

Version Control System (Git/GitHub)

Exercise 1: Create your first Commit.

Task:

- Initialize your Repository: git init project Exercise-1
- Create a file with name index.html
- Write code in newly created file
- Stage index.html
- Commit with message '**Initial Message**.'

```
Grishma@LAPTOP-FP46SSK3 MINGW64 ~
$ git init
Initialized empty Git repository in C:/Users/Grishma/.git/

Grishma@LAPTOP-FP46SSK3 MINGW64 ~ (master)
$ git init Task_git
Initialized empty Git repository in C:/Users/Grishma/Task_git/.git/

Grishma@LAPTOP-FP46SSK3 MINGW64 ~ (master)
$ cd Task_git

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task_git (master)
$ touch index.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task_git (master)
$ cat index.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task_git (master)
$ cat index.html
<!DOCTYPE html>
<html>
<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <title>Test project</title>
</head>
<body>
<h1>Hello World</h1>
</body>
</html>
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task_git (master)
$ git add index.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task_git (master)
$ git commit -m "Initial Message"
[master (root-commit) f2633a1] Initial Message
 1 file changed, 11 insertions(+)
 create mode 100644 index.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task_git (master)
$ git branch -M main

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task_git (main)
$ git remote add origin https://github.com/Grishmacoder/dump.git

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task_git (main)
$ git push -u origin main
Enumerating objects: 3, done.
```

Exercise 2: Commit only one file.

Task:

- Initialize your Repository: `git init Exercise-2`
- Create a files with names `index.html` and `about.html`
- Add code in both files.
- Stage only one file.
- Commit with message: **'File x added.'**

```
Grishma@LAPTOP-FP46SSK3 MINGW64 ~ (master)
$ git init Exercise-2
Initialized empty Git repository in C:/Users/Grishma/Excercise-2/.git/

Grishma@LAPTOP-FP46SSK3 MINGW64 ~ (master)
$ cd Exercise-2

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Excercise-2 (master)
$ touch index.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Excercise-2 (master)
$ touch about.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Excercise-2 (master)
$ cat index.html
<!DOCTYPE html>
<html>
<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <title>Index</title>
</head>
<body>
  <h1>Welcome</h1>
</body>
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Excercise-2 (master)
$ git add
Nothing specified, nothing added.
hint: Maybe you wanted to say 'git add .'
hint: Turn this message off by running
hint: "git config advice.addEmptyPaths false"

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Excercise-2 (master)
$ git add index.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Excercise-2 (master)
$ git commit -m "File index added"
[master (root-commit) 1584610] File index added
1 file changed, 10 insertions(+)
create mode 100644 index.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Excercise-2 (master)
$ git branch -M main

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Excercise-2 (main)
$ git remote add origin https://github.com/Grishmacoder/dump.git
#
```

```
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task_git (main)
$ git push -u origin main
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 367 bytes | 367.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/Grishmacoder/dump.git
 * [new branch]      main -> main
Branch 'main' set up to track remote branch 'main' from 'origin'.

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task_git (main)
$
```

```
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Excercise-2 (main)
$ git clone https://github.com/Grishmacoder/dump.git
Cloning into 'dump'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 3 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.
```

Exercise 3: Modify last commit.

Task:

- Initialize your Repository: git init project Exercise-3
- Create a file with name index.html
- Write code in newly created file
- Stage index.html
- Commit with message 'adding index.html.'
- Add new about.html file with some code.
- Now modify message of previous commit as 'Adding index.html and about.html' and add about.html file in previous commit.

```
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3 (master)
$ git init Excercise-3
Initialized empty Git repository in C:/Users/Grishma/Task-3/Excercise-3/.git/

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3 (master)
$ touch index.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3 (master)
$ cd Excercise-3

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3/Excercise-3 (master)
$ touch index.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3/Excercise-3 (master)
$ cat index.html
<!DOCTYPE html>
<html>
<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <title>Index</title>
</head>
<body>
  <h1>This Task-3</h1>
</body>
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3/Excercise-3 (master)
$ git add index.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3/Excercise-3 (master)
$ git commit -m "Initial message"
[master (root-commit) 7fedfc7] Initial message
1 file changed, 10 insertions(+)
create mode 100644 index.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3/Excercise-3 (master)
$ git status
On branch master
nothing to commit, working tree clean

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3/Excercise-3 (master)
$ git branch -M main

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3/Excercise-3 (main)
$ git remote add origin https://github.com/Grishmacoder/Test.git

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3/Excercise-3 (main)
$ git push -u origin main
Enumerating objects: 3, done.
```

```

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3/Excercise-3 (main)
$ touch about.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3/Excercise-3 (main)
$ cat about.html
<!DOCTYPE html>
<html>
<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <title>About page</title>
</head>
<body>

</body>
</html>
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3/Excercise-3 (main)
$ git add about.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3/Excercise-3 (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        new file:   about.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3/Excercise-3 (main)
$ git commit --amend -m "Adding index and about file"
[main 8b7ba72] Adding index and about file
Date: Fri Sep 30 11:21:32 2022 -0400
2 files changed, 21 insertions(+)
create mode 100644 about.html
create mode 100644 index.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/Task-3/Excercise-3 (main)
$ git log
commit 8b7ba72bbb61db8883ee5c15c37e1c6d45436ad9 (HEAD -> main)
Author: Grishma <gc Patel1888@gmail.com>
Date:   Fri Sep 30 11:21:32 2022 -0400

    Adding index and about file

