

1. Create a Git Repository.

Commands –

git init

```
$ git init
Initialized empty Git repository in E:/Github/GitTest/.git/

satyam@Arceus MINGW64 /e/Github
$ mkdir GitTest

satyam@Arceus MINGW64 /e/Github
$ cd GitTest

satyam@Arceus MINGW64 /e/Github/GitTest
$ git init
Initialized empty Git repository in E:/Github/GitTest/.git/
```

2. Create a new file.

Commands –

touch main.txt // Create a file

echo // Edit file

git add // Add file to staging area

git commit -m "" // Commit the changes

```
$ touch main.txt
$ echo "This is the content of the master file" >> main.txt
$ git add main.txt
warning: LF will be replaced by CRLF in main.txt.
The file will have its original line endings in your working directory
$ git commit -m "First Commit"
[master (root-commit) 9ba1b5e] First Commit
1 file changed, 1 insertion(+)
create mode 100644 main.txt
```

```
satyam@Arceus MINGW64 /e/Github/GitTest (master)
$ touch main.txt

satyam@Arceus MINGW64 /e/Github/GitTest (master)
$ echo "This is the content of the master file" >> main.txt

satyam@Arceus MINGW64 /e/Github/GitTest (master)
$ git add main.txt
warning: LF will be replaced by CRLF in main.txt.
The file will have its original line endings in your working directory

satyam@Arceus MINGW64 /e/Github/GitTest (master)
$ git commit -m "First Commit"
[master (root-commit) 9ba1b5e] First Commit
1 file changed, 1 insertion(+)
create mode 100644 main.txt
```

```
satyam@Arceus MINGW64 /e/Github/GitTest (master)
$ git branch
* master

satyam@Arceus MINGW64 /e/Github/GitTest (master)
$ git remote add origin https://github.com/vsatyamesc/GitTest

satyam@Arceus MINGW64 /e/Github/GitTest (master)
$ git push -u origin master
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 267 bytes | 267.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/vsatyamesc/GitTest
 * [new branch]      master -> master
branch 'master' set up to track 'origin/master'.
```

3. Create a new branch

Commands –

git branch // list the git branches

git branch FirstBranch // Make a new Branch of the master

git checkout FirstBranch // change the branch

git status // check the status

git push -u origin FirstBranch // push to the branch to reflect changes

```
$ git branch
* master
$ git branch FirstBranch

$ git checkout FirstBranch
Switched to branch 'FirstBranch'

$ git status
On branch FirstBranch
nothing to commit, working tree clean

$ git push -u origin FirstBranch
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'FirstBranch' on GitHub by visiting:
remote:   https://github.com/vsatyamesc/GitTest/pull/new/FirstBranch
remote:
To https://github.com/vsatyamesc/GitTest
 * [new branch]      FirstBranch -> FirstBranch
branch 'FirstBranch' set up to track 'origin/FirstBranch'.
```

```
satyam@Arceus MINGW64 /e/Github/GitTest (master)
$ git branch
* master

satyam@Arceus MINGW64 /e/Github/GitTest (master)
$ git branch FirstBranch

satyam@Arceus MINGW64 /e/Github/GitTest (master)
$ git checkout FirstBranch
Switched to branch 'FirstBranch'

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)
$ git status
On branch FirstBranch
nothing to commit, working tree clean

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)
$ git push -u origin FirstBranch
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'FirstBranch' on GitHub by visiting:
remote:   https://github.com/vsatyamesc/GitTest/pull/new/FirstBranch
remote:
To https://github.com/vsatyamesc/GitTest
 * [new branch]      FirstBranch -> FirstBranch
branch 'FirstBranch' set up to track 'origin/FirstBranch'.
```

4. Make Changes in the Branch

Commands –

echo // make changes to the main.txt

git status // check the status

git add // Add file to staging area

git commit -m "" // Commit the changes

git push // push changes to the remote repository

```
$ echo "This is the First Branch Content" >> main.txt

$ git status
On branch FirstBranch
```

Your branch is up to date with 'origin/FirstBranch'.

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)
modified: main.txt

no changes added to commit (use "git add" and/or "git commit -a")

\$ git add .

warning: LF will be replaced by CRLF in main.txt.

The file will have its original line endings in your working directory

\$ git commit -m "Edit to First Branch"

[FirstBranch 71f7823] Edit to First Branch

1 file changed, 1 insertion(+)

\$ git push

Enumerating objects: 5, done.

Counting objects: 100% (5/5), done.

Delta compression using up to 12 threads

Compressing objects: 100% (2/2), done.

Writing objects: 100% (3/3), 326 bytes | 326.00 KiB/s, done.

