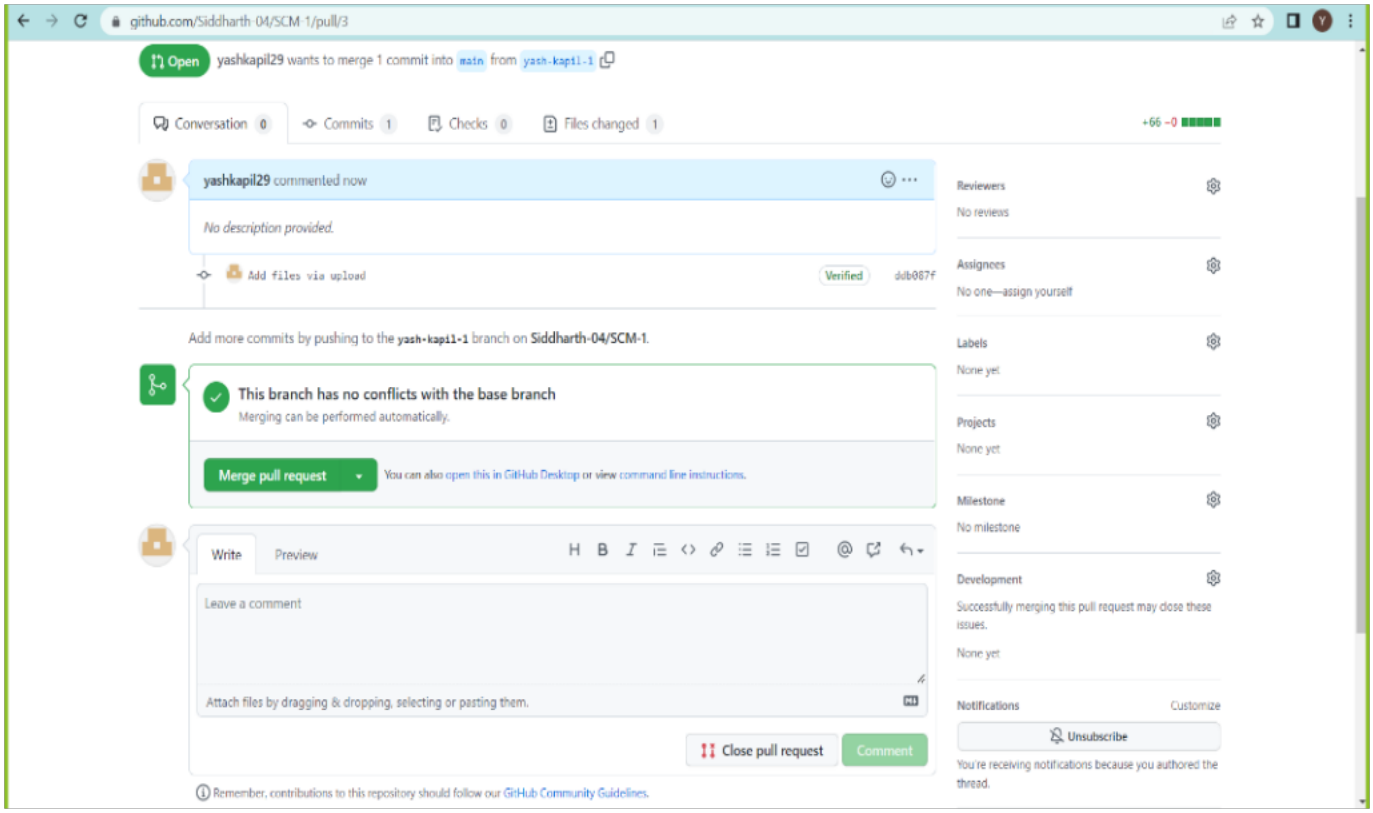




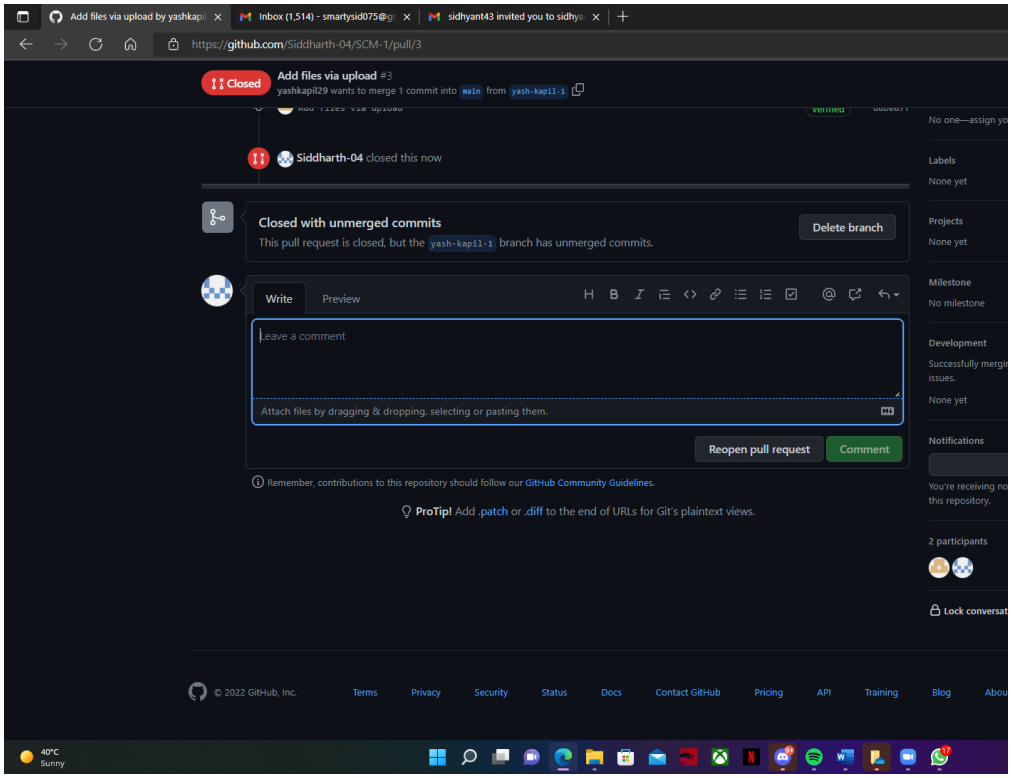
- To create your own pull request, click on create pull request option.
- GitHub will detect any conflicts and ask you to