Git - Software
GitHub - Platform - To host Remote Repositories

Repository - Project Dump

Local Repository - Local Project Dump (Offline) - You
Remote Repository - Global Project Dump (Online) - Everyone

You have created two features - Local Repo - Laptop

If you feel that, your work is completed - immediately you have to push that code to the remote repository.

Push - uploading your code to the repo
Pull - downloading your code from the repo

You - Assignment Owner - Push
Madhu - Assignment Code - Pull

Team Member1 - Developed the Code - Push
Team Member2 - Wants to see what M1 have coded - Pull

Push - Uploaded to Remote Repo
Pull - Downloaded from Remote Repo

Team Member1 -> Push the Code -> GitHub
-> Pull the Code -> Team Member2

Process of creating git repo for assignment (project) -

1. Initialise the Repository - Empty Repository (Local)
2. Write code for the given task - app.py, main.py
3. Add this files to the Local Repository (what?)
4. Commit this change in the repository (who?)
5. Push this local repo to remote repo

Assignment - 1: Hello World in Python

1. Create a New Folder on Desktop
2. Initialise the Repository (Open your Command Prompt)
    1. cd assignment-1
    2. git init
3. Write Program for app.py

    To check status of repo - git status
4. Add app.py to the repository

    git add app.py

    git add .
5. Committing App.py to the repository

    git commit -m “hello world program”

6. Configure your git on your laptop (new user)

```
git config —global user.name “Madhu P”
git config —global user.email “maddy@makeskilled.com"
```

Assignment - 2: You have to push local repository to the remote repository

1. Login into Remote Repository Hub (www.github.com)
2. Create a Remote Repository (Project / Product Owner)
3. Connect Local Repository with Remote Repository

   git remote add origin remote repo
4. Create a branch in the repo

   git branch -m “branchname”
5. Pushing the local repo to remote repo on main branch

   git push origin main

Developer - A - branch1 - submitting his work

Developer - B - branch2 - submitting his work

Team Leader - main branch access
TL - Merge Branch (branch1 & branch2 with main)

It is recommended to push to main branch until unless you are the only one developer in the project.

Scenario - 1:

You are the owner, and you are the developer

You can push to main branch

Scenario -2:

In the same repo, team leader have asked to update hello world to palindrome strings

1. Adding the file to the stagged directory

   git add app.py

2. Commit the changes

   git commit -m “updating hello world to palindrome string”

3. Push to the remote repo

   git push origin main

Scenario - 3:

They have asked you to push to your own branch instead of main branch

1. Create our own branch in the local repo
   git branch - m “madhu”
2. Modifications of the program -
   print palindrome or not palindrome
3. Add the file to the stagged directory
   git add app.py
4. Commit this changes
   git commit -m “printed palindrome message”
5. Push to our own branch (madhu)
   git push origin madhu

Scenario - 4: [Assignment - 4]

You have joined in a team, and your team leader have asked you to get the project from remote repo and make it available on your laptop.

Remote Repo is created already by the Project Owner

https://github.com/maddydevgits/telegram-controlled-iot-lamp.git

You should not re-initialise the repo
You should not push until the team leader ask you to push

Cloning is a process of getting remote repo same as it is on to the developers laptop.

git clone https://github.com/maddydevgits/telegram-controlled-iot-lamp.git

Scenario - 5:

After cloning the repo, team leader have asked you to update something on the repo and he asked you to push to your own branch.

1. We have to create a branch
2. We have to add our own developed files
3. We have to commit
4. We have to push to our own branch instead of main branch

Scenario - 6: Code Conflicts

Team Member1 - Updated Code (Y) in the night time and he has pushed to the remote Repo (X) -> (X+Y)

Team Member2 - haven’t seen this changes (Y) and he is trying to push his code (Z) to the remote repo (X) -> X+Z

If the Team Member2 is having X+Y, then he can push to code and finally the repo can become X+Y+Z.

But, Team Member2 is having X only.

Team Leader -> X+Y+Z

Team Member2 has to pull the code from remote repo.

Team Member3 (Newly Joining) - Clone the Repo

Team Member2:

```
git pull origin madhu
```

Team Member3:

```
git clone remote-repo-url
```

Scenario - 7:

Always it is difficult for you to remember all this commands and running them manually will take lot of time. So, that is why companies and developers prefer some tools or extensions on IDEs which can simplify this process.

Assignment -4:

Remote Repo- https://github.com/maddydevgits/makeskilled-assignment-2.git

We have 34 interns, each of you has to clone this repo and create a new branch and update some python script may be related to hacker rank challenges

No Code Conflicts - you are contributing to your own branch

Assignment -5: (Complicated)

Remote Repo - https://github.com/maddydevgits/assignment---3.git

We have 34 interns, each of you should push your codes to the master branch only.

Code Conflicts - same branch

Assignment -6:

Publish a new repo from the development folder using VS Code.

Assignment -7:

Try to make some changes in the development folder and try to sync them using VS Code itself. (Add, Push, Pull)

Scenario - 8:

How to add team as a collaborator for your remote repo.

Scenario - 9:

You have multiple branches in the repository (local or global), you want to switch between the branches.

Branch1 - Team Member 1
Branch2 - Team Member 2

git checkout <branch_name>

Scenario - 10:

You wanted to see the commit log on the command prompt of a remote repo.

```
git log
```

Scenario - 11:

You are exploring GitHub repos of different developers on a topic, you will be finding different Repos.

You loved one repo of a developer, you wanted to contribute or you wanted to extend the repo work or you wanted to implement and change some features of repo.

Click on fork option (Solution)

Scenario - 12:

You are working on a team for a project, and the team leader has assigned a one feature to develop by you on your own branch.

You have completed the job, and now you have updated everything to your branch.

Pull - Request (Rasie PR) -> Merging your branch with main branch

Assignment - 8:

Raise a PR Request for your branch after completing assignment - 4.

You are pushing your code to your branch but it was my repo, you can able to raise PR after pushing your code to your branch.

Assignment - 9:

You fork any stranger’s remote repo, and do a modification to the forked repo and push to the forked repo.

Assignment - 10:

Create a Release (v1.0) for any one of your own repository.

Do some commits (modifications)

Create another Release (v1.1) for the same repo.