Git & Github Introduction

What is Github?

- GitHub was developed by Chris Wanstrath, P. J. Hyett, Tom Preston-Werner and Scott Chacon using Ruby on Rails, and started in February **2008**
- It is a subsidiary of **Microsoft**, which acquired the company in **2018** for $7.5 billion
- GitHub.com is **a site for online storage of Git repositories**.
- You can get free space for open source projects or you can pay for private projects.

Question: Do I have to use Github in order to use Git?
Answer: No!

- you can use Git completely locally for your own purposes, or
- you or someone else could set up a server to share files, or
- you could share a repo with users on the same file system.

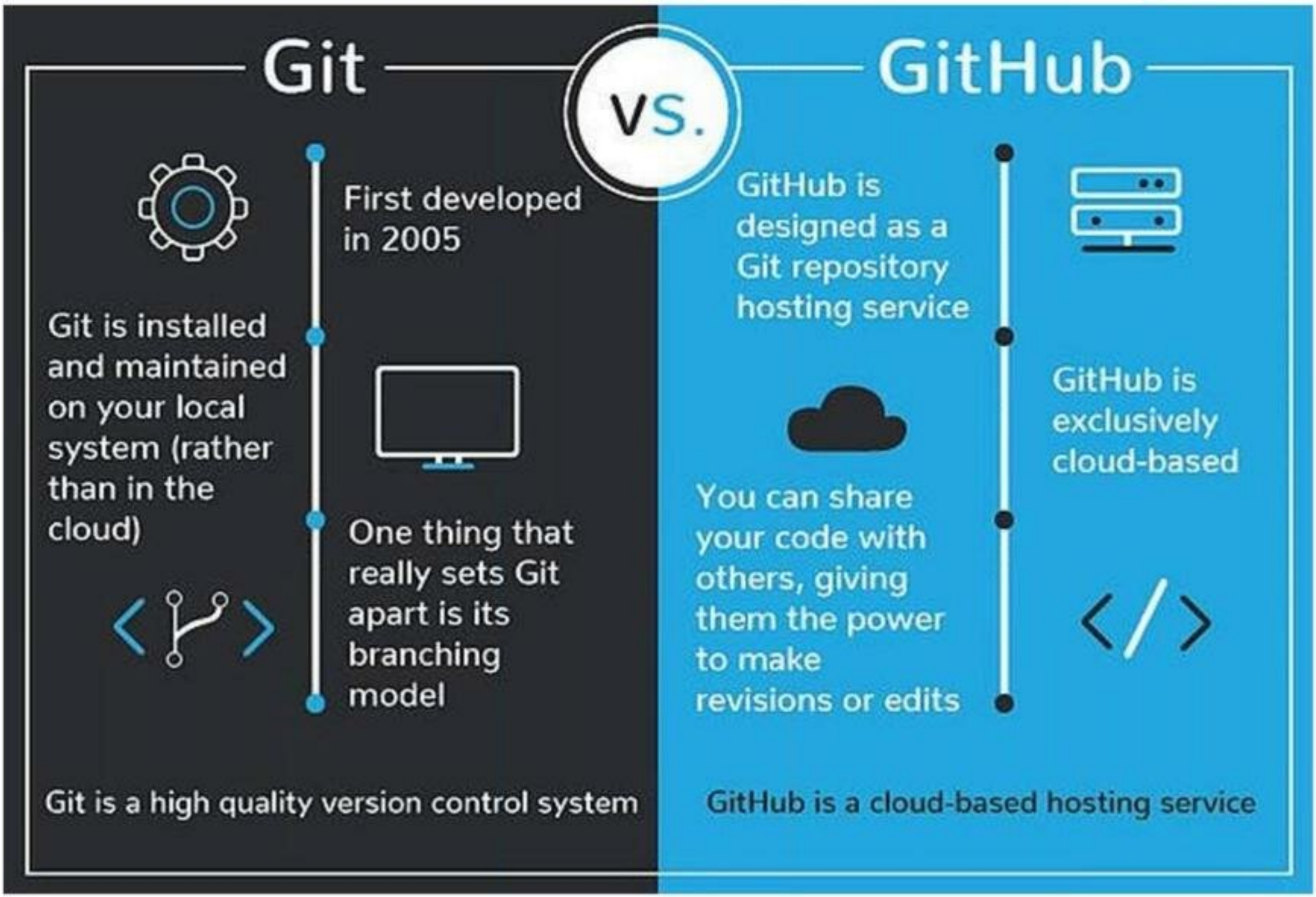
Download and install Git

http://git-scm.com/download (try this first)