enter a description of your pull request.



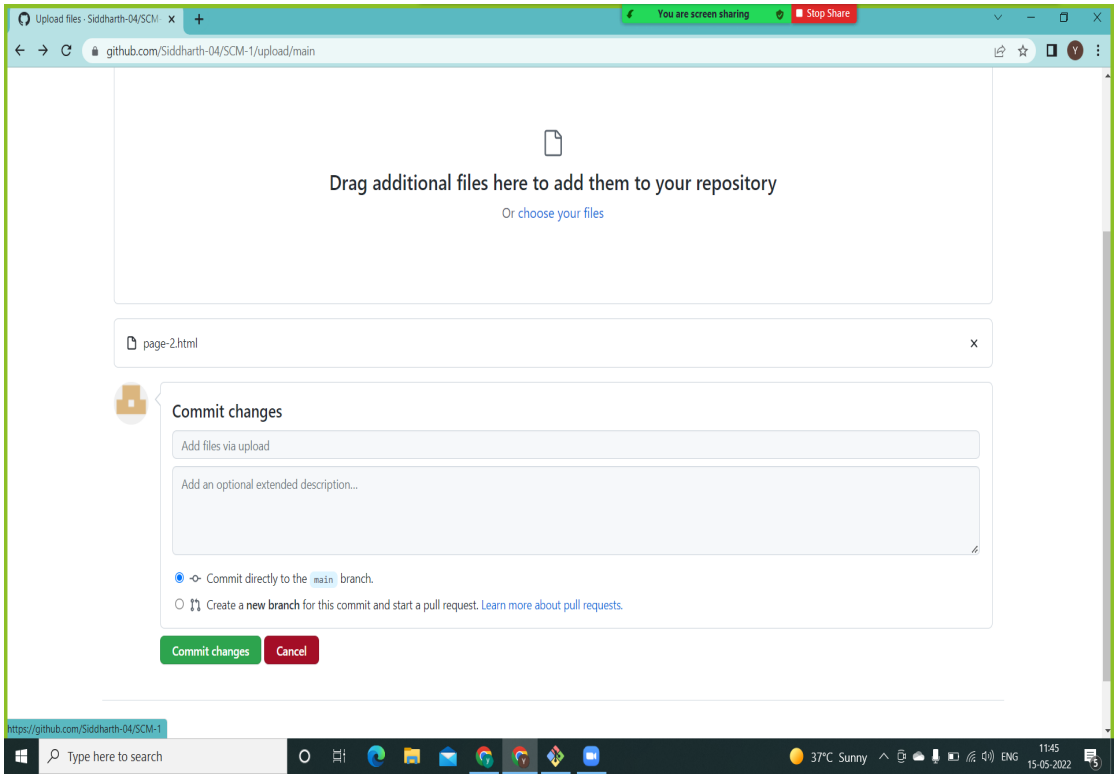
- After opening a pull request all the team members will be sent the request if they want to merge or close the request.