Total 3 (delta 0), reused 0 (delta 0), pack-reused 0

To https://github.com/vsatyamesc/GitTest

9ba1b5e..71f7823 FirstBranch -> FirstBranch

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)

\$ echo "This is the First Branch Content" >> main.txt

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)

\$ git status

On branch FirstBranch

Your branch is up to date with 'origin/FirstBranch'.

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)

modified: main.txt

no changes added to commit (use "git add" and/or "git commit -a")

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)

\$ git add .

warning: LF will be replaced by CRLF in main.txt.

The file will have its original line endings in your working directory

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)

\$ git commit -m "Edit to First Branch"

[FirstBranch 71f7823] Edit to First Branch

1 file changed, 1 insertion(+)

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)

\$ git push

Enumerating objects: 5, done.

Counting objects: 100% (5/5), done.

Delta compression using up to 12 threads

Compressing objects: 100% (2/2), done.

Writing objects: 100% (3/3), 326 bytes | 326.00 KiB/s, done.

Total 3 (delta 0), reused 0 (delta 0), pack-reused 0

To https://github.com/vsatyamesc/GitTest

9ba1b5e..71f7823 FirstBranch -> FirstBranch

5. Create Another Branch

Commands –

git branch name // Create a new branch

git checkout SecondBranch // Change the branch

touch // create a new file in the branch

git add . // Add modified files to the staging area

git commit -m "" // Commit the files

git push --set-upstream origin SecondBranch

```
$ git branch SecondBranch

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)
$ git checkout SecondBranch
Switched to branch 'SecondBranch'

$ touch secondfile.txt
$ git status
On branch SecondBranch
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    secondfile.txt

nothing added to commit but untracked files present (use "git add" to track)
$ git add secondfile.txt
$ git commit -m "Added a second file"
[SecondBranch 30feb42] Added a second file
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 secondfile.txt

$ git push --set-upstream origin SecondBranch
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 12 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 306 bytes | 306.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'SecondBranch' on GitHub by visiting:
remote:   https://github.com/vsatyamesc/GitTest/pull/new/SecondBranch
remote:
To https://github.com/vsatyamesc/GitTest
 * [new branch]      SecondBranch -> SecondBranch
branch 'SecondBranch' set up to track 'origin/SecondBranch'.
```

```

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)
$ git branch SecondBranch

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)
$ git checkout SecondBranch
Switched to branch 'SecondBranch'

satyam@Arceus MINGW64 /e/Github/GitTest (SecondBranch)
$ touch secondfile.txt

satyam@Arceus MINGW64 /e/Github/GitTest (SecondBranch)
$ git status
On branch SecondBranch
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    secondfile.txt

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

satyam@Arceus MINGW64 /e/Github/GitTest (SecondBranch)
$ git add secondfile.txt

satyam@Arceus MINGW64 /e/Github/GitTest (SecondBranch)
$ git commit -m "Added a second file"
[SecondBranch 30feb42] Added a second file
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 secondfile.txt

satyam@Arceus MINGW64 /e/Github/GitTest (SecondBranch)
$ git push --set-upstream origin SecondBranch
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 12 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 306 bytes | 306.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'SecondBranch' on GitHub by visiting:
remote:   https://github.com/vsatyamesc/GitTest/pull/new/SecondBranch
remote:
To https://github.com/vsatyamesc/GitTest
 * [new branch]      SecondBranch -> SecondBranch
branch 'SecondBranch' set up to track 'origin/SecondBranch'.

```

6. Merge Branches

Commands –

Git checkout name // change branch

Git merge name // the name of the branch to merge to

```

satyam@Arceus MINGW64 /e/Github/GitTest (SecondBranch)
$ git checkout FirstBranch
Switched to branch 'FirstBranch'
Your branch is up to date with 'origin/FirstBranch'.

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)
$ git merge SecondBranch
Updating 71f7823..30feb42
Fast-forward
 secondfile.txt | 0
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 secondfile.txt

$ git status
On branch FirstBranch
Your branch is ahead of 'origin/FirstBranch' by 1 commit.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)
$ git push
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0

```

```
To https://github.com/vsatyamesc/GitTest
71f7823..30feb42 FirstBranch -> FirstBranch
```

```
satyam@Arceus MINGW64 /e/Github/GitTest (SecondBranch)
$ git checkout FirstBranch
Switched to branch 'FirstBranch'
Your branch is up to date with 'origin/FirstBranch'.

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)
$ git merge SecondBranch
Updating 71f7823..30feb42
Fast-forward
 secondfile.txt | 0
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 secondfile.txt

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)
$ git status
On branch FirstBranch
Your branch is ahead of 'origin/FirstBranch' by 1 commit.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)
$ git push
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/vsatyamesc/GitTest
 71f7823..30feb42 FirstBranch -> FirstBranch
```

