THADOMAL SHAHANI TSEC ENGINEERING COLLEGE

Assignment No. 2

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B-12 - 26

Aim:- To study and implement different GitHub commands.

Theory:-

GitHub is a web-based version-control and collaboration platform for software developers. It is a code hosting platform for collaboration and version control. GitHub lets you (and others) work together on projects. Today, Millions of developers and companies build, ship, and maintain their software on GitHub - the largest and most advanced development platform in the world. Additionally, anyone can sign up and host a public code repository for free, which means GitHub is especially popular with open-source projects. The branching and merging are two essentials steps in GitHub.

With branching, a developer duplicates part of the source code (called the repository). The developer can then safely make changes to that part of the code without affecting the rest of the project. Then, once that developer gets his or her part of the code working properly, he or she can merge that code back into the main source code to make it official.

The GitHub essentials are:-

- Repositories
- Branching
- Commits
- Pull Requests
- Fork requests
- Cloning

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A GitHub repository can be used to store a development project. It can contain folders and any type of files (HTML, CSS, JavaScript, Documents, Data, Images). A GitHub repository can also be used to store ideas, or any resource that you want to share.

A GitHub branch is used to work with different versions of a repository at the same time. By default a repository has a master branch (a production branch). Any other branch is a copy of the master branch (as it was at point in time.). New Branches are for bug fixes and feature work separate from the master branch. When changes are ready, they can be merged into the master branch. If you make changes to the master branch while working on a new branch, these updates can be pulled in. At GitHub, changes are called commits. Each commit (change) has a description explaining why a change was made.

Pull Requests are the heart of GitHub collaboration. With a pull request proposing that your changes should be merged (pulled in) with the master. Pull requests show content differences, changes, additions, and subtractions in colors (green and red).

"Forking" is when you create a new project based off of another project that already exists. This is an amazing feature that vastly encourages the further development of programs and other projects. If you find a project on

GitHub that you'd like to contribute to, you can fork the repo, make the changes you'd like, and release the revised project as a new repo.
Cloning is used to target an existing repository and create a clone, or copy of the target repository.

The useful GITHUB commands are listed below.

1. git remote add origin https://github.com/Test/MyAlgo.git
This remote will be used to pull any content from the already and push our local content to the global server.

2. Git remote add <address>
To add new remotes to our local repository for a private git address.

3. git remove rm
To remove a remote from our local repository.

4. Git push -u origin master.
To push all the contents of our local repository that belong to master branch to the server (global repository).

5. Git clone https://github.com/mdawan123/MyAlg...git
To clone or make a local copy of the global repository in your system (git clone command downloads the repository and creates a remote named as origin which can be checked by command - git remote -v).

6. Git branch testing
To create a new branch named as testing

7. git branch
To see all the branches present and current branch that we are working on

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8. git checkout testing
To switch to branch testing from master branch.
9. git merge testing
To merge testing branch with master branch.
10. git branch -d testing.
To delete testery branch
11. git tag.
To see the list of available tags.
12. git fetch
To fetch down any changes from global repository to current repository
13. git reset
Three tasks are performed by git reset.

1. Move all changes to master which are not in origin/master to a temporary area
2. Run all origin master commits.
3. Run all commits in the temporary area on top of. our master one at a time, so it avoids merge commits

14. Git push origin - delete [branch_name] :- Deleting specified branch.

15. Git pull :- Helping for updating all the newest commit in the mapping local repository.

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16. Git pull origin [branch-name]: Helping for pulling entire changes from the remote repository to local.

Conclusion:- Thus, we have successfully studied and implemented commands for version control using GITHUB.