- If the team member chooses not to merge your pull request they will close the pull request.
- To close the pull request simply click on close pull request and add comment/ reason why you closed the pull request.
- You can see all the pull request generated and how they were dealt with by clicking on pull request option.



If the Pull request is successfully merged by the team member:

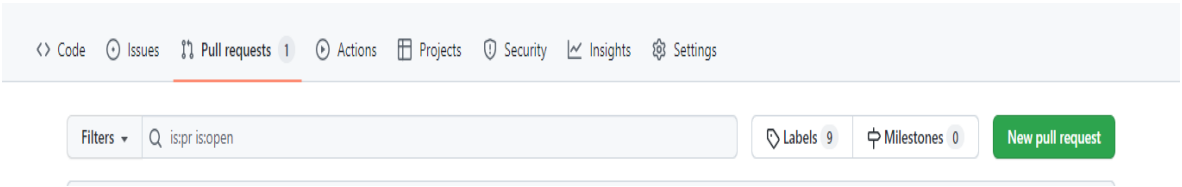


Experiment No. 03

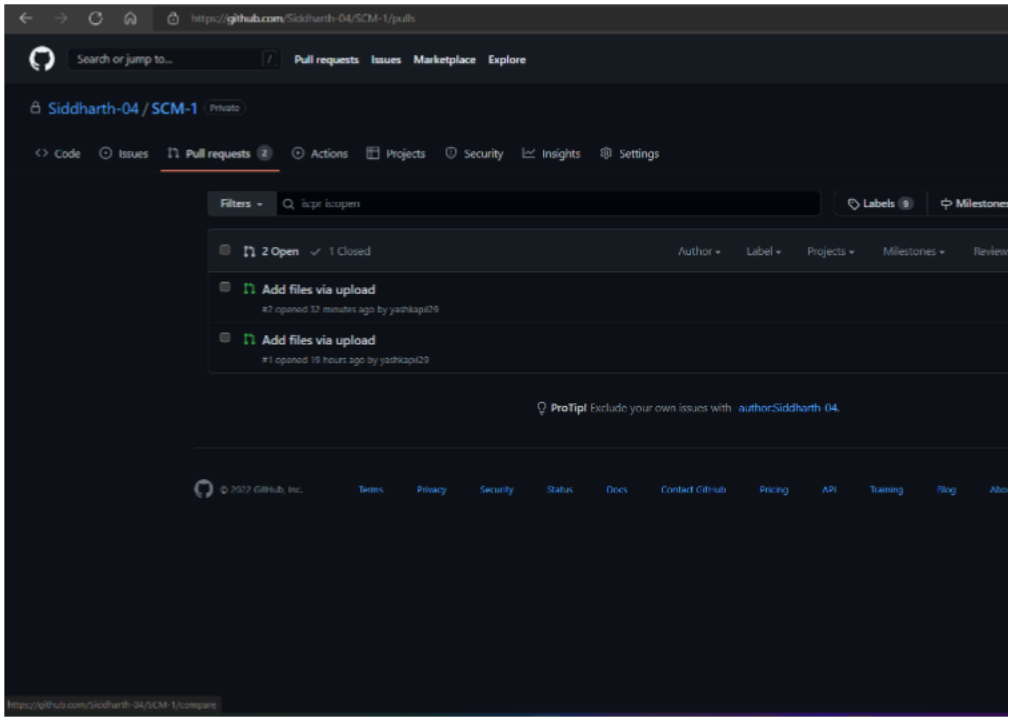
Aim: Create a pull request on a team member's repo and close pull requests generated by team members on own Repo as a maintainer

To create a pull request on a team member's repository and close requests by any other team members as a maintainer follow the procedure given below: -