7. Pull Changes from Remote

Commands –

Git remote add origin // add remote url

Git pull origin master // pull the master branch

```
// Created a new folder to pull changes from remote repository
satyam@Arceus MINGW64 /e/Github/Gitss (master)
$ git remote add origin https://github.com/vsatyamesc/GitTest

satyam@Arceus MINGW64 /e/Github/Gitss (master)
$ git pull origin master
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 3 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (3/3), 247 bytes | 10.00 KiB/s, done.
From https://github.com/vsatyamesc/GitTest
 * branch          master       -> FETCH_HEAD
 * [new branch]    master       -> origin/master
```

```
satyam@Arceus MINGW64 /e/Github/Gitss (master)
$ git remote add origin https://github.com/vsatyamesc/GitTest

satyam@Arceus MINGW64 /e/Github/Gitss (master)
$ git pull origin master
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 3 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (3/3), 247 bytes | 10.00 KiB/s, done.
From https://github.com/vsatyamesc/GitTest
 * branch          master       -> FETCH_HEAD
 * [new branch]    master       -> origin/master
```

8. View Git Log and History

Commands –

Git checkout name // change branches

Git log // check the logs of the changes

```
satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)
$ git checkout master
Switched to branch 'master'
Your branch is up to date with 'origin/master'.

satyam@Arceus MINGW64 /e/Github/GitTest (master)
$ git log
commit 9ba1b5e982236da28a5996978ce5e5d1d2658d72 (HEAD -> master, origin/master)
Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
Date: Wed Feb 19 07:35:49 2025 +0530

    First Commit

satyam@Arceus MINGW64 /e/Github/GitTest (master)
$ git checkout FirstBranch
Switched to branch 'FirstBranch'
Your branch is up to date with 'origin/FirstBranch'.

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)
$ git log --decorate --graph
* commit 30feb422d54ded3511d04fc99ff7669cb9d864b7 (HEAD -> FirstBranch, origin/SecondBranch, origin/FirstBranch, SecondBranch)
| Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
| Date: Wed Feb 19 07:59:45 2025 +0530
|
|     Added a second file
|
* commit 71f782326b6c6808e27ba2247b04ff91c525436a
| Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
| Date: Wed Feb 19 07:55:09 2025 +0530
|
|     Edit to First Branch
|
* commit 9ba1b5e982236da28a5996978ce5e5d1d2658d72 (origin/master, master)
| Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
| Date: Wed Feb 19 07:35:49 2025 +0530
|
|     First Commit
```

```
satyam@Arceus MINGW64 /e/Github/GitTest (master)
$ git log
commit 9ba1b5e982236da28a5996978ce5e5d1d2658d72 (HEAD -> master, origin/master)
Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
Date: Wed Feb 19 07:35:49 2025 +0530

    First Commit

satyam@Arceus MINGW64 /e/Github/GitTest (master)
$ git checkout FirstBranch
Switched to branch 'FirstBranch'
Your branch is up to date with 'origin/FirstBranch'.

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)
$ git log --decorate --graph
* commit 30feb422d54ded3511d04fc99ff7669cb9d864b7 (HEAD -> FirstBranch, origin/SecondBranch, origin/FirstBranch, SecondBranch)
| Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
| Date: Wed Feb 19 07:59:45 2025 +0530
|
|     Added a second file
|
* commit 71f782326b6c6808e27ba2247b04ff91c525436a
| Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
| Date: Wed Feb 19 07:55:09 2025 +0530
|
|     Edit to First Branch
|
* commit 9ba1b5e982236da28a5996978ce5e5d1d2658d72 (origin/master, master)
| Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
| Date: Wed Feb 19 07:35:49 2025 +0530
|
|     First Commit
```


9. Git Status and Staging

Commands –

git status // displays the state of the working directory

git add . // adds the files to the staging area

```
satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)
$ git status
On branch FirstBranch
Your branch is up to date with 'origin/FirstBranch'.

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)
        modified:   main.txt

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        file1.txt
        file2.txt

no changes added to commit (use "git add" and/or "git commit -a")

satyam@Arceus MINGW64 /e/Github/GitTest (FirstBranch)
$ git add .
```

