Session 1 - Assignment

Part 1: Unix Commands Practice

Setup:

- a. Open your terminal.
- b. Create a folder named unix-practice.

Tasks:

- c. Navigate into the unix-practice folder.
- d. Perform the following and document commands used in a text file (commands.txt):

List all files in the directory in long format and include hidden files.

Create three directories: test1, test2, test3.

Navigate into test1 and create an empty file file1.txt.

Copy file1.txt into test2.

Rename file1.txt in test2 to file2.txt.

Remove test3 directory.

Use chmod to change file1.txt permissions to allow read and write for the owner only.

Find and list all .txt files in the unix-practice directory using the find command.

Use grep to search for the word "Unix" in a sample file (you can create your own).

Display system information using whoami and df. Go through more commands about system information

Familiarize yourself with networking commands

```
root@VComply:~# mkdir unix-practice root@VComply:~# cd unix-practice
```

```
root@VComply:~/unix-practice# ls -a
... commands.txt
root@VComply:~/unix-practice# mkdir test1
root@VComply:~/unix-practice# mkdir test2
root@VComply:~/unix-practice# mkdir test3
root@VComply:~/unix-practice# ls -a
... commands.txt test1 test2 test3
```

```
root@VComply:~/unix-practice# cd test1
root@VComply:~/unix-practice/test1# ls
file1.txt
```

```
root@VComply:~/unix-practice/test1# pwd
/root/unix-practice/test1
root@VComply:~/unix-practice/test1# cp file1.txt /root/unix-practice/tes
root@VComply:~/unix-practice/test1# cd ...
root@VComply:~/unix-practice# cd test2
root@VComply:~/unix-practice/test2# ls
file1.txt
root@VComply:~/unix-practice/test2# ls
root@VComply:~/unix-practice/test2# mv file1.txt file2.txt
root@VComply:~/unix-practice/test2# ls
file2.txt
root@VComply:~/unix-practice/test2#
root@VComply:~/unix-practice/test2# cd ...
root@VComply:~/unix-practice# rm -r test3
root@VComply:~/unix-practice# ls
commands.txt test1 test2
root@VComply:~/unix-practice# cd test1
root@VComply:~/unix-practice/test1# ls
file1.txt
root@VComply:~/unix-practice/test1# chmod 600 file1.txt
root@VComply:~/unix-practice# find -type f -name "*.txt"
./test1/file1.txt
./commands.txt
./test2/file2.txt
root@VComply:~/unix-practice#
```

```
root@VComply:~/unix-practice# cd test1
root@VComply:~/unix-practice/test1# nano file1.txt
root@VComply:~/unix-practice/test1# vi file1.txt
root@VComply:~/unix-practice/test1# grep "Unix" file1.txt
Unix is an open-source OS.
```

```
root@VComply:~/unix-practice/test1# whoami
root
root@VComply:~/unix-practice/test1# df
Filesystem
               1K-blocks
                             Used Available Use% Mounted on
/dev/sdb
               263174212 1184576 248551480
                                              1% /
                                              1% /mnt/wsl
                 4032764
                                4
                                    4032760
none
                                             33% /init
               203058028 65907824 137150204
tools
                                    4032764
                                              0% /run
none
                 4032764
                                0
none
                 4032764
                                0
                                    4032764
                                              0% /run/lock
                                              0% /run/shm
                 4032764
                                0
                                    4032764
none
                 4032764
                                0
                                    4032764
                                              0% /run/user
none
tmpfs
                 4032764
                                0
                                    4032764
                                              0% /sys/fs/cgroup
drivers
               203058028 65907824 137150204
                                             33% /usr/lib/wsl/drivers
lib
               203058028 65907824 137150204
                                             33% /usr/lib/wsl/lib
drvfs
               203058028 65907824 137150204
                                             33% /mnt/c
```

root@VComply:~/unix-practice/test1# top top - 15:44:20 up 25 min, 0 users, load average: 0.00, 0.00, 0.00 Tasks: 5 total, 1 running, 4 sleeping, 0 stopped, 0 zombie %Cpu(s): 0.0 us, 0.0 sy, 0.0 ni,100.0 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 7876.5 total, 7724.4 free, 86.0 used, 66.0 buff/cache 7628.4 avail Mem MiB Swap: 2048.0 total, 2048.0 free, 0.0 used. PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND 1 root 20 0 1804 1180 1104 S 0.0 0.0 0:00.03 init 20 0 S 0.0 7 root 0 1804 80 0.0 0:00.00 init 0 S 8 root 20 0 1812 80 0.0 0.0 0:00.49 init 9 root 20 0 6116 5108 3388 S 0.0 0.1 0:00.43 bash