```

Exercise 4: Create git ignore file

Task:

- Initialize your Repository: git init Exercise-4
- Create a gitignore file that will ignore
 - all files with 'exe' extension
 - all files with 'o' extension
 - all files with 'jar' extension
 - the whole libraries directory

```

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/exercice-4 (master)
$ git commit -m "modified file"
[master 00407c5] modified file
1 file changed, 12 insertions(+)

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/exercice-4 (master)
$ ls

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/exercice-4 (master)
$ git log
commit 00407c5ef76e7bfda9d4d7a64edcddb103ded157 (HEAD -> master)
Author: Grishma <gcpatel1888@gmail.com>
Date: Fri Sep 30 12:21:18 2022 -0400

    modified file

commit 2b4af44efe54895a5aa471532a0c49b214fbd2f5
Author: Grishma <gcpatel1888@gmail.com>
Date: Fri Sep 30 11:41:50 2022 -0400

    Adding gitignore file

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/exercice-4 (master)
$ cat .gitignore
# Ignore .exe files
.exe

# Ignore 'o' extension
.o

# Ignore jar files
*.jar

# Ignore libraries directory
.lib

```

Exercise 5: Save your work with stash.

Task:

- Initialize your Repository: git init Exercise-5
- Add some random files with code
- Now use git stash command to save required files from above files.

(For this exercise don't send repository just submit git commands and output of git stash list)

```
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/excercise-5 (test)
$ echo "Hello world">test3.txt

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/excercise-5 (test)
$ git status
On branch test
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        test3.txt

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

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/excercise-5 (test)
$ echo "Hello">test4.txt

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/excercise-5 (test)
$ git add test3.txt
warning: LF will be replaced by CRLF in test3.txt.
The file will have its original line endings in your working directory

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/excercise-5 (test)
$ git status
On branch test
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        new file:   test3.txt

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        test4.txt

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/excercise-5 (test)
$ git stash
Saved working directory and index state WIP on test: b8646ec adding test/test2 file

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/excercise-5 (test)
$ git status
$
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        test4.txt

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

Exercise 6: Reset Previous Commit Keeping changes. (Soft Reset)

Task:

- Initialize your Repository: git init Exercise-6.
- Do some series of commits.
- Now use git reset command to reset one of the commit and keep changes in staging area.

In answer also add output of git status command.

```
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump (main)
$ git init exercise-6
Initialized empty Git repository in C:/Users/Grishma/Task_git/dump/exercise-6/.git/

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump (main)
$ cd exercise-6

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-6 (master)
$ echo "first file">first.txt

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-6 (master)
$ git add .
warning: LF will be replaced by CRLF in first.txt.
The file will have its original line endings in your working directory

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-6 (master)
$ git commit -m "Initial commit"
[master (root-commit) c363415] Initial commit
1 file changed, 1 insertion(+)
create mode 100644 first.txt

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-6 (master)
$ echo "Second file">second.txt

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-6 (master)
$ git add .
warning: LF will be replaced by CRLF in second.txt.
The file will have its original line endings in your working directory

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-6 (master)
$ git commit -m "Second commit"
[master dc137ed] Second commit
1 file changed, 1 insertion(+)
create mode 100644 second.txt
```


Exercise 7: Reset Previous Commit (Hard Reset).

Task:

- Initialize your Repository: git init Exercise-7.
- Do some series of commits.
- Use git reset command to reset one of the commit without keeping changes.

```
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-7 (master)
$ git log
commit 7333040899ded6ca55a8cd1ad42e51509a91f8d3 (HEAD -> master)
Author: Grishma <gcpatel888@gmail.com>
Date:   Fri Sep 30 13:40:46 2022 -0400

    second commit

commit 72186ed0cd09a424789bf574a8db1b9c1987bf81
Author: Grishma <gcpatel888@gmail.com>
Date:   Fri Sep 30 13:39:38 2022 -0400

    Initial commit

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-7 (master)
$ git reser --hard HEAD~1
git: 'reser' is not a git command. See 'git --help'.