10. Revert and Reset

Commands –

git log // check the history of the commits

git revert <<commit-hash>>

git reset <<commit-hash>>

```
satyam@Arceus MINGW64 /e/Github/Gitss (FirstBranch)
$ git log --graph
* commit 74feaf488ab3e3a8cb77ba03b66dfb1bcbfe4464 (HEAD -> FirstBranch, origin/FirstBranch)
| Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
| Date:   Wed Feb 19 09:47:37 2025 +0530
|
|     New Update
|
* commit 30feb422d54ded3511d04fc99ff7669cb9d864b7 (origin/SecondBranch)
| Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
| Date:   Wed Feb 19 07:59:45 2025 +0530
|
|     Added a second file
|
* commit 71f782326b6c6808e27ba2247b04ff91c525436a
| Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
| Date:   Wed Feb 19 07:55:09 2025 +0530
|
|     Edit to First Branch
|
* commit 9ba1b5e982236da28a5996978ce5e5d1d2658d72 (origin/master, master)
| Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
| Date:   Wed Feb 19 07:35:49 2025 +0530
|
|     First Commit
|

satyam@Arceus MINGW64 /e/Github/Gitss (FirstBranch)
$ git revert 30feb422d54ded3511d04fc99ff7669cb9d864b7
[FirstBranch f256366] Revert "Added a second file"
1 file changed, 0 insertions(+), 0 deletions(-)
delete mode 100644 secondfile.txt
```



```

satyam@Arceus MINGW64 /e/Github/Gitss (FirstBranch)
$ git log --graph
* commit 74feaf488ab3e3a8cb77ba03b66dfb1bcbfe4464 (HEAD -> FirstBranch, origin/FirstBranch)
| Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
| Date: Wed Feb 19 09:47:37 2025 +0530
|
| New Update
|
* commit 30feb422d54ded3511d04fc99ff7669cb9d864b7 (origin/SecondBranch)
| Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
| Date: Wed Feb 19 07:59:45 2025 +0530
|
| Added a second file
|
* commit 71f782326b6c6808e27ba2247b04ff91c525436a
| Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
| Date: Wed Feb 19 07:55:09 2025 +0530
|
| Edit to First Branch
|
* commit 9ba1b5e982236da28a5996978ce5e5d1d2658d72 (origin/master, master)
| Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
| Date: Wed Feb 19 07:35:49 2025 +0530
|
| First Commit
|

satyam@Arceus MINGW64 /e/Github/Gitss (FirstBranch)
$ git revert 30feb422d54ded3511d04fc99ff7669cb9d864b7
[FirstBranch f256366] Revert "Added a second file"
1 file changed, 0 insertions(+), 0 deletions(-)
delete mode 100644 secondfile.txt

```

```

satyam@Arceus MINGW64 /e/Github/Gitss (FirstBranch)
$ git log
commit 90bf37ab439f9083c9adbbbf3ed088fa01daf5f0 (HEAD -> FirstBranch)
Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
Date: Wed Feb 19 09:56:42 2025 +0530

Next

commit 74feaf488ab3e3a8cb77ba03b66dfb1bcbfe4464 (origin/FirstBranch)
Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
Date: Wed Feb 19 09:47:37 2025 +0530

New Update

commit 30feb422d54ded3511d04fc99ff7669cb9d864b7 (origin/SecondBranch)
Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
Date: Wed Feb 19 07:59:45 2025 +0530

Added a second file

commit 71f782326b6c6808e27ba2247b04ff91c525436a
Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
Date: Wed Feb 19 07:55:09 2025 +0530

Edit to First Branch

commit 9ba1b5e982236da28a5996978ce5e5d1d2658d72 (origin/master, master)
Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
Date: Wed Feb 19 07:35:49 2025 +0530

First Commit

satyam@Arceus MINGW64 /e/Github/Gitss (FirstBranch)
$ git reset --hard 30feb422d54ded3511d04fc99ff7669cb9d864b7
HEAD is now at 30feb42 Added a second file

```

```
satyam@Arceus MINGW64 /e/Github/Gitss (FirstBranch)
$ git log
commit 90bf37ab439f9083c9adbbbf3ed088fa01daf5f0 (HEAD -> FirstBranch)
Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
Date: Wed Feb 19 09:56:42 2025 +0530
```

Next

```
commit 74feaf488ab3e3a8cb77ba03b66dfb1bcbfe4464 (origin/FirstBranch)
Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
Date: Wed Feb 19 09:47:37 2025 +0530
```

New Update

```
commit 30feb422d54ded3511d04fc99ff7669cb9d864b7 (origin/SecondBranch)
Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
Date: Wed Feb 19 07:59:45 2025 +0530
```

Added a second file

```
commit 71f782326b6c6808e27ba2247b04ff91c525436a
Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
Date: Wed Feb 19 07:55:09 2025 +0530
```

Edit to First Branch

```
commit 9ba1b5e982236da28a5996978ce5e5d1d2658d72 (origin/master, master)
Author: Satyam Verma <60954779+vsatyamesc@users.noreply.github.com>
Date: Wed Feb 19 07:35:49 2025 +0530
```

First Commit

```
satyam@Arceus MINGW64 /e/Github/Gitss (FirstBranch)
$ git reset --hard 30feb422d54ded3511d04fc99ff7669cb9d864b7
HEAD is now at 30feb42 Added a second file
```