Problem Statement 3:

Remote Repositories and Collaboration Set up a remote repository on a platform like GitHub or GitLab. Push the local repository to the remote repository. Collaborate with a classmate by cloning the remote repository, making changes, and creating a pull request.

Solution:

1. Set up a Remote Repository on GitHub:

Create a GitHub Account:

> If you don't have one already, sign up for a GitHub account at GitHub.
>
> Create a New Repository:
>
> - On GitHub, click the "+" sign in the top right corner and select "New repository."
> - Give your repository a name, add a description if needed, and initialize it with a README file.

2. Push Local Repository to Remote Repository:

Initialize a Local Git Repository:

> If you haven't already, navigate to your local project folder in the terminal and run:
>
> **git init**

Add and Commit Changes:

- Add your files to the staging area:

  git add
- Commit the changes:

  git commit -m "Initial commit"

Link Local Repository to Remote Repository:

- Copy the remote repository URL from GitHub.
- In the terminal, run:

git remote add origin <paste-your-remote-repo-URL>

Push Local Changes to Remote Repository:

git push -u origin master
Replace "master" with your branch name if you're using a different branch.

3. Collaborate with a Classmate:
Collaborator Clones the Repository:
- Share the remote repository URL with your classmate.
- Your classmate clones the repository locally:

git clone <remote-repo-URL>

Make Changes Locally:

- Your classmate makes changes to the code or adds new files in their local **repository.**
  Commit and Push Changes:
- In their local repository, they add and commit changes:

  git add .
  git commit -m "Description of changes"
- Push changes to the remote repository:

  git push origin master

Create a Pull Request:

- On GitHub, your classmate goes to the repository and clicks on the "Pull Requests" tab.
- Click on the "New Pull Request" button.
- Compares changes and creates the pull request.

Review and Merge:

- You, as the owner or collaborator, can review the changes in the pull request.
- If everything looks good, merge the pull request on GitHub.

Now you and your classmate have successfully collaborated on a Git project using remote repositories.