

Ex. No. 1	Git & GitHub
12/07/2024	

AIM

Algorithm for Git and GitHub Operations

Algorithm

1. Create a Repository:

- Initialize a new Git repository named "Master".
- Verify repository initialization.

2. Add and Commit Changes:

- Create a new text file named README.md.
- Add content to the README.md file.
- Add the file to the staging area.
- Commit the changes with a message.

3. Exploring History:

- Modify or add content to the text file.
- Add and commit the changes.

4. Branching and Merging:

- Create a new branch named Updated_ReadMe.
- Commit changes in the new branch.
- Merge changes from Updated_ReadMe branch into Master branch.

5. Collaborating with Remote Repositories:

- Link the local repository to a remote repository.

6. Push Changes:

- Push local commits to the remote repository.

7. Cloning a Repository:

- Clone the repository from GitHub.

8. Making Changes and Creating a Branch:

- Navigate into the cloned repository.
- Make necessary changes.
- Check the status of the repository.

9. Pushing Changes to GitHub:

- Add the changes to the staging area.
- Commit the changes.
- Push the local branch to the remote repository.

10. Collaborating through Pull Requests:

- Create a pull request on GitHub.
- Choose base branch and compare with the new branch.
- Review and merge the pull request.
- Add title, description, and assign reviewers.
- Reviewers approve and merge the pull request into the base branch.

11. Syncing Changes:

- Update local repository after the pull request is merged.

Input

```
# Task 1
## a. Create a Repository
git init

## b. Add and Commit Changes
touch README.md
echo "# This is the readme file for devops" > README.md
git add README.md
git commit -m "Added README.md"

## c. Exploring History
echo "# This is the README file for DevOps" > README.md
git add README.md
git commit -m "Corrected content of README.md"

## d. Branching and Merging
git checkout -b Updated_ReadMe
echo "# This is the updated README file for DevOps" > README.md
git add README.md
git commit -m "Updated README.md"
git checkout main
git merge Updated_ReadMe

## e. Collaborating with Remote Repositories
git remote add origin https://github.com/NakshathraP/DevOps.git

## f. Push Changes
git branch -M main
git push -u origin main

# Task 2
## a. Cloning a Repository
git clone https://github.com/NakshathraP/DevOps.git
```

```
## b. Making Changes and Creating a Branch
cd WebTechLab
touch README.md
echo "# This is the README file for WebTechLab" > README.md
git status

## c. Pushing Changes to GitHub
git add .
git commit -m "Added README.md"
git push -u origin main

## d. Collaborating through Pull Requests
# Performed on GitHub:
# 1. Create a pull request.
# 2. Choose base branch and compare with new branch.
# 3. Review and merge the pull request.
# 4. Add title and description.
# 5. Assign reviewers.
# 6. Reviewers approve and merge the pull request.

## e. Syncing Changes
git pull origin main
```

Output

1. Repository Creation:

- A new Git repository named "Master" is created.
- Confirmation message displayed.

2. Add and Commit Changes:

- `README.md` file is created.
- File contents are added.
- File is added to the staging area and committed.

3. Exploring History:

- `README.md` file is modified and changes committed.

4. Branching and Merging:

- New branch `Updated_ReadMe` is created and changes committed.
- Changes are merged into the `main` branch.

5. Collaborating with Remote Repositories:

- Local repository is linked to the remote repository.

6. Push Changes:

- Local commits are pushed to the remote repository.

7. Cloning a Repository:

- Repository is cloned from GitHub.

8. Making Changes and Creating a Branch:

- Changes are made and the status of the repository is checked.

9. Pushing Changes to GitHub:

- Changes are pushed to the remote repository.

10. Collaborating through Pull Requests:

- Pull request is created, reviewed, and merged on GitHub.

11. Syncing Changes:

- Local repository is updated with the latest changes from the remote repository.

```
● PS C:\Users\naksh\Downloads\DevOps> git add .
● PS C:\Users\naksh\Downloads\DevOps> git commit -m "Updated README.md"
[main a15e695] Updated README.md
 1 file changed, 1 insertion(+), 1 deletion(-)
● PS C:\Users\naksh\Downloads\DevOps> git push origin main
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Writing objects: 100% (3/3), 265 bytes | 265.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/NakshathraP/DevOps.git
 eec76fd..a15e695  main -> main
⊗ PS C:\Users\naksh\Downloads\DevOps> git checkout ex1
error: pathspec 'ex1' did not match any file(s) known to git
● PS C:\Users\naksh\Downloads\DevOps> git checkout -b ex1
Switched to a new branch 'ex1'
● PS C:\Users\naksh\Downloads\DevOps> git add .
● PS C:\Users\naksh\Downloads\DevOps> git commit -m "Ex1"
[ex1 5853d15] Ex1
 2 files changed, 132 insertions(+)
 create mode 100644 Lab/Ex1/Ex1.md
 create mode 100644 Lab/photos/.md
```