

Thadomal Shahani Engineering College, Bandra
Department of Artificial Intelligence & Data Science

Name: Vinit Bishal Lunia				Subject: ML Laboratory
TE- 1	Batch: T13	Sem: 6	Roll No: 2301063	Date: 19-01-2026

Experiment No: 02

Aim: To understand Version Control System / Source Code Management, install git and create a GitHub account

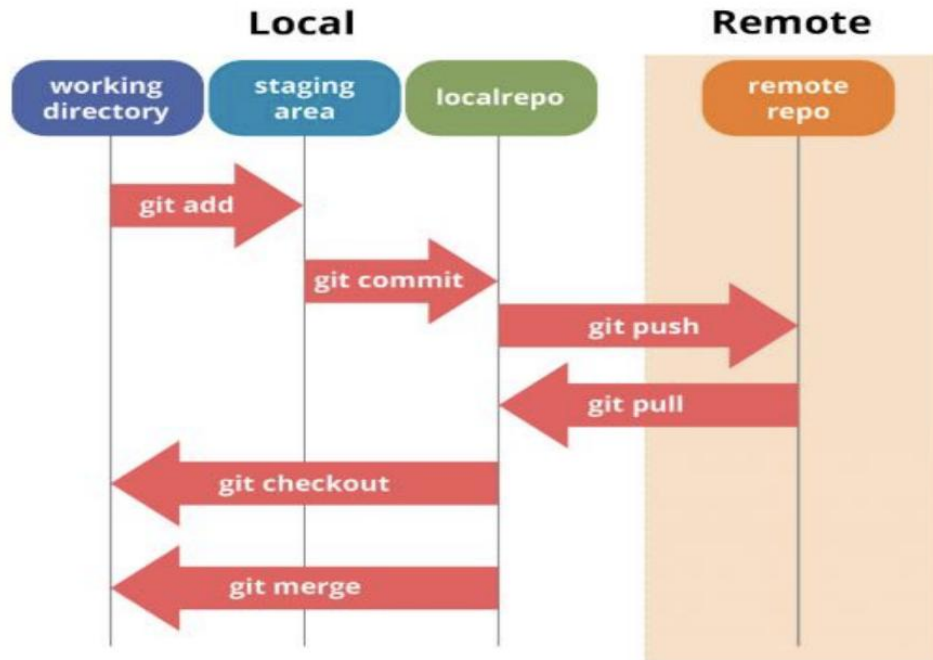
Theory:

- Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency. Git is easy to learn and has a tiny footprint with lightning fast performance. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like cheap local branching, convenient staging areas, and multiple workflows.
- Some of the basic operations in Git are:
 1. Initialize
 2. Add
 3. Commit
 4. Pull
 5. Push
- Some advanced Git operations are:
 1. Branching
 2. Merging
 3. Rebasing

The following diagram depict the all supported operations in GIT

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- Installation of GIT**

- 1) In windows, download GIT from <https://git-scm.com/> and perform the straightforward installation.
- 2) In Ubuntu, install GIT using `$sudo apt install git`,
Confirm the version after installation using command `$git --version`

```
MINGW64:/c/Users/bisha
bisha@Bisha1 MINGW64 ~
$ git --version
git version 2.49.0.windows.1
bisha@Bisha1 MINGW64 ~
$ |
```

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Output:

```
MINGW64:/c/Users/15L/desktop/SEPM_63

15L@LAB08-007 MINGW64 ~/desktop/SEPM_63 (master)
$ ls
Experiment_02/  SEPM_Sem6/

15L@LAB08-007 MINGW64 ~/desktop/SEPM_63 (master)
$ |
```

```
MINGW64:/c/Users/15L/desktop/SEPM_63
15L@LAB08-007 MINGW64 ~/desktop/SEPM_63 (master)
$ ls
Experiment_02/  SEPM_Sem6/
15L@LAB08-007 MINGW64 ~/desktop/SEPM_63 (master)
$ mv Experiment_02 SEPM_Sem6/
15L@LAB08-007 MINGW64 ~/desktop/SEPM_63 (master)
$ ls SEPM_Sem6/
Experiment_02  README.md
15L@LAB08-007 MINGW64 ~/desktop/SEPM_63 (master)
$ |
```