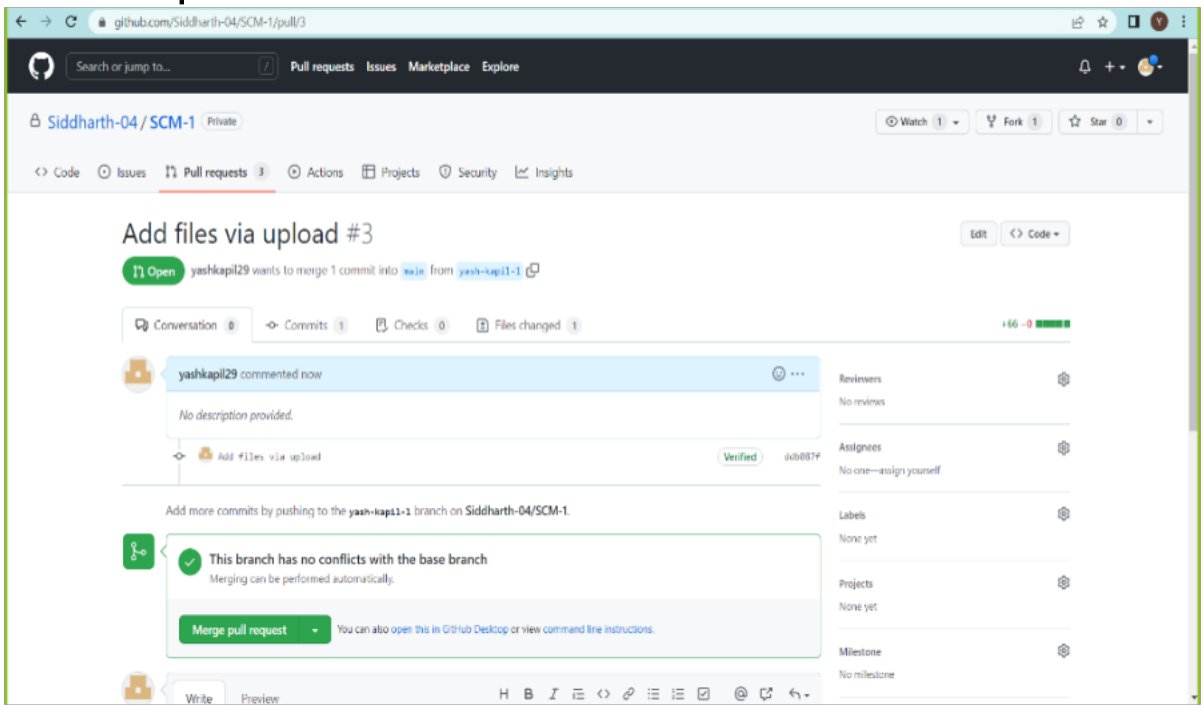
- Do the required changes in the repository, add and commit these changes in the local repository in a new branch.
- Push the modified branch using git push origin branchname.
- Open a pull request by following the procedure from the above experiment.
- The pull request will be created and will be visible to all the team members.
- Ask your team member to login to his/her Github account.
- They will notice a new notification in the pull request menu.



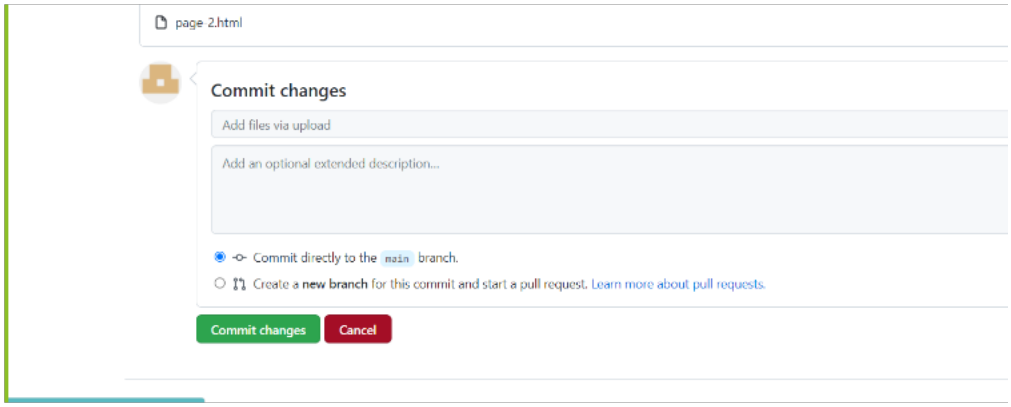
- Click on it. The pull request generated by you will be visible to them.



