Python Learning Practice Series: Git Setup and Usage

This document outlines the process of setting up Git from a local machine and using it to interact with a remote repository on GitHub, specifically in the context of a Python learning practice series.

Initial Git Setup and Cloning

Navigate to the desired directory for your project. In this example, the user navigated to the "Documents" directory and created a new folder named "Github_Repo."

bash Copy code

```
cd Documents mkdir Github_Repo cd Github_Repo
```

Clone a remote GitHub repository to your local machine using the **`git clone`** command. In this case, the repository being cloned is named "PythonLearning."

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```
git clone https://github.com/CBR-Battula/PythonLearning.git
```

Basic Git Commands and Workflow

Initializing a Git Repository

If you want to create a new Git repository from scratch, you can use the following command:

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```
git init
```

Adding and Committing Changes

Add files to the staging area using the **`git add`** command. For example:

bash Copy code

```
git add PythonLearning/HelloWorld.py
```

Commit the changes with a meaningful message:

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```
git commit -m "HelloWorld"
```

Pushing Changes to Remote Repository

To push the committed changes to the remote repository:

bash Copy code

```
git push origin main
```

Creating a New Branch

To create a new branch named "NewPythonLearning":

bash Copy code

```
git branch NewPythonLearning
```

Switch to the new branch:

bash Copy code

```
git checkout NewPythonLearning
```

Making Changes in a New Branch

Add new files or modify existing ones.

Stage and commit changes:

bash Copy code

```
git add . git commit -m "newfile in new branch"
```

Push the changes to the remote repository:

bash Copy code

```
git push origin HEAD
```

Deleting a Branch

To delete a branch (both locally and remotely), ensure that you are not currently checked out on that branch:

bash Copy code

```
git checkout main git branch -d NewPythonLearning git push origin --delete NewPythonLearning
```

Working with Remote Changes

Fetch remote changes:

bash Copy code

```
git fetch origin
```

Merge the remote changes into your local branch:

bash Copy code

```
git merge origin/main
```

Conclusion

This document provides an overview of setting up Git, cloning repositories, creating and switching branches, making changes, and interacting with remote repositories. Git is a powerful version control system that facilitates collaboration and tracking changes in your projects.