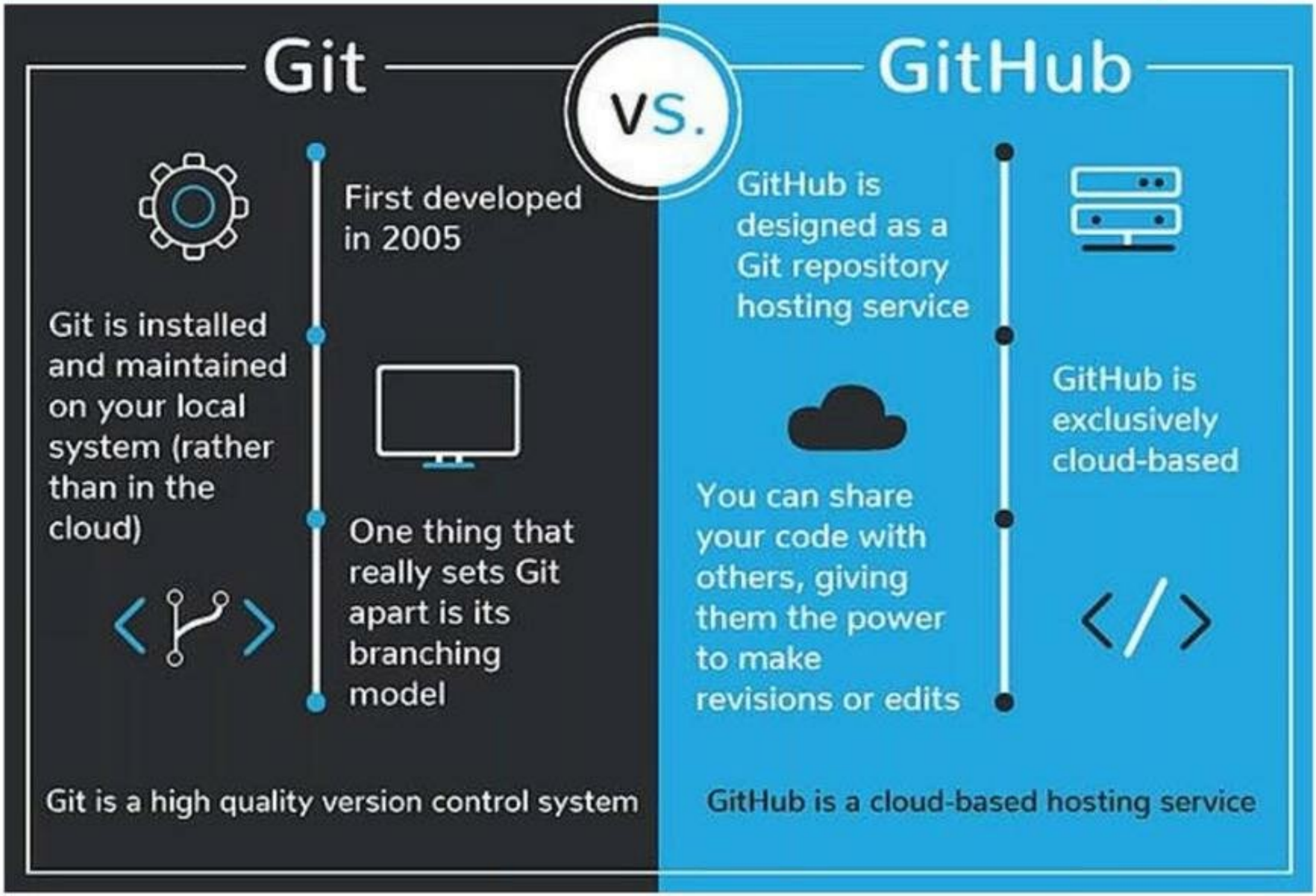
- Linux: apt-get install git-core
- Mac: http://code.google.com/p/git-osx-installer/
- Windows: http://msysgit.github.com/
  - Git bash
- Eclipse extensions such as eGit
- Github GUI

- Git Repository is a place where Git can store versions of our files
  - **$ cd ~/gitclass**
  - **$ mkdir demo**
  - **$ cd demo**
  - **$ git init**
  - **$ dir /ah or $ ls -a** (* .git directory to store all the tracing info)

Git vs GitHub



Git vs GitHub



Introduce yourself to Git

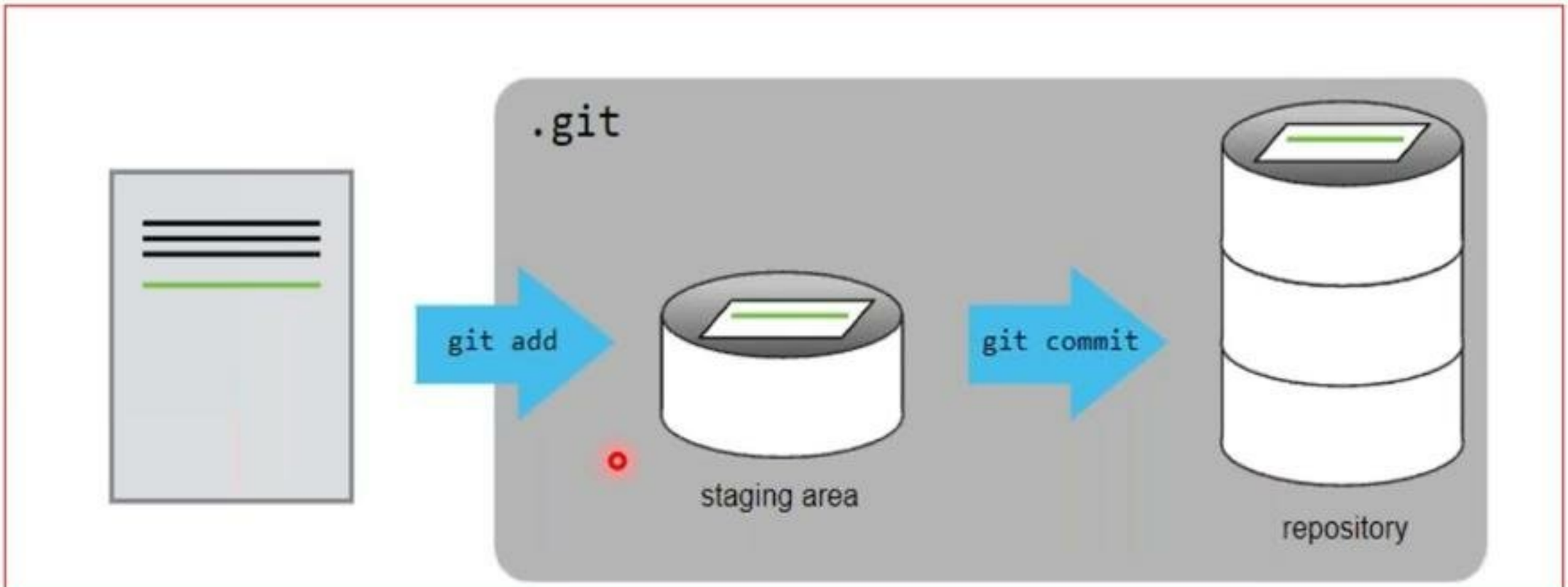
- Enter these lines (with appropriate changes):
  - `git config user.name "John Smith"`
  - `git config user.email jsmith@gmu.edu`

- `--global param`

Git Command

command	description
`git clone` ***`url [dir]`***	copy a git repository so you can add to it
`git add` ***`files`***	adds file contents to the staging area
`git commit`	records a snapshot of the staging area
`git status`	view the status of your files in the working directory and staging area
`git diff`	shows diff of what is staged and what is modified but unstaged
`git help` ***`[command]`***	get help info about a particular command
`git pull`	fetch from a remote repo and try to merge into the current branch
`git push`	push your new branches and data to a remote repository
others: `init`, `reset`, `branch`, `checkout`, `merge`, `log`, `tag`	

