

Git Repository Setup and Basic Operations

Task 1: Setting Up a Git Repository and Basic Operations

Objective

Learn to **initialize a Git repository**, configure Git, and perform **basic Git commands** to manage code changes.

Steps:

1 Initialize a new Git repository

1. **Open your terminal or Git Bash.**
2. **Navigate to a project folder or create a new folder:**

```
mkdir my-project  
cd my-project
```

3. **Initialize a new Git repository:**

```
git init
```

② Configure Git with your name and email

1. **Set up your Git identity** using:

```
git config --global user.name "Your Name"  
git config --global user.email "your.email@example.com"
```

2. **Verify Git configuration:**

```
git config --global --list
```

③ Create and add a file to the repository

1. **Create a new file inside your repository folder:**

```
echo "Hello, Git!" > file.txt
```

2. **Stage the file for commit:**

```
git add file.txt
```

3. **Verify the staged file:**

```
git status
```

4 Commit the changes

1. **Commit the file to the repository:**

```
git commit -m "Initial commit"
```

5 Check the repository status and commit history

1. **Check the repository status:**

```
git status
```

2. **view the commit history:**

```
git log
```

Task 2: Branching, Merging, and Collaboration

Objective

Practice **creating branches**, **merging them**, and **pushing changes to a remote repository** on GitHub.

Steps:

❶ Create a new branch

1. Create a new branch called **new-feature**:

```
git branch new-feature
```

2. Switch to the new branch:

```
git checkout new-feature
```

❷ Make some changes

1. Modify **file.txt**, add some content, and save it.
2. Stage the file:

```
git add file.txt
```

3. Commit the changes:

```
git commit -m "Added new feature to file.txt"
```

❸ Switch back to the main branch

1. Switch back to the **main** branch:

```
git checkout main
```

4 Merge the **new-feature** branch into **main**

Merge the branch:

```
git merge new-feature
```

5 Push the changes to GitHub

1. **Add a remote repository** (if not already added):

```
git remote add origin  
https://github.com/yourusername/your-repo.git
```

2. **Push the changes to GitHub:**

```
git push -u origin main
```

✓ **You have successfully set up a Git repository and performed basic Git operations!** 🎉