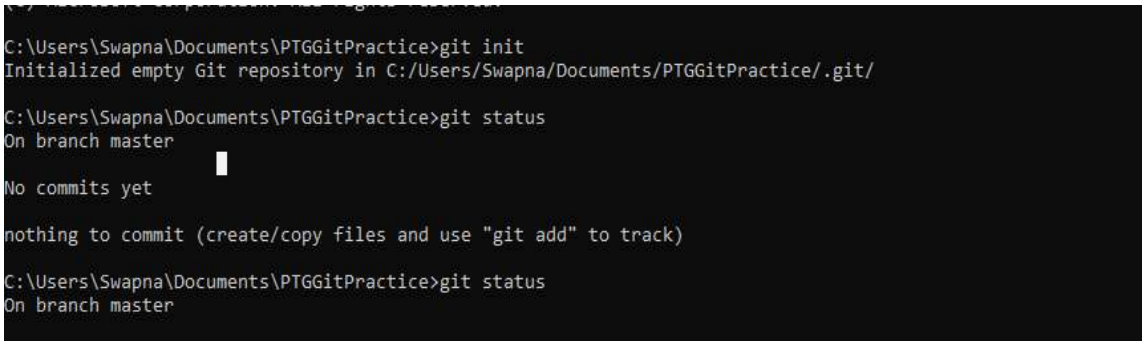
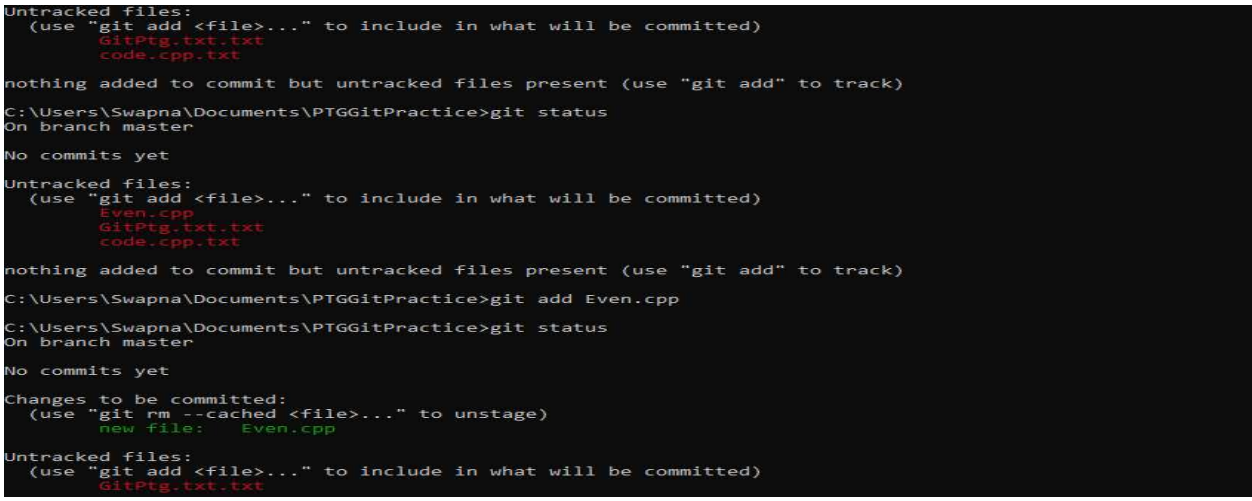
Git Repository

Git Workflow Summary for the Given Commands:

a. git init: Initializes a new Git repository in the current directory.
b. The .git/ folder is created, which tracks all Git operations for this project.



2. **Checking Status:**
   a. git status: Displays the state of the working directory. Initially, after running git init, no commits are made, and files are untracked.
   b. Files listed under "Untracked files" are those not yet added to version control (e.g., GitPtg.txt.txt, code.cpp.txt, Even.cpp).
3. **Adding Files:**
   a. git add <file>: Adds a file to the staging area, marking it for inclusion in the next commit.
   b. Example: `git add Even.cpp` and `git add .` (adds all files in the directory).



