

1.GIT STASH:

it is used to temporarily remove uncommitted changes.

The git stash command takes your uncommitted changes (both staged and un staged) saves them away for later use, and then reverts them from your working copy

Git has an area called stash where you can temporarily store a snapshot of your changes without committing them.

SOME OF GIT COMMANDS:

Git stash apply - You can re-apply the changes that you just stashed by using the git stash command.

In case of more than one stash, you can use "git stash apply" command followed by stash index id to apply the commit.

If we do not specify a stash, Git takes the most recent stash and tries to apply it.

Git stash list - It helps to check the stored stash

Git stash clear - It helps us to delete all stored stash.

```
Select C:\Windows\System32\cmd.exe
C:\Users\User\Desktop\chitti\LearningGit>git stash
No local changes to save

C:\Users\User\Desktop\chitti\LearningGit>git stash list
stash@0: WIP on 20a91a0449: 20a04dd task

C:\Users\User\Desktop\chitti\LearningGit>git stash apply 0
On branch 20a91a0449
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:   sample.py

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

C:\Users\User\Desktop\chitti\LearningGit>git add .

C:\Users\User\Desktop\chitti\LearningGit>git status
On branch 20a91a0449
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   sample.py

C:\Users\User\Desktop\chitti\LearningGit>git stash apply 0
On branch 20a91a0449
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   sample.py

C:\Users\User\Desktop\chitti\LearningGit>git commit -m "task"
[20a91a0449 be1b87b] task
1 file changed, 2 insertions(+), 1 deletion(-)

C:\Users\User\Desktop\chitti\LearningGit>git push origin 20a91a0449
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 290 bytes | 145.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/snehal-herovired/LearningGit.git
  20a04dd..be1b87b 20a91a0449 -> 20a91a0449

C:\Users\User\Desktop\chitti\LearningGit>
```

2.GIT MERGE:

it is used to combine the present branch with the other branch

Git merge joins two or more development history together.

The git merge command facilitates you to take the data created by git branch and integrates them into a single branch.

merge commands:

--git merge <commit>:

This command is used to merge the specified commit to currently active branch.

To merge a commit, first discover its commit id. we can use "git log" command to find specified commit id.

--git merge branch:

git allows merging the whole branch in another branch. Suppose you have made changes on a branch and want to merge all of that at a time.

This is can be possible by using this command.

GIT FETCH:

git fetch is primary command used to download the contents from remote repository.

git fetch is used when you only want to see all the current branches and changes in your remote repository.

git fetch commands are used to pull the updates from remote-tracking branches.