3032 R

0.0

0.0

0:00.00 top

3636

root@VComply:~/unix-practice/test1# ps
PID TTY TIME CMD
9 pts/0 00:00:00 bash
85 pts/0 00:00:00 ps
root@VComply:~/unix-practice/test1#

0

7800

20

84 root

```
root@VComply:~/unix-practice# ip addr show
1: lo: <LOOPBACK, UP, LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default
 glen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: bond0: <BROADCAST, MULTICAST, MASTER> mtu 1500 qdisc noop state DOWN group defau
    link/ether 5a:fc:db:b6:2f:18 brd ff:ff:ff:ff:ff:ff
3: dummy0: <BROADCAST,NOARP> mtu 1500 qdisc noop state DOWN group default glen 10
    link/ether b6:5a:e7:ce:ba:0e brd ff:ff:ff:ff:ff:ff
4: tunl0@NONE: <NOARP> mtu 1480 qdisc noop state DOWN group default glen 1000
    link/ipip 0.0.0.0 brd 0.0.0.0
5: sit0@NONE: <NOARP> mtu 1480 qdisc noop state DOWN group default glen 1000
    link/sit 0.0.0.0 brd 0.0.0.0
6: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group defau
lt qlen 1000
    link/ether 00:15:5d:16:a7:98 brd ff:ff:ff:ff:ff
    inet 172.18.136.224/20 brd 172.18.143.255 scope global eth0
       valid_lft forever preferred_lft forever
    inet6 fe80::215:5dff:fe16:a798/64 scope link
       valid_lft forever preferred_lft forever
root@VComply:~/unix-practice#
root@VComply:~/unix-practice# ping google.co.in
PING google.co.in (142.250.196.3) 56(84) bytes of data.
64 bytes from maa03s44-in-f3.1e100.net (142.250.196.3): icmp_seq=1 ttl=56 time=12
.7 ms
64 bytes from maa03s44-in-f3.1e100.net (142.250.196.3): icmp_seq=2 ttl=56 time=16
64 bytes from maa03s44-in-f3.1e100.net (142.250.196.3): icmp_seq=3 ttl=56 time=15
.5 ms
^C
 --- google.co.in ping statistics
3 packets transmitted, 3 received, 0% packet loss, time 2005ms
rtt min/avg/max/mdev = 12.745/14.865/16.304/1.530 ms
root@VComply:~/unix-practice# host google.co.in
google.co.in has address 142.250.196.3
google.co.in has IPv6 address 2404:6800:4007:829::2003
google.co.in mail is handled by 0 smtp.google.com.
root@VComply:~/unix-practice# curl google.co.in
```

<HTML><HEAD><meta http-equiv="content-type" content="text/html;charset=utf-8">

Activate Windows

Go to Settings to activate Windows.

<TITLE>301 Moved</TITLE></HEAD><BODY>

here.

<H1>301 Moved</H1>
The document has moved

</BODY></HTML>

Part 2: Git Basics Practice

Setup:

- a. Create a new folder named git-practice.
- b. Initialize a Git repository inside it.

Tasks:

- c. Configure Git with your name and email.
- d. Create a file readme.md with the content
- e. Stage and commit the file.
- f. Create a new branch named feature-branch. Switch to it.
- g. Add a new file feature.txt and commit it.
- h. Switch back to the main branch.
- i. Merge feature-branch into main.
- i. Simulate a conflict:
- i. Modify readme.md in both main and feature-branch.
- ii. Merge feature-branch into main and resolve the conflict.
- k. Use git log to view the commit history.
- l. Use git stash to temporarily save changes in main and apply them later.