The most similar commands are
    reset
    restore

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-7 (master)
$ git reset --hard HEAD~1
HEAD is now at 72186ed Initial commit

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-7 (master)
$ git log
commit 72186ed0cd09a424789bf574a8db1b9c1987bf81 (HEAD -> master)
Author: Grishma <gcpatel888@gmail.com>
Date:   Fri Sep 30 13:39:38 2022 -0400

    Initial commit

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-7 (master)
$ git status
On branch master
nothing to commit, working tree clean
```

Exercise 8: Merge branch (No Conflicts).

Task:

- Initialize your Repository: `git init Exercise-8`
- Create `index.html` file add some code.
- Make Commit.
- Create new branch from master branch with name **my-feature**.
- Add `about-us.html` file with code and commit changes in my-feature branch.
- Now checkout master branch.
- Merge my-feature branch into master.

```
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-8 (master)
$ git add .
warning: LF will be replaced by CRLF in index.html.
The file will have its original line endings in your working directory

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-8 (master)
$ git commit -m "adding index.html to master"
[master (root-commit) 9ce7b13] adding index.html to master
1 file changed, 12 insertions(+)
create mode 100644 index.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-8 (master)
$ git branch my-feature

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-8 (master)
$ git checkout my-feature
Switched to branch 'my-feature'

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-8 (my-feature)
$ touch about.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-8 (my-feature)
$ vi about.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-8 (my-feature)
$ git add .
warning: LF will be replaced by CRLF in about.html.
The file will have its original line endings in your working directory

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-8 (my-feature)
$ git commit -m "Adding about.html file"
[my-feature b612404] Adding about.html file
1 file changed, 11 insertions(+)
create mode 100644 about.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-8 (my-feature)
$ git checkout master
Switched to branch 'master'
```

```

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-8 (master)
$ git branch -a
* master
  my-feature

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-8 (master)
$ git merge my-feature
Updating 9ce7b13..b612404
Fast-forward
 about.html | 11 ++++++++
 1 file changed, 11 insertions(+)
 create mode 100644 about.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-8 (master)
$ ls
about.html  index.html

```

Exercise 9: Merge branch (Conflicts).

Task:

- Initialize your Repository: git init Exercise-9
- Create index.html file add some code.
- Make Commit.
- Create new branch from master branch with name my-feature.
- Add about-us.html file with code
- Make changes in index.html
- Commit changes in my-feature branch.
- Now checkout master branch.
- Do some code changes in index.html
- Commit changes.
- Now merge my-feature branch into master.
- You will get conflicts for index.html file. Resolve conflict by selecting both changes for the same index.html file.

```
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump (main)
$ git init exercise-9
Initialized empty Git repository in C:/Users/Grishma/Task_git/dump/exercise-9/.git/

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump (main)
$ cd exercise-9

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-9 (master)
$ touch index.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-9 (master)
$ vi index.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-9 (master)
$ git add .
warning: LF will be replaced by CRLF in index.html.
The file will have its original line endings in your working directory

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-9 (master)
$ git commit -m "Initial commit"
[master (root-commit) 784e1ab] Initial commit
1 file changed, 8 insertions(+)
create mode 100644 index.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-9 (master)
$ git branch my-feature

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-9 (master)
$ git checkout my-feature
Switched to branch 'my-feature'

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-9 (my-feature)
$ touch about.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-9 (my-feature)
$ vi about.html

Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-9 (my-feature)
$ git add .
warning: LF will be replaced by CRLF in about.html.
The file will have its original line endings in your working directory
```

```
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-9 (my-feature)
$ vi index.html
```

```
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-9 (my-feature)
$ git commit -m "modification in index.html"
[my-feature 8261a8f] modification in index.html
 1 file changed, 8 insertions(+)
 create mode 100644 about.html
```

```
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-9 (my-feature)
$ git checkout master
Switched to branch 'master'
M      index.html
```

```
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-9 (master)
$ git merge my-feature
Updating 784e1ab..8261a8f
Fast-forward
 about.html | 8 ++++++++
 1 file changed, 8 insertions(+)
 create mode 100644 about.html
```

```
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-9 (master)
$ ls
about.html  index.html
```

```
Grishma@LAPTOP-FP46SSK3 MINGW64 ~/task_git/dump/exercise-9 (master)
$ cat index.html
<html>
<head>
    <title>Index page</title>
</head>
<body>
    <h1>indexing again</h1>
</body>
</html>
```