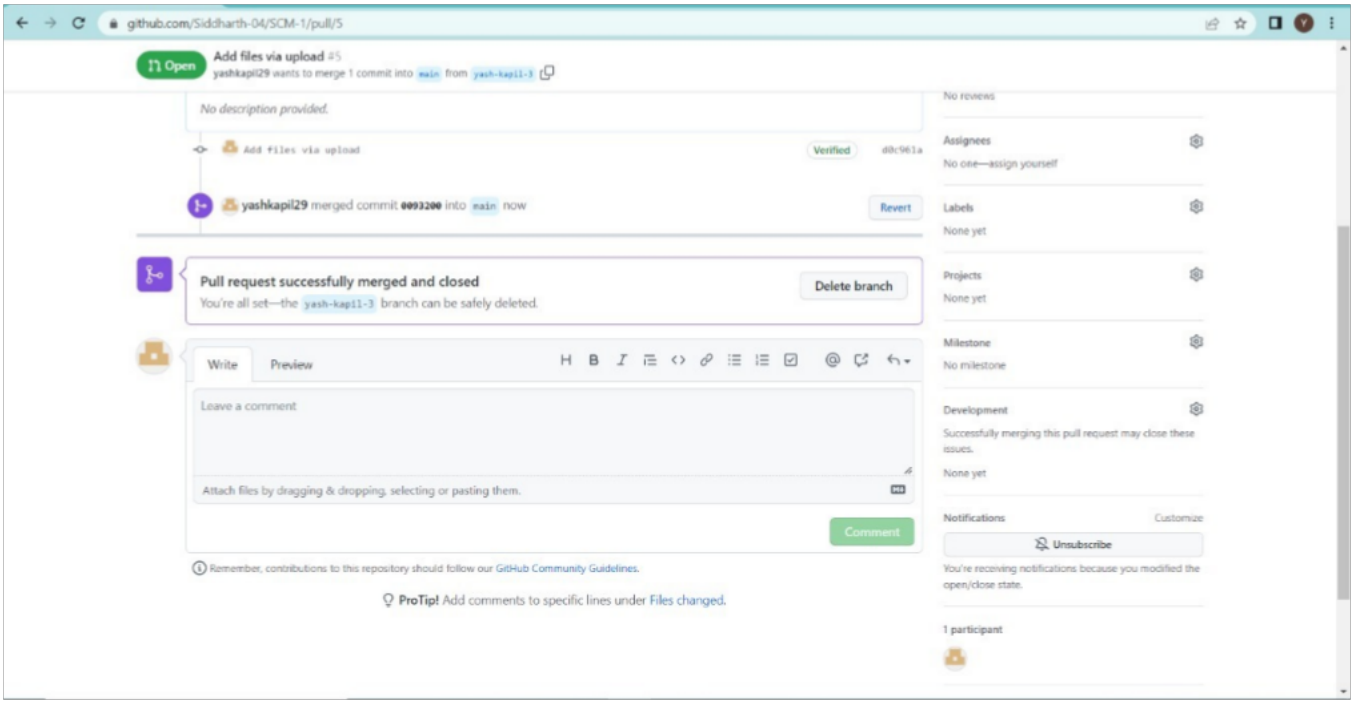
- Click on the pull request. Two options will be available, either to close the pull request or merge the request with the main branch.
- By selecting the merge pull request, the main branch will get updated for all the team members.



- By selecting close the pull request the pull request is not accepted and not merged with main branch.



- The process is similar to closing and merging the pull request by you. It simply includes an external party to execute.
- The result of merging the pull request is shown below.



Experiment :- 4

Aim: Publish and print network graphs

The network graph is one of the useful features for developers on GitHub. It is used to display the branch history of the entire repository network, including branches of the root repository and branches of forks that contain commits unique to the network.

A repository's graphs give you information on traffic, projects that depend on the repository, contributors and commits to the repository, and a repository's forks and network. If you maintain a repository, you can use this data to get a better understanding of who's using your repository and why they're using it.