Adding a file to git repository



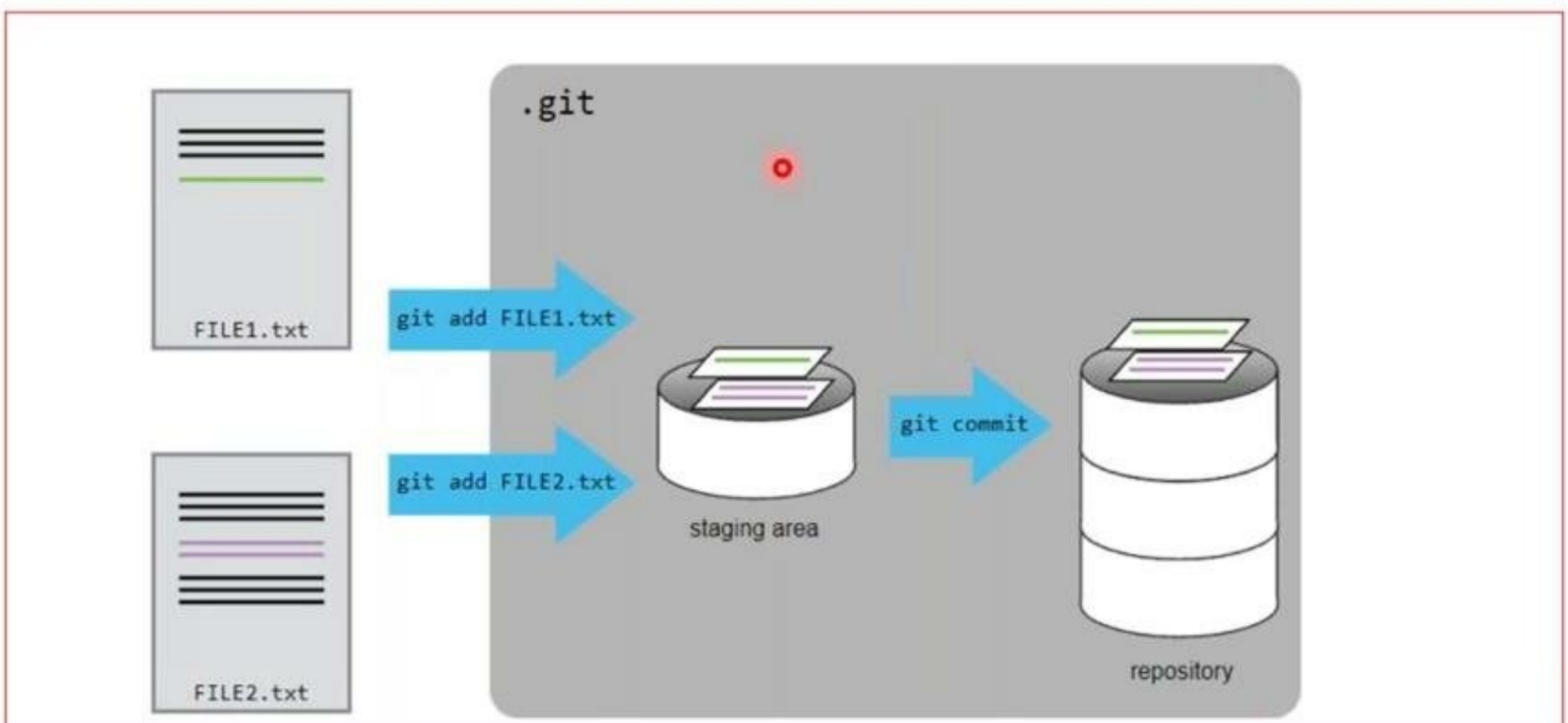
Adding a file to git repository

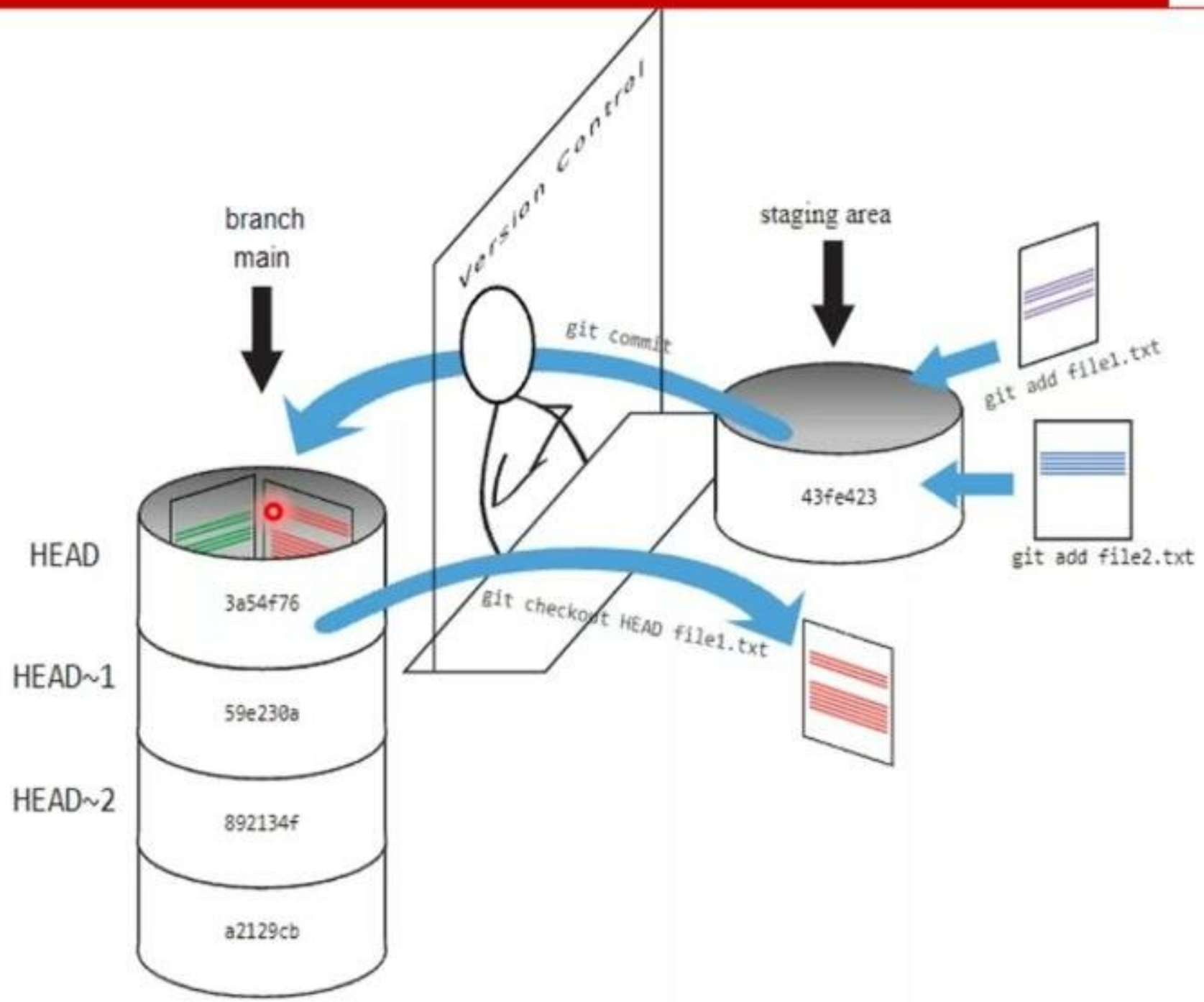
- Create a rose.txt file ,copy rose.txt to demo folder
- $**git checkout -b main**
- Git status $**git status**
- $ **git add rose.txt**
- $ **git status**
- $ **git commit -m “my first file checked in “**
- $ **git log**