Additionally, we can get the updates that have been pushed to our local machines.

```
MINGW64/c/Users/User/Desktop/tasks
user@DESKTOP-OC26EVB MINGW64 ~/Desktop/tasks (master)
$ git init
Reinitialized existing Git repository in C:/Users/User/Desktop/tasks/.git/

user@DESKTOP-OC26EVB MINGW64 ~/Desktop/tasks (master)
$ git fetch https://github.com/sidda-chitti/chitti.git
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 3 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 215 bytes | 4.00 KiB/s, done.
From https://github.com/sidda-chitti/chitti
+ branch      HEAD      -> FETCH_HEAD
$

user@DESKTOP-OC26EVB MINGW64 ~/Desktop/tasks (master)
$
```

```
MINGW64/c/Users/User/Desktop/activity/LearningGit
user@DESKTOP-OC26EVB MINGW64 ~/Desktop/activity/LearningGit (master)
$ git init
Reinitialized existing Git repository in C:/Users/User/Desktop/activity/LearningGit/.git/

user@DESKTOP-OC26EVB MINGW64 ~/Desktop/activity/LearningGit (master)
$ git branch
* 20a91a0449
  chitti
  master

user@DESKTOP-OC26EVB MINGW64 ~/Desktop/activity/LearningGit (master)
$ git checkout chitti
Switched to branch 'chitti'

user@DESKTOP-OC26EVB MINGW64 ~/Desktop/activity/LearningGit (chitti)
$ touch file

user@DESKTOP-OC26EVB MINGW64 ~/Desktop/activity/LearningGit (chitti)
$ git add file

user@DESKTOP-OC26EVB MINGW64 ~/Desktop/activity/LearningGit (chitti)
$ git commit -m "merge command"
[chitti 42c9b54] merge command
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 file

user@DESKTOP-OC26EVB MINGW64 ~/Desktop/activity/LearningGit (chitti)
$ git log -3
commit 42c9b54e8052710a657b86713b194c2dc9581a9e (HEAD -> chitti)
Author: sidda-chitti <20a91a0449@edu.in>
Date:   Thu Feb 16 21:09:36 2023 +0530

    merge command

commit 529c29940dffbfece053f8222d5ca0978d422a6d (master)
Author: sidda-chitti <20a91a0449@edu.in>
Date:   Thu Feb 16 20:53:55 2023 +0530

    using merge command

commit 47086200d9acd0a405f8790ba81cdaa13fa1cb24 (20a91a0449)
Author: sidda-chitti <20a91a0449@edu.in>
Date:   Sun Feb 12 20:39:21 2023 +0530

    gn

user@DESKTOP-OC26EVB MINGW64 ~/Desktop/activity/LearningGit (chitti)
$ git checkout master
Switched to branch 'master'
Your branch is ahead of 'origin/master' by 3 commits.
  (use "git push" to publish your local commits)

user@DESKTOP-OC26EVB MINGW64 ~/Desktop/activity/LearningGit (master)
$ git merge chitti
Updating 529c299..42c9b54
Fast-forward
```

```
MINGW64~/c:/Users/User/Desktop/activity/LearningGit
commit 470862009acd0a405f8790ba81cdad13fa1cb24 (20a91a0449)
Author: sidda-chitti <20a91a0449@aec.edu.in>
Date: Sun Feb 12 20:39:21 2023 +0530

gn

user@DESKTOP-OC28EVB MINGW64 ~/Desktop/activity/LearningGit (chitti)
$ git checkout master
Switched to branch 'master'
Your branch is ahead of 'origin/master' by 3 commits.
(Use 'git push' to publish your local commits)

user@DESKTOP-OC28EVB MINGW64 ~/Desktop/activity/LearningGit (master)
$ git merge chitti
Updating 529c299..42c9b54
Fast-forward
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 file

user@DESKTOP-OC28EVB MINGW64 ~/Desktop/activity/LearningGit (master)
$ git log --graph
* commit 42c9b5448052710a657b8671b194c2dc9581a9e (HEAD -> master, chitti)
  Date: Thu Feb 16 21:09:36 2023 +0530

    merge command

* commit 529c29940dfbfec053f8222d5ca0978d422a6d
  Author: sidda-chitti <20a91a0449@aec.edu.in>
  Date: Thu Feb 16 20:53:55 2023 +0530

    using merge command

* commit 470862009acd0a405f8790ba81cdad13fa1cb24 (20a91a0449)
  Author: sidda-chitti <20a91a0449@aec.edu.in>
  Date: Sun Feb 12 20:39:21 2023 +0530

    gn

* commit 2e4601cb502f928584bbcf00b72151408432f22 (origin/20a91a0449)
  Author: sidda-chitti <20a91a0449@aec.edu.in>
  Date: Sun Feb 12 13:04:25 2023 +0530

    fasd
...skipping...
* commit 42c9b5448052710a657b8671b194c2dc9581a9e (HEAD -> master, chitti)
  Author: sidda-chitti <20a91a0449@aec.edu.in>
  Date: Thu Feb 16 21:09:36 2023 +0530

    merge command

* commit 529c29940dfbfec053f8222d5ca0978d422a6d
  Author: sidda-chitti <20a91a0449@aec.edu.in>
  Date: Thu Feb 16 20:53:55 2023 +0530

    using merge command
```

3. Difference between git fetch and git pull:

Git fetch is the command that tells the local repository that there are changes available in the remote repository without bringing the changes into the local repository.

Git pull on the other hand brings the copy of remote directory changes into the local repository

Repository data is updates in the . git directory

but in the case git pull, the local repository is updated directly

in case of fetch there is no possibility of merge conflicts but in case of get pull there is a possibility

if the remote and the local repositories have done changes at the same place.

```
MINGW64~/Users/User/Desktop/tasks
user@DESKTOP-OC28EVB MINGW64 ~/Desktop/tasks (master)
$ git init
Reinitialized existing Git repository in C:/Users/User/Desktop/tasks/.git/
user@DESKTOP-OC28EVB MINGW64 ~/Desktop/tasks (master)
$ git fetch https://github.com/sidda-chitti/chitti.git
From https://github.com/sidda-chitti/chitti
* branch      HEAD       -> FETCH_HEAD
user@DESKTOP-OC28EVB MINGW64 ~/Desktop/tasks (master)
$ git remote add origin https://github.com/sidda-chitti/chitti.git
user@DESKTOP-OC28EVB MINGW64 ~/Desktop/tasks (master)
$ git pull origin master
From https://github.com/sidda-chitti/chitti
* branch      master     -> FETCH_HEAD
* [new branch] master     -> origin/master
user@DESKTOP-OC28EVB MINGW64 ~/Desktop/tasks (master)
$ |
```