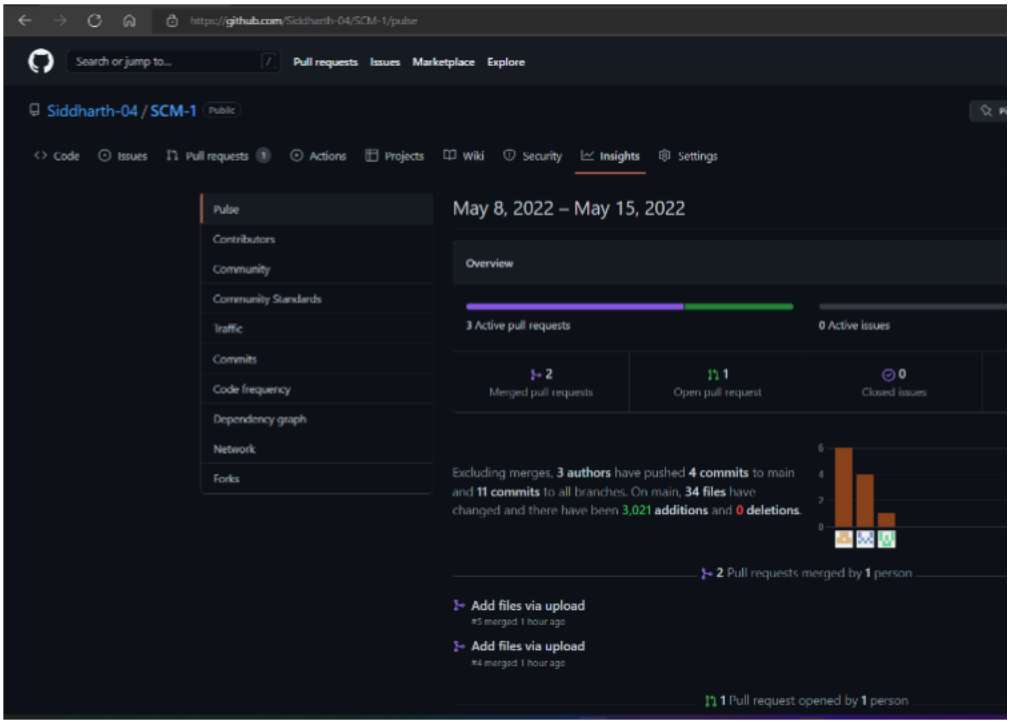
Some repository graphs are available only in public repositories with GitHub Free:

- Pulse
- Contributors
- Traffic
- Commits
- Code frequency
- Network

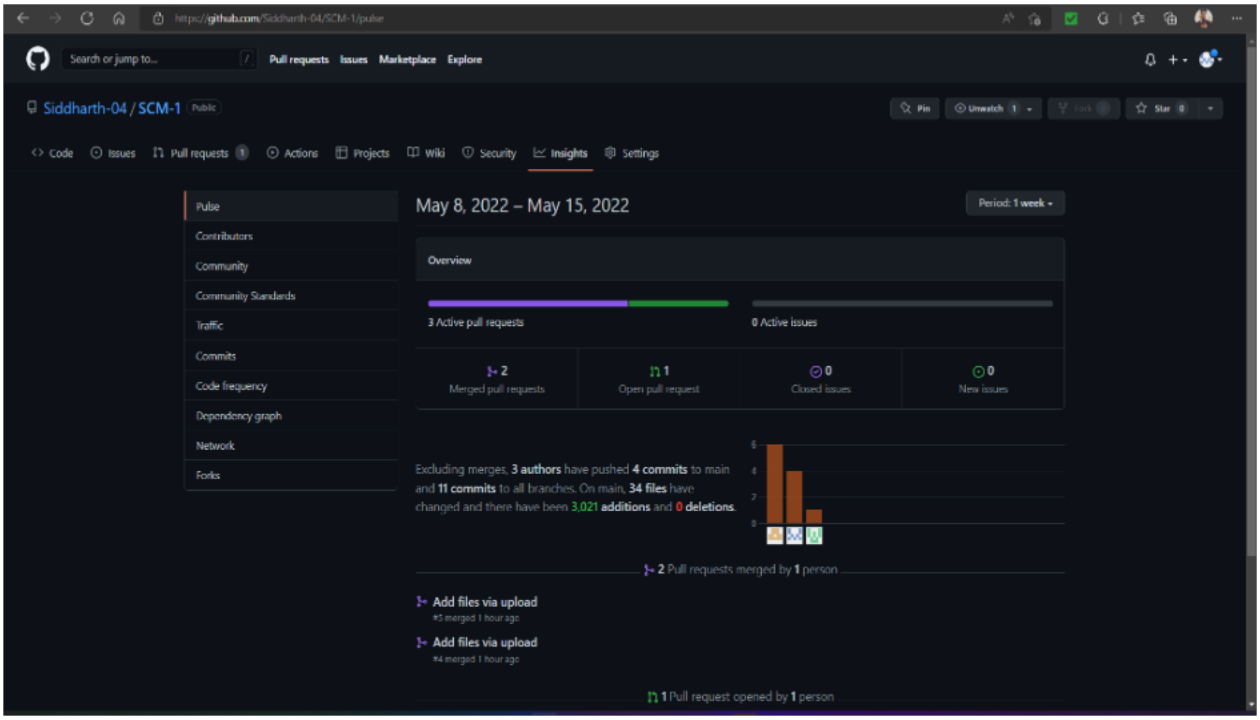
Steps to access network graphs of respective repository