Continue…

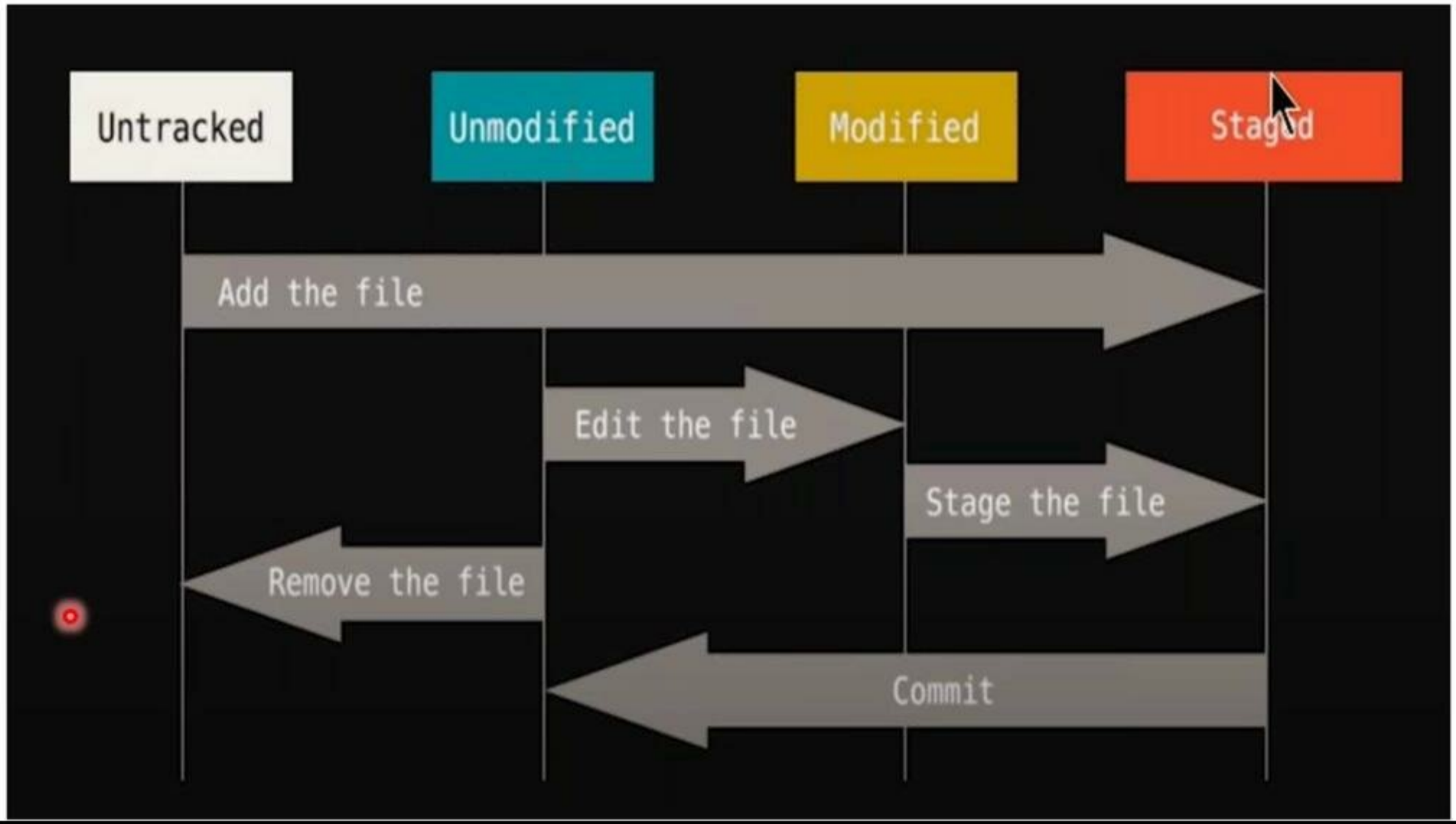
- Change rose.txt file
- $**git status**
- $**git diff**
- $**git commit -a –m “new message….”**