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```
MINGW64/C:/Users/TSU/Desktop/SEPM_63/SEPM_Sem6
151LAB08-007 KING64 ~/Desktop/SEPM_63 (master)
$ ls
Experiment_02/  SEPM_Sem6/
151LAB08-007 KING64 ~/Desktop/SEPM_63 (master)
$ mv Experiment_02 SEPM_Sem6/
151LAB08-007 KING64 ~/Desktop/SEPM_63 (master)
$ ls SEPM_Sem6/
Experiment_02/  README.md
151LAB08-007 KING64 ~/Desktop/SEPM_63 (master)
$ cd SEPM_Sem6
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ pwd
C:/Users/TSU/Desktop/SEPM_63/SEPM_Sem6
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.
nothing to commit, working tree clean
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ git config --global user.name "Vinit Lunia"
git config --global user.email "lunavinit@gmail.com"
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ git add Experiment_02/
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.
nothing to commit, working tree clean
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ git commit -m "Added SEPM Experiment 2 - Git & Github"
On branch main
Your branch is up to date with 'origin/main'.
nothing to commit, working tree clean
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ git push origin master
error: src refspec master does not match any
error: Failed to push some refs to 'https://github.com/itsvinitlunia/SEPM_Sem6.git'
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ git push origin main
fatal: user cancelled dialog.

remote: Invalid username or token. Password authentication is not supported for Git operations.
fatal: Authentication failed for 'https://github.com/itsvinitlunia/SEPM_Sem6.git/'
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ git push origin main
Everything up-to-date
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ |
```

```
MINGW64/C:/Users/TSU/Desktop/SEPM_63/SEPM_Sem6
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ cd ~/Desktop/SEPM_63/SEPM_Sem6
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ ls
Experiment_02/  README.md
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.
nothing to commit, working tree clean
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ git add -A
bash: git: command not found
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ git add -A
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.
nothing to commit, working tree clean
151LAB08-007 KING64 ~/Desktop/SEPM_63/SEPM_Sem6 (main)
$ |
```

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```
MINOWBA/C/Users/T3U/Desktop/SEPM_63/SEPM_Send
151LALAB08-007 HINGOLA ~/Desktop/SEPM_63/SEPM_Send (main)
$ cd ~/Desktop/SEPM_63/SEPM_Send
151LALAB08-007 HINGOLA ~/Desktop/SEPM_63/SEPM_Send (main)
$ ls
Experiment_02/ README.md
151LALAB08-007 HINGOLA ~/Desktop/SEPM_63/SEPM_Send (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    Experiment_02/

nothing added to commit but untracked files present (use "git add" to track)
151LALAB08-007 HINGOLA ~/Desktop/SEPM_63/SEPM_Send (main)
$
```

```
MINOWBA/C/Users/T3U/Desktop/SEPM_63/SEPM_Send
151LALAB08-007 HINGOLA ~/Desktop/SEPM_63/SEPM_Send (main)
$ cd ~/Desktop/SEPM_63/SEPM_Send
151LALAB08-007 HINGOLA ~/Desktop/SEPM_63/SEPM_Send (main)
$ ls
Experiment_02/ README.md
151LALAB08-007 HINGOLA ~/Desktop/SEPM_63/SEPM_Send (main)
$ git status
On branch main
Your branch is up to date with 'origin/main'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    Experiment_02/

nothing added to commit but untracked files present (use "git add" to track)
151LALAB08-007 HINGOLA ~/Desktop/SEPM_63/SEPM_Send (main)
$ git add Experiment_02
151LALAB08-007 HINGOLA ~/Desktop/SEPM_63/SEPM_Send (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:   Experiment_02/Practicals on GIT.pdf

151LALAB08-007 HINGOLA ~/Desktop/SEPM_63/SEPM_Send (main)
$ git commit -m "Added SEPM Experiment 2 PDF"
[main a0aaad5] Added SEPM Experiment 2 PDF
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 Experiment_02/Practicals on GIT.pdf
151LALAB08-007 HINGOLA ~/Desktop/SEPM_63/SEPM_Send (main)
$ git push origin main
Enumerating objects: 1, done.
Counting objects: 100% (1/1), done.
Delta compression using up to 20 threads
Compressing objects: 100% (1/1), done.
Writing objects: 100% (1/1), 816.96 KiB | 35.71 MiB/s, done.
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/itsvinitlunia/SEPM_Send.git
 55a76a6..a0aaad5 main -> main
151LALAB08-007 HINGOLA ~/Desktop/SEPM_63/SEPM_Send (main)
$
```

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Conclusion: Successfully performed Version Control System / Source Code Management, install git and create a GitHub account