1. On GitHub.com, navigate to the main page of the repository.

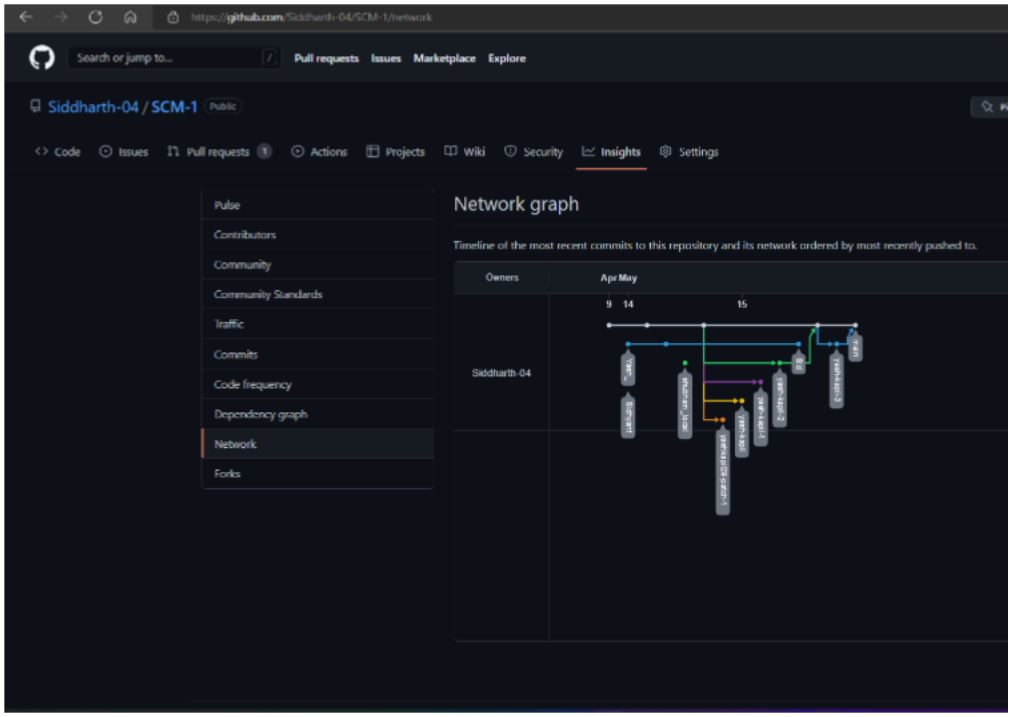
2.Under your repository name, click Insights.



3.At the left sidebar, click on Network.



You will get the network graph of your repository which displays the branch history of the entire repository network, including branches of the root repository and branches of forks that contain commits unique to the network.