Adding Multimpule files…

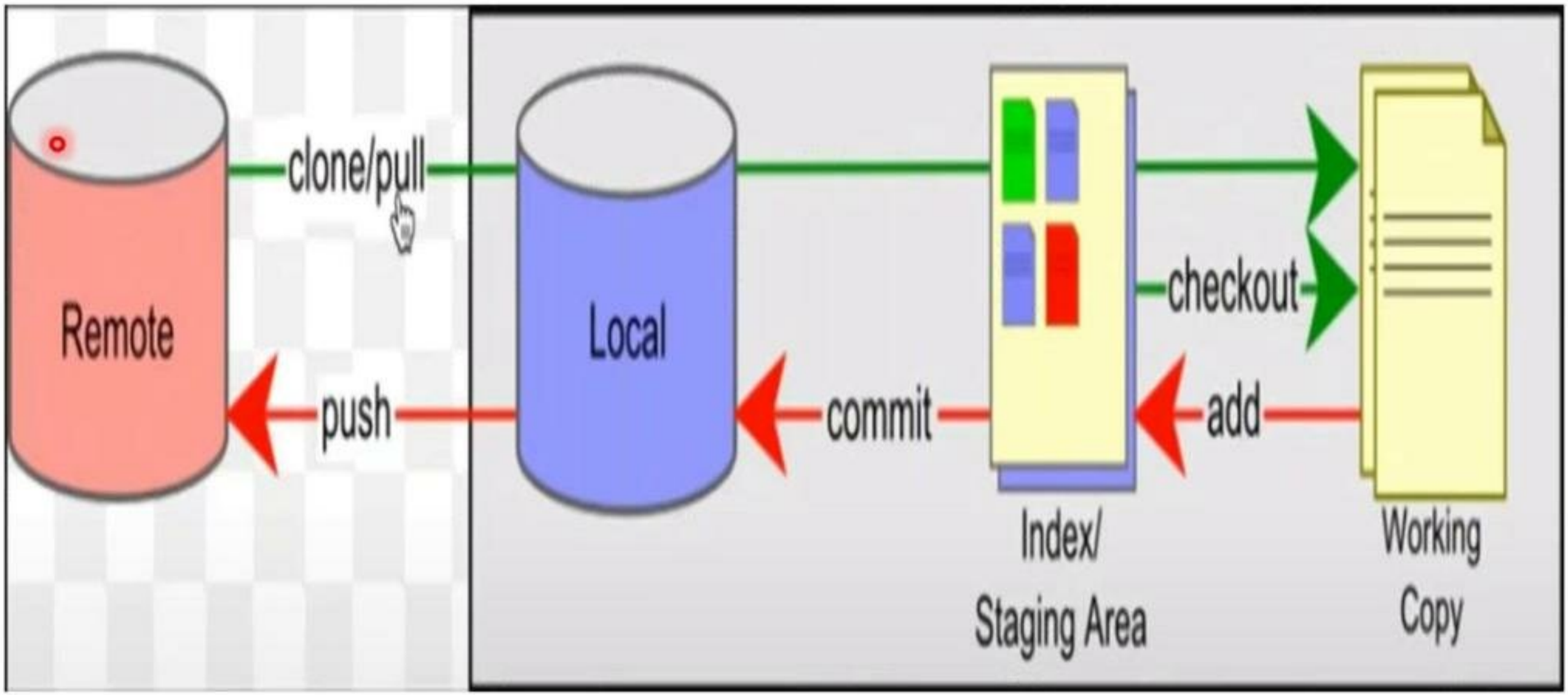



branch
main
Version Control
staging area
git commit
git add file1.txt
43fe423
git add file2.txt
HEAD
3a54f76
HEAD~1
59e230a
HEAD~2
892134f
a2129cb
Git checkout HEAD file1.txt