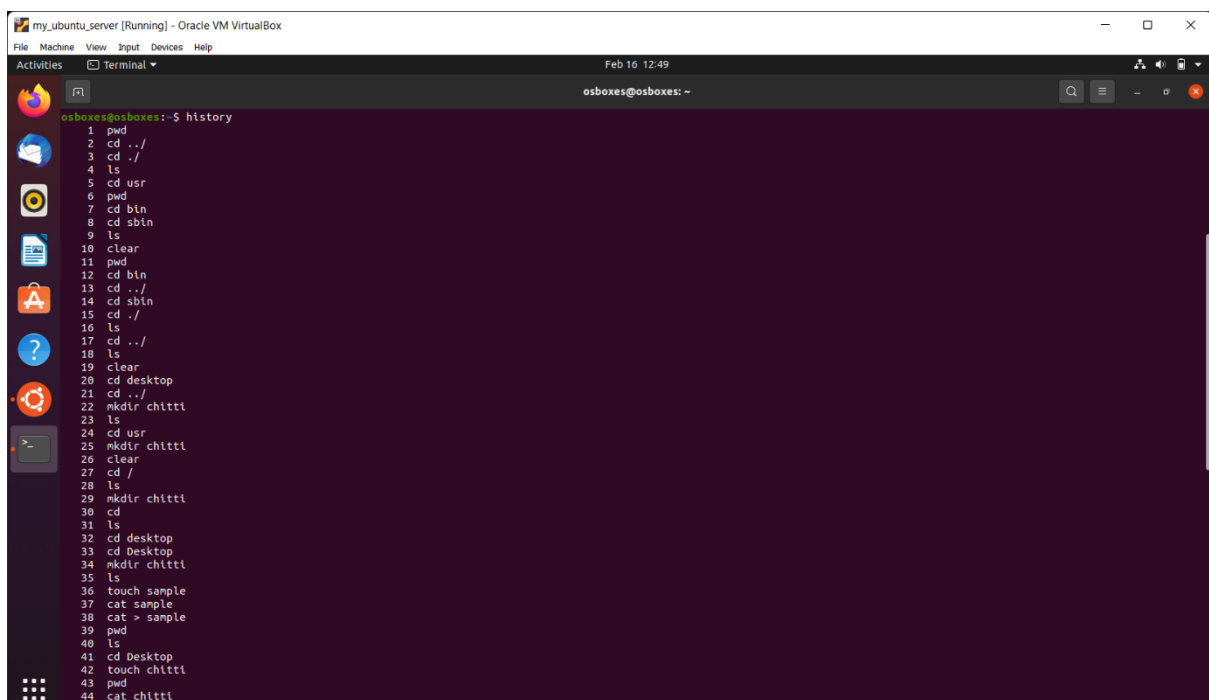
4. Linux awk command:

it is used for pattern scanning and processing

it scans file line by line and gives the required data of that particular pattern

```
my_ubuntu_server [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal Feb 16 12:45
osboxes@osboxes: ~
osboxes@osboxes:~$ ls
Desktop  Downloads  Pictures  student  Videos
Documents Music  Public  Templates
osboxes@osboxes:~$ cat >student
chitti ece
prasanna ece
madhuri cse
divya civil
navya cse
osboxes@osboxes:~$ cat student
chitti ece
prasanna ece
madhuri cse
divya civil
navya cse
osboxes@osboxes:~$ awk '/ece/ {print}' student
chitti ece
prasanna ece
madhuri cse
divya civil
navya cse
osboxes@osboxes:~$ awk '/a/ {print}' student
prasanna ece
madhuri cse
divya civil
navya cse
osboxes@osboxes:~$
```