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS GITLENS

PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1> cd git-practice

PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git in Initialized empty Git repository in C:/Users/SGaurisankar/Desktop/Inception/Assignment tice/.git/

PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> ■
```

```
AzureAD+SGaurisankar@VComply MINGW64 ~

$ git config --global user.email "gaurisankar@v-comply.com"

AzureAD+SGaurisankar@VComply MINGW64 ~

$ git config --global user.name "Gaurisankar-s"
```

```
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\|
git-practice> git add readme.md
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\|
git-practice> git commit -m "Adding readme"
[main (root-commit) 9da8b49] Adding readme
1 file changed, 33 insertions(+)
create mode 100644 readme.md
```

```
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\
git-practice> git branch feature-branch
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\
git-practice> git checkout feature-branch
Switched to branch 'feature-branch'
```

```
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\
git-practice> git add feature.txt
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\
git-practice> git commit -m "Adding feature"
[feature-branch 4bd4a9c] Adding feature
1 file changed, 1 insertion(+)
create mode 100644 feature.txt
```

```
    PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git merge feature -branch
        Updating 9da8b49..3a92e1f
        Fast-forward
        feature.txt | 0
        1 file changed, 0 insertions(+), 0 deletions(-)
        create mode 100644 feature.txt
```

```
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-pr
actice> git merge feature-branch
Updating 9da8b49..3a92e1f
Fast-forward
feature.txt | 0
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 feature.txt
```

```
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git add readme.md
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git commit -m "Editing
ain branch readme"
[main 8eb439e] Editing main branch readme
1 file changed, 2 insertions(+)
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git push origin main
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 376 bytes | 188.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/S-Gaurisankar/git-practice.git
9da8b49..8eb439e main -> main
```

```
    PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git checkout feature-branch
```

```
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git add readme.md
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git commit -m "Editing f
eature branch readme"
[feature-branch 86aa615] Editing feature branch readme
    1 file changed, 2 insertions(+)
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git push origin feature-
branch
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 379 bytes | 189.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/S-Gaurisankar/git-practice.git
    3a92e1f..86aa615 feature-branch -> feature-branch
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice>
```

```
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git merge feature-branch
Auto-merging readme.md
CONFLICT (content): Merge conflict in readme.md
Automatic merge failed; fix conflicts and then commit the result.
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> \|
                                                                                    v SESSION 1 📑 🔁 ひ 📵 git-practice > ① readme.md > 🖭 # <<<<< HEADChange for conflict - Main branch

    task.txt
                         <<<<< HEAD (Current Change
                         *Change for conflict - Main branch*
                         *Change for conflict - feature-branch*
                                                                                  Resolve in Merge Editor
                          >>>>> feature-branch (Incoming Change)
  ① readme.md X
  git-practice > ① readme.md > 🖭 # GIT PRACTICE > 🖭 ### Setup:
             You, 2 minutes ago | 1 author (You)
             # GIT PRACTICE
             *Change for conflict resolution*
             *Change for conflict resolution*
```

```
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git add readme.md
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git commit -m "Conflict resolution"
[main 30c444a] Conflict resolution
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git merge feature-branch
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git merge feature-branch
Already up to date.
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git push origin main
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 367 bytes | 183.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
```