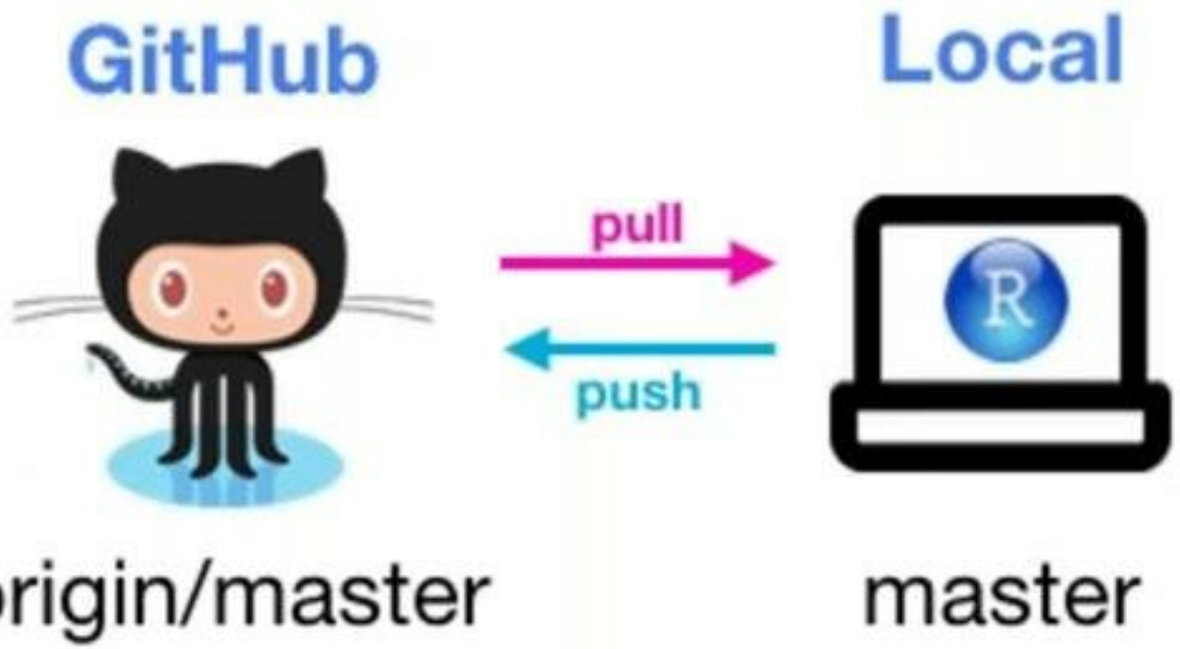
Different files



Git Pull & Push



Git Copies Origin vs Master



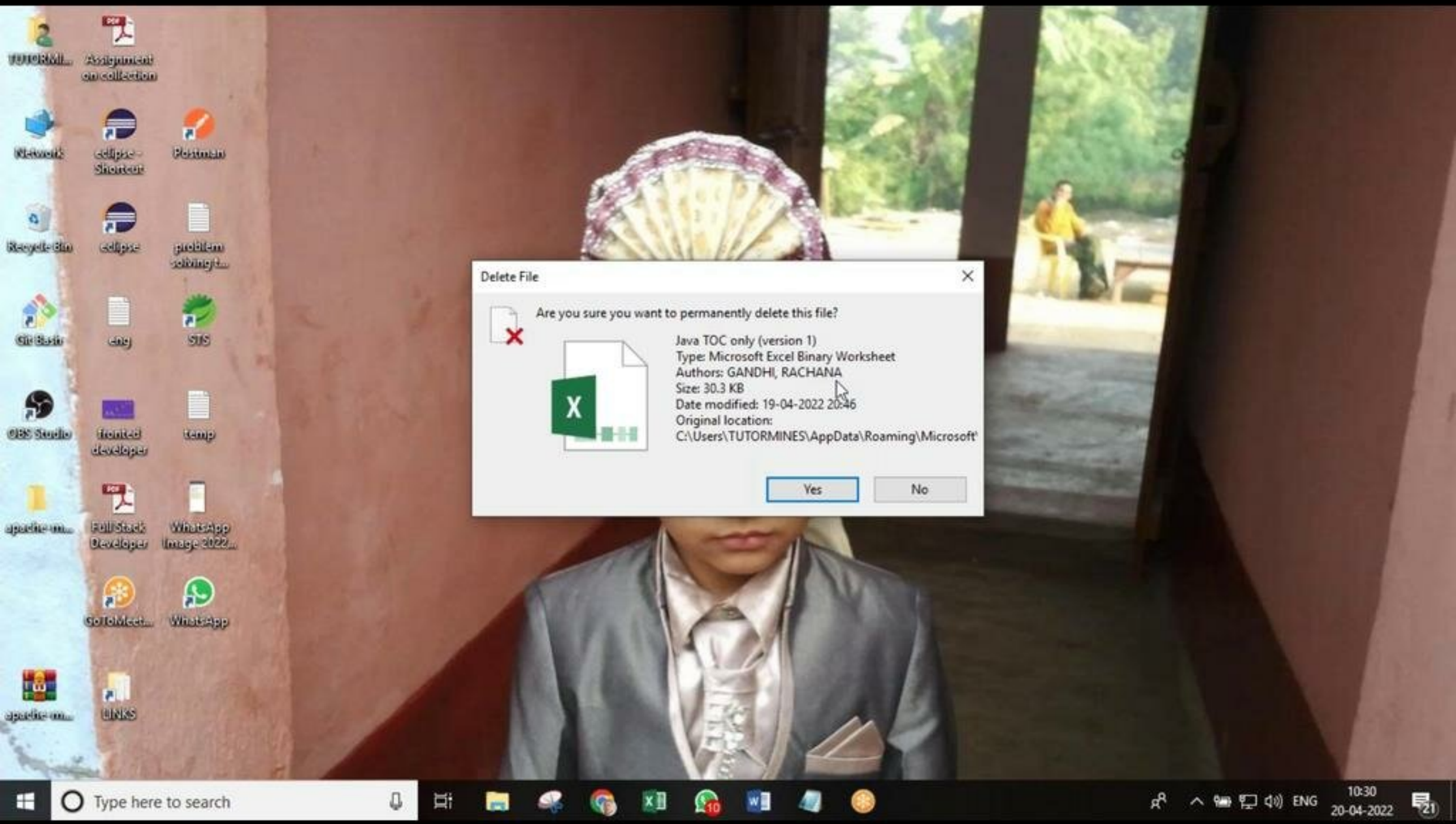
Git Tools

Windows Git Clients:

- **Sourcetree**
- **GitHub for Windows**.
- **Tortoise Git**

Mac Git Clients:

- **GitUp**
- **GitBox**
- **Git-Xdev**


Delete File
Are you sure you want to permanently delete this file?
Java TOC only (version 1)
Type: Microsoft Excel Binary Worksheet
Authors: GANDHI, RACHANA
Size: 30.3 KB
Date modified: 19-04-2022 20:46
Original location:
C:\Users\TUTORMINES\AppData\Roaming\Microsoft'
Yes
No
Type here to search
ENG
10:30
20-04-2022

MINGW64:/f/dxc/insurance

```
/f/dxc/insurance

TUTORMINES@DESKTOP-06Q6TAG MINGW64 /f/dxc/insurance
$ git init
Initialized empty Git repository in F:/dxc/insurance/.git/

TUTORMINES@DESKTOP-06Q6TAG MINGW64 /f/dxc/insurance (master)
$ ls

TUTORMINES@DESKTOP-06Q6TAG MINGW64 /f/dxc/insurance (master)
$ ls -a
./  ../  .git/

TUTORMINES@DESKTOP-06Q6TAG MINGW64 /f/dxc/insurance (master)
$
```

Open
Edit
History
Select all
Select none
Invert selection
Select
Search ins...

e modified	Type	Size
04-2022 10:43	File folder	
04-2022 10:51	JAVA File	1 KB
04-2022 10:53	JAVA File	1 KB
04-2022 10:46	Text Document	0 KB

Downloads
Music
Pictures
Videos
Local Disk (C:)
cor adv and db (D:)
ent1 (E:)
ent2 (F:)

4 items

Assignment on collection
Full Stack Developer
WhatsApp Image 2022...
WhatsApp
LINKS
OBS Studio
Recycle Bin
Git Bash

Type here to search

ENG
10:53
20-04-2022

MINGW64:/f/dxc/insurance

```
        new file:   Demo1.java

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:   Demo1.java

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        Demo2.java
        New Text Document.txt


TUTORMINES@DESKTOP-06Q6TAG MINGW64 /f/dxc/insurance (master)
$
```

Open
Edit
History
Select all
Select none
Invert selection
Select
Search ins...

e modified	Type	Size
04-2022 10:56	File folder	
04-2022 10:56	JAVA File	1 KB
04-2022 10:53	JAVA File	1 KB
04-2022 10:46	Text Document	0 KB