4. **Committing Changes:**

a. `git commit -m "<message>"`: Saves the staged changes to the repository with a descriptive message (e.g., "git commits").
b. First-time commit requires setting user details using `git config --global user.email` and `git config --global user.name` for identification.

```
C:\Users\Swapna\Documents\PTGGitPractice>git commit -m "My git commits"
Author identity unknown

*** Please tell me who you are.

Run

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

to set your account's default identity.
Omit --global to set the identity only in this repository.

fatal: unable to auto-detect email address (got 'Swapna@DESKTOP-MA4IABL.(none)')

C:\Users\Swapna\Documents\PTGGitPractice>git config --global user.email "swapnamummadi193@gmail.com"

C:\Users\Swapna\Documents\PTGGitPractice>git config --global user.name "Swapnamummadi"

C:\Users\Swapna\Documents\PTGGitPractice>git commit -m "git commits
[master (root-commit) cc8addd] git commits
 3 files changed, 25 insertions(+)
 create mode 100644 Even.cpp
 create mode 100644 GitPtg.txt.txt
 create mode 100644 code.cpp.txt

C:\Users\Swapna\Documents\PTGGitPractice>git status
On branch master
nothing to commit, working tree clean
```

5. **Adding Remote Repository:**
   a. `git remote add origin <url>`: Adds a remote repository (e.g., GitHub) to push changes to.
   b. Example: `git remote add origin` https://github.com/Swapnamummadi/GitPTG.git.

```
C:\Users\Swapna\Documents\PTGGitPractice>git config --global user.email "swapnamummadi193@gmail.com"

C:\Users\Swapna\Documents\PTGGitPractice>git config --global user.name "Swapnamummadi"

C:\Users\Swapna\Documents\PTGGitPractice>git commit -m "git commits
[master (root-commit) cc8addd] git commits
 3 files changed, 25 insertions(+)
 create mode 100644 Even.cpp
 create mode 100644 GitPtg.txt.txt
 create mode 100644 code.cpp.txt
```

6. **Pushing Changes to Remote:**
   a. `git push -u origin master`: Pushes the local changes to the remote repository on the `master` branch.
   b. `git push --set-upstream origin <branch>`: Pushes changes to a newly created branch and sets up tracking for the remote branch.

```
C:\Users\Swapna\Documents\PTGGitPractice>git push -u origin master
info: please complete authentication in your browser...
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 4 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (5/5), 533 bytes | 533.00 KiB/s, done.
Total 5 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/Swapnamummadi/GitPTG.git
 * [new branch]      master -> master
branch 'master' set up to track 'origin/master'.

C:\Users\Swapna\Documents\PTGGitPractice>git status
On branch master
Your branch is up to date with 'origin/master'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        Factorial.cpp.txt

nothing added to commit but untracked files present (use "git add" to track)

C:\Users\Swapna\Documents\PTGGitPractice>git checkout -b "copy1"
Switched to a new branch 'copy1'

C:\Users\Swapna\Documents\PTGGitPractice>git status
On branch copy1
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        Factorial.cpp.txt

nothing added to commit but untracked files present (use "git add" to track)

C:\Users\Swapna\Documents\PTGGitPractice>git branch
* copy1
  master

C:\Users\Swapna\Documents\PTGGitPractice>git add Factorial.cpp
fatal: pathspec 'Factorial.cpp' did not match any files

C:\Users\Swapna\Documents\PTGGitPractice>git add Factorial.cpp.txt

C:\Users\Swapna\Documents\PTGGitPractice>git commit -m "committing copy1 branch"
[copy1 e500bf7] committing copy1 branch
 1 file changed, 21 insertions(+)
 create mode 100644 Factorial.cpp.txt

C:\Users\Swapna\Documents\PTGGitPractice>git push
fatal: The current branch copy1 has no upstream branch.
To push the current branch and set the remote as upstream, use

    git push --set-upstream origin copy1

To have this happen automatically for branches without a tracking
upstream, see 'push.autoSetupRemote' in 'git help config'.


C:\Users\Swapna\Documents\PTGGitPractice>git push --set-upstream origin copy1
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
```

```
C:\Users\Swapna\Documents\PTGGitPractice>git push
fatal: The current branch copy1 has no upstream branch.
To push the current branch and set the remote as upstream, use

    git push --set-upstream origin copy1

To have this happen automatically for branches without a tracking
upstream, see 'push.autoSetupRemote' in 'git help config'.


C:\Users\Swapna\Documents\PTGGitPractice>git push --set-upstream origin copy1
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 533 bytes | 76.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'copy1' on GitHub by visiting:
remote:      https://github.com/Swapnamummadi/GitPTG/pull/new/copy1
remote:
To https://github.com/Swapnamummadi/GitPTG.git
 * [new branch]      copy1 -> copy1
branch 'copy1' set up to track 'origin/copy1'.

C:\Users\Swapna\Documents\PTGGitPractice>git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.

C:\Users\Swapna\Documents\PTGGitPractice>git pull
remote: Enumerating objects: 1, done.
remote: Counting objects: 100% (1/1), done.
remote: Total 1 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (1/1), 903 bytes | 129.00 KiB/s, done.
From https://github.com/Swapnamummadi/GitPTG
   cc8addd..15b5fb8  master     -> origin/master
Updating cc8addd..15b5fb8
Fast-forward
 Factorial.cpp.txt | 21 ++++++++++++++++++++
 1 file changed, 21 insertions(+)
 create mode 100644 Factorial.cpp.txt
```