```
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git checkout feature-bra
Switched to branch 'feature-branch'
 PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git pull origin main
 From https://github.com/S-Gaurisankar/git-practice
                               -> FETCH HEAD
  * branch
                    main
 Updating 86aa615..30c444a
 Fast-forward
  readme.md | 4 +++
  1 file changed, 3 insertions(+), 1 deletion(-)
 PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git commit -m "Updating
 On branch feature-branch
 nothing to commit, working tree clean
 PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git push origin feature-
 branch
 Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
 To https://github.com/S-Gaurisankar/git-practice.git
    86aa615..30c444a feature-branch -> feature-branch
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git log
 commit 30c444a8ab2ccc63714abfb59c3b6bfb3d3cbfb8 (HEAD -> feature-branch, orig
    h, main)
 Merge: 8eb439e 86aa615
 Author: Gaurisankar-s <gaurisankar@v-comply.com>
 Date: Mon Jan 6 14:52:37 2025 +0530
    Conflict resolution
 commit 86aa6157e7d525f611f7b2c208c7469efde4613f
 Author: Gaurisankar-s <gaurisankar@v-comply.com>
 Date: Mon Jan 6 14:42:19 2025 +0530
    Editing feature branch readme
 commit 8eb439e3f8990383aeba89ed4e13ac7c2278218a
 Author: Gaurisankar-s <gaurisankar@v-comply.com>
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git checkout m
ain
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git stash push
Saved working directory and index state On main: Adding feature to readme
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git stash list
stash@{0}: On main: Adding feature to readme
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git stash appl
On branch main
Your branch is up to date with 'origin/main'.
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)
no changes added to commit (use "git add" and/or "git commit -a")
root@VComply:~/unix-practice/test1# free -h
                                  used
                                                                     buff/cache
                                                                                     available
                  total
                                                free
                                                            shared
                  7.7Gi
                                  85Mi
                                               7.5Gi
                                                             0.0Ki
                                                                             66Mi
                                                                                          7.4Gi
Mem:
                  2.0Gi
                                               2.0Gi
Swap:
                                    0B
                                                              Activate Windows
```

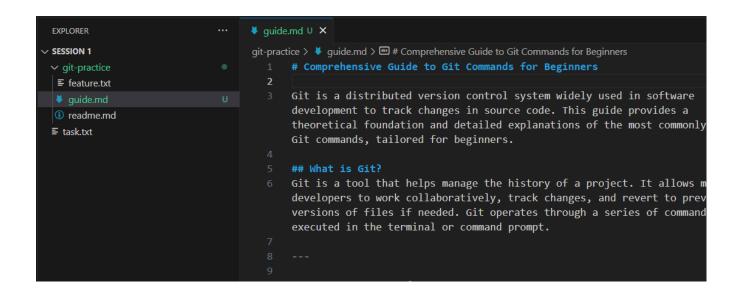
Part 3: AI Tools Exploration

Setup:

- a. Explore tools like Cursor, ChatGPT, Gemini, and GitHub Copilot.
- b. Use ChatGPT to write a summary of the Git workflow you practiced.

Tasks:

- c. Use ChatGPT to generate example content for a guide.md file that explains basic Git commands for beginners.
- d. Save the file in the git-practice folder.



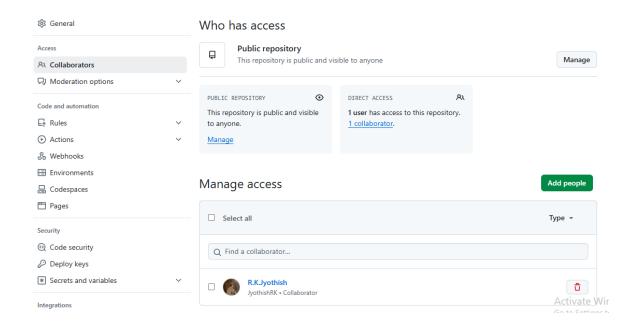
Part 4: GitHub Workflow

Setup:

- a. Create a new repository on GitHub (you can use GitHub Desktop or CLI).
- b. Clone the repository to your local machine.

Tasks:

- c. Push your git-practice project to the GitHub repository.
- d. Add another intern as a collaborator.
- e. Create a pull request to merge feature-branch into main.
- f. Request a review from your collaborator.
- g. Resolve any conflicts during the merge.



PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Sess ion 1\git-practice> git init Initialized empty Git repository in C:/Users/SGaurisankar/D esktop/Inception/Assignments/Session 1/git-practice/.git/

```
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git add .
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git commit -m "Adding files"
[main (root-commit) 0d0f1f3] Adding files
3 files changed, 225 insertions(+)
create mode 100644 feature.txt
create mode 100644 guide.md
create mode 100644 readme.md
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Session 1\git-practice> git remote add origin https://github.com/S-Gaurisankar/git-practice.git
```

```
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Sess ion 1\git-practice> git push origin main info: please complete authentication in your browser... Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (5/5), 3.26 KiB | 668.00 KiB/s, done.
Total 5 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/S-Gaurisankar/git-practice.git
  * [new branch] main -> main
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Sess ion 1\git-practice> [
```

```
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Sess ion 1\git-practice> git checkout -b "feature-branch"
Switched to a new branch 'feature-branch'
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Sess ion 1\git-practice> git add feature.txt
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Sess ion 1\git-practice> git commit -m "Adding feature"
[feature-branch 1b07256] Adding feature
1 file changed, 1 insertion(+)
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Sess
```

```
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Sess
ion 1\git-practice> git push origin feature-branch
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 334 bytes | 83.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from
0)
remote:
remote: Create a pull request for 'feature-branch' on GitHu
b by visiting:
             https://github.com/S-Gaurisankar/git-practice/
remote:
pull/new/feature-branch
remote:
To https://github.com/S-Gaurisankar/git-practice.git
* [new branch]
                    feature-branch -> feature-branch
PS C:\Users\SGaurisankar\Desktop\Inception\Assignments\Sess
ion 1\git-practice>
```