- Downloads
- Music
- Pictures
- Videos
- Local Disk (C:)
- cor adv and db (D:)
- ent1 (E:)
- ent2 (F:)

4 items 1 item selected 202 bytes

Type here to search

ENG 10:56 20-04-2022

MINGW64:/f/dxc/insurance

```
Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   Demo1.java

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:   Demo1.java

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        Demo2.java
        New Text Document.txt
```

Open
Edit
History
Select all
Select none
Invert selection
Select
Search ins...

e modified	Type	Size
04-2022 10:56	File folder	
04-2022 10:56	JAVA File	1 KB
04-2022 10:53	JAVA File	1 KB
04-2022 10:46	Text Document	0 KB

- Downloads
- Music
- Pictures
- Videos
- Local Disk (C:)
- cor adv and db (D:)
- ent1 (E:)
- ent2 (F:)

4 items 1 item selected 202 bytes

Type here to search

ENG 10:56 20-04-2022

MINGW64:/f/dxc/insurance

```
TUTORMINES@DESKTOP-O6Q6TAG MINGW64 /f/dxc/insurance (master)
$ git status
On branch master
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:   Demo1.java

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        Demo2.java
        New Text Document.txt

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

Open
Edit
History
Select all
Select none
Invert selection
Select
Search ins...

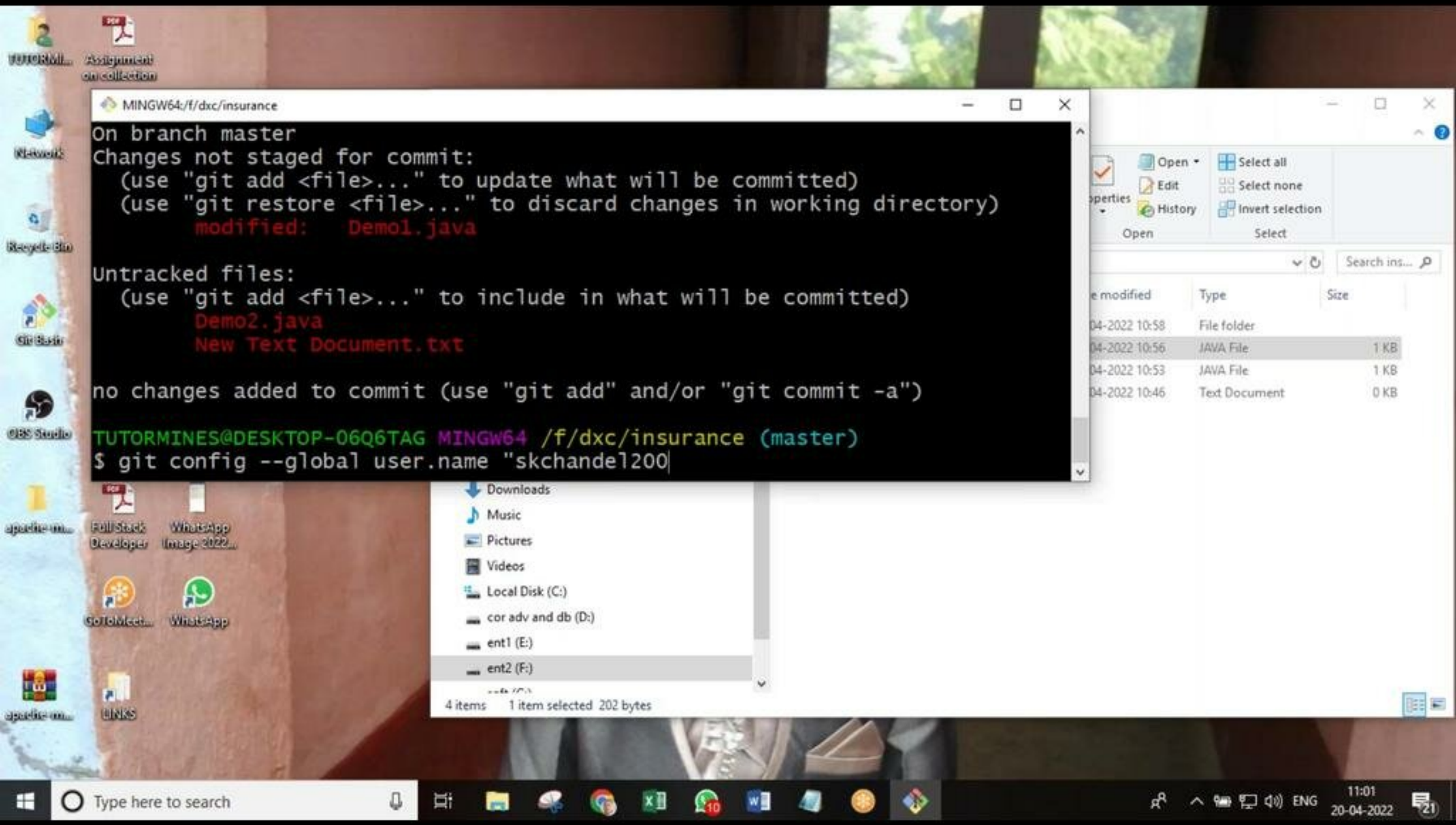
e modified	Type	Size
04-2022 10:58	File folder	
04-2022 10:56	JAVA File	1 KB
04-2022 10:53	JAVA File	1 KB
04-2022 10:46	Text Document	0 KB

Downloads
Music
Pictures
Videos
Local Disk (C:)
cor adv and db (D:)
ent1 (E:)
ent2 (F:)

4 items 1 item selected 202 bytes

Type here to search

ENG
10:58
20-04-2022


MINGW64:/f/dxc/insurance
On branch master
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: Demo1.java
Untracked files:
(use "git add <file>..." to include in what will be committed)
Demo2.java
New Text Document.txt
no changes added to commit (use "git add" and/or "git commit -a")
TUTORMINES@DESKTOP-06Q6TAG MINGW64 /f/dxc/insurance (master)
$ git config --global user.name "skchandel200
Assignment on collection
Network
Recycle Bin
Git Bash
OBS Studio
Full Stack Developer
WhatsApp Image 2022...
GoToMeet...
WhatsApp
LINKS
Open
Edit
History
Select all
Select none
Invert selection
Open
Select
Search ins...
Type
Size
File folder
JAVA File
1 KB
JAVA File
1 KB
Text Document
0 KB
Downloads
Music
Pictures
Videos
Local Disk (C:)
cor adv and db (D:)
ent1 (E:)
ent2 (F:)
4 items
1 item selected 202 bytes
Type here to search
ENG
11:01
20-04-2022

MINGW64:/f/dxc/insurance