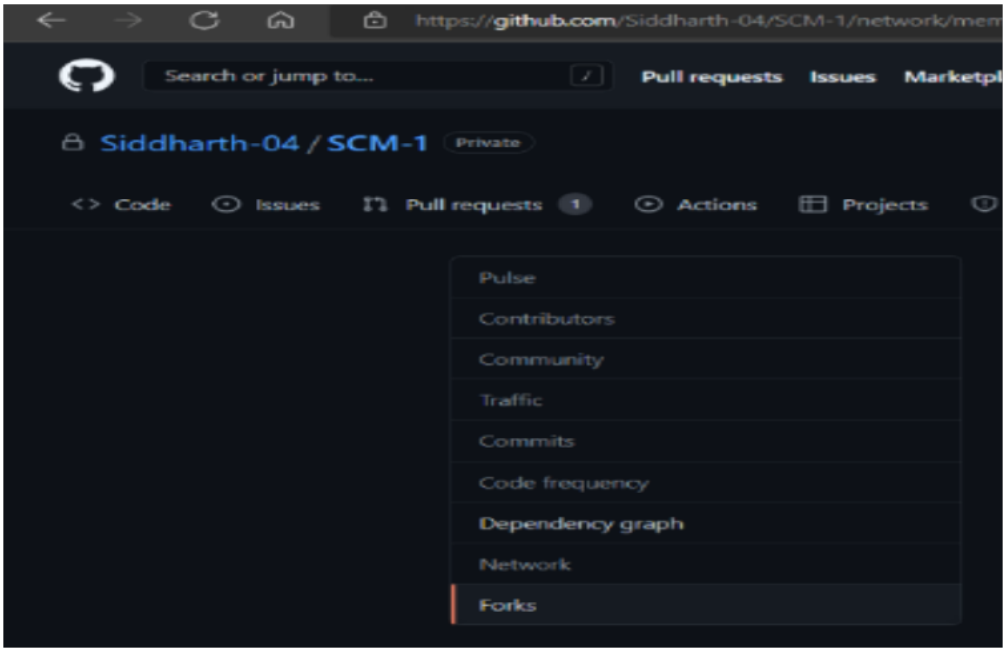


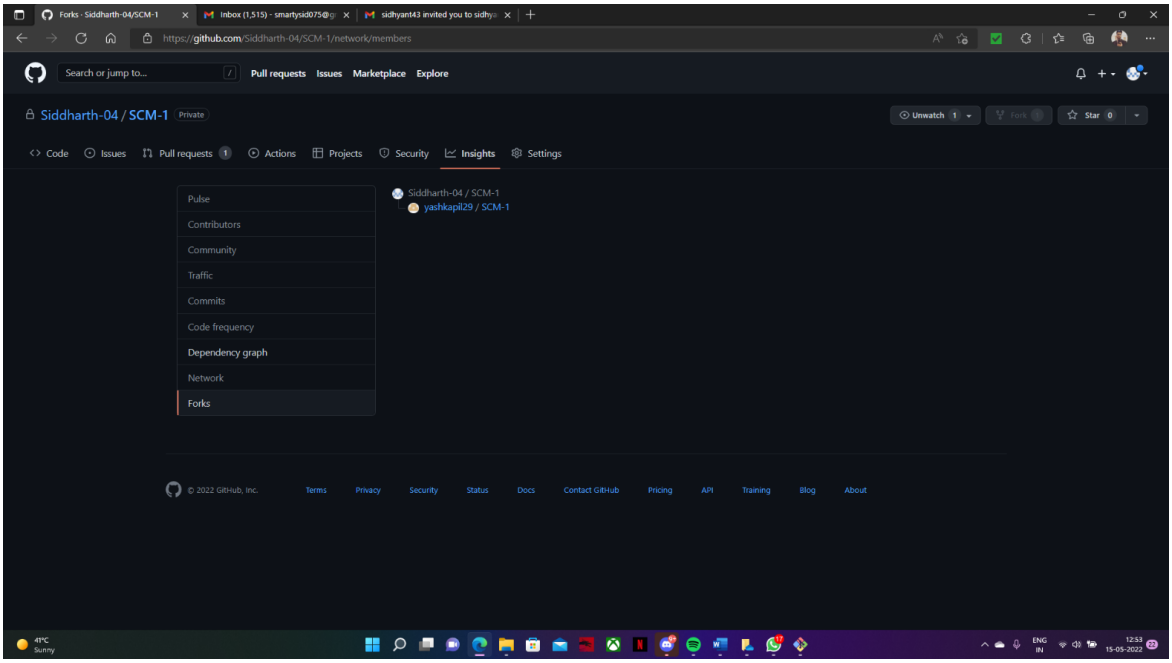
Listing the forks of a repository

Forks are listed alphabetically by the username of the person who forked the repository

Clicking the number of forks shows you the full network. From there you can click "members" to see who forked the repo

1. On GitHub.com, navigate to the main page of the repository.
2. Under your repository name, click Insights.





Here on left sidebar, click on forks

Here you can see all the forks

Viewing the dependencies of a repository

You can use the dependency graph to explore the code your repository depends on.

Almost all software relies on code developed and maintained by other developers, often known as a supply chain. For example, utilities, libraries, and frameworks. These dependencies are an integral part of your code and any bugs or vulnerabilities in them may affect your code. It's important to review and maintain these dependencies.