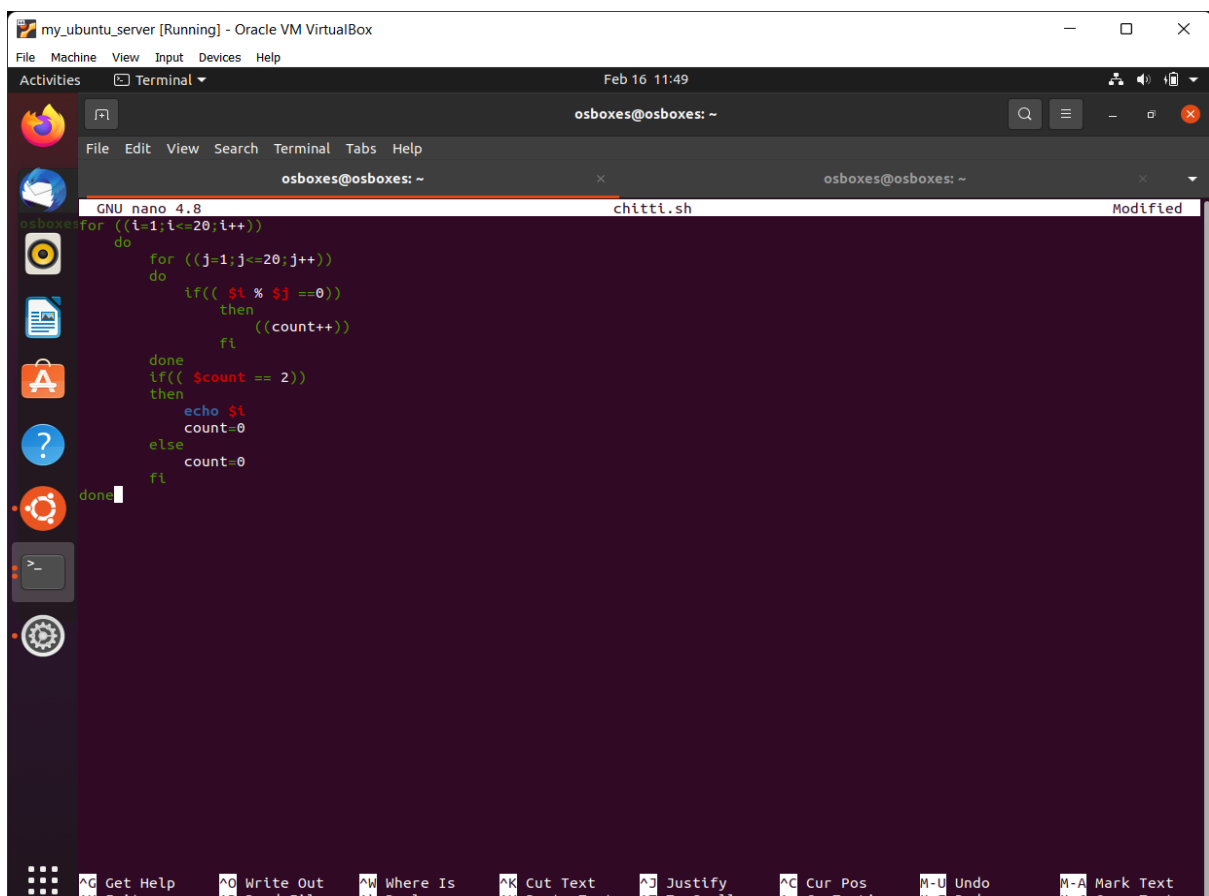
History command is used to see the previous commands which are used in Linux



The screenshot shows a terminal window titled "my_ubuntu_server [Running] - Oracle VM VirtualBox". The terminal displays the output of the `history` command, which lists 44 previous commands. The commands include `pwd`, `cd` (for various directories like `../`, `usr`, `bin`, `sbin`, `desktop`), `ls`, `clear`, `mkdir`, `touch`, `cat`, and `chttt`.

```
osboxes@osboxes:~$ history
1  pwd
2  cd ../
3  cd ../
4  ls
5  cd usr
6  pwd
7  cd bin
8  cd sbin
9  ls
10 clear
11 pwd
12 cd bin
13 cd ../
14 cd sbin
15 cd ../
16 ls
17 cd ../
18 ls
19 clear
20 cd desktop
21 cd ../
22 mkdir chttt
23 ls
24 cd usr
25 mkdir chttt
26 clear
27 cd /
28 ls
29 mkdir chttt
30 cd
31 ls
32 cd desktop
33 cd Desktop
34 mkdir chttt
35 ls
36 touch sample
37 cat sample
38 cat > sample
39 pwd
40 ls
41 cd Desktop
42 touch chttt
43 pwd
44 cat chttt
```

Bash script file code to give prime numbers range from 1 to 20.



The screenshot shows a terminal window titled "my_ubuntu_server [Running] - Oracle VM VirtualBox". The terminal displays the code of a Bash script named `chttt.sh` being edited in the `nano` editor. The script is designed to find prime numbers between 1 and 20. It uses nested `for` loops and `if` statements to check for divisibility.

```
GNU nano 4.8 chttt.sh
osboxes@osboxes:~$ cat chttt.sh
for ((i=1;i<=20;i++))
do
    for ((j=1;j<=20;j++))
    do
        if(( $i % $j ==0))
        then
            ((count++))
        fi
    done
    if(( $count == 2))
    then
        echo $i
        count=0
    else
        count=0
    fi
done
```