7. **Branch Operations:**
    a. `git checkout -b <branch_name>`: Creates a new branch and switches to it.
    b. `git checkout <branch_name>`: Switches to an existing branch.
    c. Example: `git checkout -b "copy1"` to create and switch to a new branch called `copy1`.

```
C:\Users\Swapna\Documents\PTGGitPractice>git checkout -b "branch1"
Switched to a new branch 'branch1'

C:\Users\Swapna\Documents\PTGGitPractice>git checkout -b "branch2"
Switched to a new branch 'branch2'

C:\Users\Swapna\Documents\PTGGitPractice>git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.

C:\Users\Swapna\Documents\PTGGitPractice>git checkout branch1
Switched to branch 'branch1'

C:\Users\Swapna\Documents\PTGGitPractice>git status
On branch branch1
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
```

8. **Merging Changes from Remote Branch:**
    a. `git pull`: Fetches changes from the remote repository and merges them with the local branch.
    b. `git merge <branch>`: Merges the specified branch into the current branch. If there are no changes, it will show "Already up to date."

```
C:\Users\Swapna\Documents\PTGGitPractice>git pull
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (3/3), 1.80 KiB | 92.00 KiB/s, done.
From https://github.com/Swapnamummadi/GitPTG
   15b5fb8..beb744d  master     -> origin/master
Already up to date.

C:\Users\Swapna\Documents\PTGGitPractice>git checkout branch2
Already on 'branch2'
Your branch is up to date with 'origin/branch2'.
```

```
C:\Users\Swapna\Documents\PTGGitPractice>git merge origin/master
Updating 48d8010..beb744d
Fast-forward
 GitPtg.txt.txt | 2 +-
 1 file changed, 1 insertion(+), 1 deletion(-)

C:\Users\Swapna\Documents\PTGGitPractice>Git Workflow Summary for the Given Commands:
git: 'Workflow' is not a git command. See 'git --help'.

C:\Users\Swapna\Documents\PTGGitPractice>
```

9. **Handling Untracked Files:**

a. Git lists untracked files (e.g., `Factorial.cpp.txt`) that haven't been added to version control.
b. Use `git add <file>` to track them, then commit.

10. Push Operations for Branches:

a. After committing changes in a new branch (e.g., `branch1`), you must push it to the remote with `git push --set-upstream origin branch1` to create and track the remote branch.

11. Final Pushes:

a. When pushing a new branch, Git prompts to create a pull request on GitHub (e.g., "Create a pull request for 'branch1'").