```
$ git config --global user.email
skchandel2009@gmail.com

TUTORMINES@DESKTOP-06Q6TAG MINGW64 /f/dxc/insurance (master)
$ ls -lart
total 10
drwxr-xr-x 1 TUTORMINES 197121   0 Apr 20 10:42  ../
-rw-r--r-- 1 TUTORMINES 197121   0 Apr 20 10:46 'New Text Document.txt'
drwxr-xr-x 1 TUTORMINES 197121   0 Apr 20 10:52  ./
-rw-r--r-- 1 TUTORMINES 197121 163 Apr 20 10:53  Demo2.java
-rw-r--r-- 1 TUTORMINES 197121 202 Apr 20 10:56  Demo1.java
drwxr-xr-x 1 TUTORMINES 197121   0 Apr 20 10:58  .git/

TUTORMINES@DESKTOP-06Q6TAG MINGW64 /f/dxc/insurance (master)
$ g
```

Open
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History
Select all
Select none
Invert selection
Select
Search ins...

e modified	Type	Size
04-2022 10:58	File folder	
04-2022 10:56	JAVA File	1 KB
04-2022 10:53	JAVA File	1 KB
04-2022 10:46	Text Document	0 KB

Downloads
Music
Pictures
Videos
Local Disk (C:)
cor adv and db (D:)
ent1 (E:)
ent2 (F:)

4 items 1 item selected 202 bytes

Type here to search

ENG 11:06 20-04-2022

MINGW64:/f/dxc/insurance

```
On branch master
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:   Demo1.java

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        Demo2.java
        New Text Document.txt

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

TUTORMINES@DESKTOP-06Q6TAG MINGW64 /f/dxc/insurance (master)
$ git add Demo
```

Open · Edit · History · Select all · Select none · Invert selection

Open · Select

Search ins...

e modified	Type	Size
04-2022 11:06	File folder	
04-2022 10:56	JAVA File	1 KB
04-2022 10:53	JAVA File	1 KB
04-2022 10:46	Text Document	0 KB

- Downloads
- Music
- Pictures
- Videos
- Local Disk (C:)
- cor adv and db (D:)
- ent1 (E:)
- ent2 (F:)

4 items 1 item selected 202 bytes

Type here to search

ENG 11:06 20-04-2022

MINGW64:/f/dxc/insurance

```
TUTORMINES@DESKTOP-O6Q6TAG MINGW64 /f/dxc/insurance (master)
$ git diff
diff --git a/Demo1.java b/Demo1.java
index d4922fc..158da16 100644
--- a/Demo1.java
+++ b/Demo1.java
@@ -3,5 +3,7 @@ public class Demo1{
         public static void main(String args[]){
         {
         System.out.println("Welcome to git..");
+        System.out.println("I have added one more line after adding in stagg
ing area..");
+
         }
```

Open
Edit
History
Select all
Select none
Invert selection
Select

e modified	Type	Size
04-2022 11:08	File folder	
04-2022 10:56	JAVA File	1 KB
04-2022 11:08	JAVA File	1 KB
04-2022 10:46	Text Document	0 KB

Downloads
Music
Pictures
Videos
Local Disk (C:)
cor adv and db (D:)
ent1 (E:)
ent2 (F:)

4 items 1 item selected 201 bytes

Type here to search

ENG 11:08 20-04-2022

MINGW64:/f/dxc/insurance

```
 create mode 100644 Demo2.java

TUTORMINES@DESKTOP-O6Q6TAG MINGW64 /f/dxc/insurance (master)
$ git log
commit e67b6af2bbcd5fa22936400f63e292feaf903717 (HEAD -> master)
Author: skchandel2009 <skchandel2009@gmail.com>
Date:   Wed Apr 20 11:11:32 2022 +0530

    all are well

commit 6194eaffca2aee0df06ad47be5723f34adf784c6
Author: skchandel2009 <skchandel2009@gmail.com>
Date:   Wed Apr 20 10:57:29 2022 +0530

    just added one more line
```

Open
Edit
History
Select all
Select none
Invert selection
Select
Search ins...

e modified	Type	Size
04-2022 11:11	File folder	
04-2022 10:56	JAVA File	1 KB
04-2022 11:08	JAVA File	1 KB
04-2022 10:46	Text Document	0 KB

Downloads
Music
Pictures
Videos
Local Disk (C:)
cor adv and db (D:)
ent1 (E:)
ent2 (F:)

4 items

Type here to search

ENG 11:12 20-04-2022

MINGW64:/f/dxc/insurance

```
TUTORMINES@DESKTOP-O6Q6TAG MINGW64 /f/dxc/insurance (master)
$ git rm New Text Document.txt
fatal: pathspec 'New' did not match any files

TUTORMINES@DESKTOP-O6Q6TAG MINGW64 /f/dxc/insurance (master)
$ git rm "New Text Document.txt"
fatal: pathspec 'New Text Document.txt' did not match any files

TUTORMINES@DESKTOP-O6Q6TAG MINGW64 /f/dxc/insurance (master)
$ git rm Demo3.java
rm 'Demo3.java'

TUTORMINES@DESKTOP-O6Q6TAG MINGW64 /f/dxc/insurance (master)
$
```

Open
Edit
History
Select all
Select none
Invert selection
Select
Search ins...

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04-2022 11:22	File folder	
04-2022 10:56	JAVA File	1 KB
04-2022 11:08	JAVA File	1 KB
04-2022 10:46	Text Document	0 KB

Downloads
Music
Pictures
Videos
Local Disk (C:)
cor adv and db (D:)
ent1 (E:)
ent2 (F:)

4 items

Type here to search

ENG 11:22 20-04-2022