5.

```
root@1e6f7a929db5:/  
user@DESKTOP-OC26EVB MINGW64 ~ (master)  
$ docker login  
Authenticating with existing credentials...  
Login Succeeded  
Logging in with your password grants your terminal complete access to your account.  
For better security, log in with a limited-privilege personal access token. Learn  
more at https://docs.docker.com/go/access-tokens/  
user@DESKTOP-OC26EVB MINGW64 ~ (master)  
$ docker images  
REPOSITORY TAG IMAGE ID CREATED SIZE  
user@DESKTOP-OC26EVB MINGW64 ~ (master)  
$ docker info  
Client:  
Context: default  
Debug Mode: false  
Plugins:  
buildx: Docker Buildx (Docker Inc., v0.10.0)  
compose: Docker Compose (Docker Inc., v2.15.1)  
dev: Docker Dev Environments (Docker Inc., v0.0.5)  
extension: Manages Docker extensions (Docker Inc., v0.2.17)  
shim: View the packaged-based Software Bill of Materials (SBOM) for an image (Anchore Inc., 0.6.0)  
scan: Docker Scan (Docker Inc., v0.23.0)  
Server:  
Containers: 0  
Running: 0  
Paused: 0  
Stopped: 0  
Images: 0  
Server Version: 20.10.22  
Storage Driver: overlay2  
Backing Filesystem: extfs  
Supports d_type: true  
Native Overlay Diff: true  
userxattr: false  
Logging Driver: json-file  
Cgroup Driver: cgroupfs  
Cgroup Version: 1  
Plugins:  
volume: local  
Network: bridge host ipvlan macvlan null overlay  
Log: awslogs fluentd gcplogs gelf journald json-file local logentries splunk syslog  
Swarm: inactive  
Runtimes: io.containerd.runtime.v1.linux runc io.containerd.runc.v2  
Default Runtime: runc  
Init Binary: docker-init  
containerd version: 9b4b250366a5ddde94bb7c9d1def331423aa323  
runc version: v1.1.4-0-g5f4c4d  
init version: de40ad0  
Security Options:  
seccomp  
Profile: default  
Kernel Version: 5.10.16.3-microsoft-standard-WSL2
```

```
root@1e6f7a929db5:/  
Default Runtime: runc  
Init Binary: docker-init  
containerd version: 9b4b250366a5ddde94bb7c9d1def331423aa323  
runc version: v1.1.4-0-g5f4c4d  
init version: de40ad0  
Security Options:  
seccomp  
Profile: default  
Kernel Version: 5.10.16.3-microsoft-standard-WSL2  
Operating System: Docker Desktop  
OSType: linux  
Architecture: x86_64  
CPUs: 4  
Total Memory: 3.724GiB  
Name: docker-desktop  
ID: 0138:PFZH:C7KY:EAXT:MLAX:SDMK:KIY:WMM:RFUN:WZWN:TAQ:STKB  
Docker Root Dir: /var/lib/docker  
Debug Mode: false  
HTTP Proxy: http.docker.internal:3128  
HTTPS Proxy: http.docker.internal:3128  
No Proxy: hubproxy.docker.internal  
Registry: https://index.docker.io/v1/  
Labels:  
Experimental: false  
Insecure Registries:  
hubproxy.docker.internal:5000  
127.0.0.0/8  
Live Restore Enabled: false  
WARNING: No blkio throttle.read_bps_device support  
WARNING: No blkio throttle.write_bps_device support  
WARNING: No blkio throttle.read_iops_device support  
WARNING: No blkio throttle.write_iops_device support  
user@DESKTOP-OC26EVB MINGW64 ~ (master)  
$ docker pull ubuntu  
Using default tag: latest  
latest: Pulling from library/ubuntu  
67076032cca: Pulling fs layer  
67076032cca: Verifying Checksum  
67076032cca: Download complete  
67076032cca: Pull complete  
Digest: sha256:9a0b0dde4188b896a372804be2384015e90e3f84906b750c1a53539b585fbbe7f  
Status: Downloaded newer image for ubuntu:latest  
docker.io/library/ubuntu:latest  
user@DESKTOP-OC26EVB MINGW64 ~ (master)  
$ docker images  
REPOSITORY TAG IMAGE ID CREATED SIZE  
ubuntu latest 58db3edaf2be 3 weeks ago 77.8MB  
user@DESKTOP-OC26EVB MINGW64 ~ (master)  
$ docker run -it ubuntu  
the input device is not a TTY. If you are using mintty, try prefixing the command with 'winpty'  
user@DESKTOP-OC26EVB MINGW64 ~ (master)  
$ winpty docker run -it ubuntu  
root@1e6f7a929db5:/#
```

