ASSIGNMENT:

Q1. Describe the usage of the git stash command by using an example and also state the process by giving the screenshot of all the commands written in git bash.

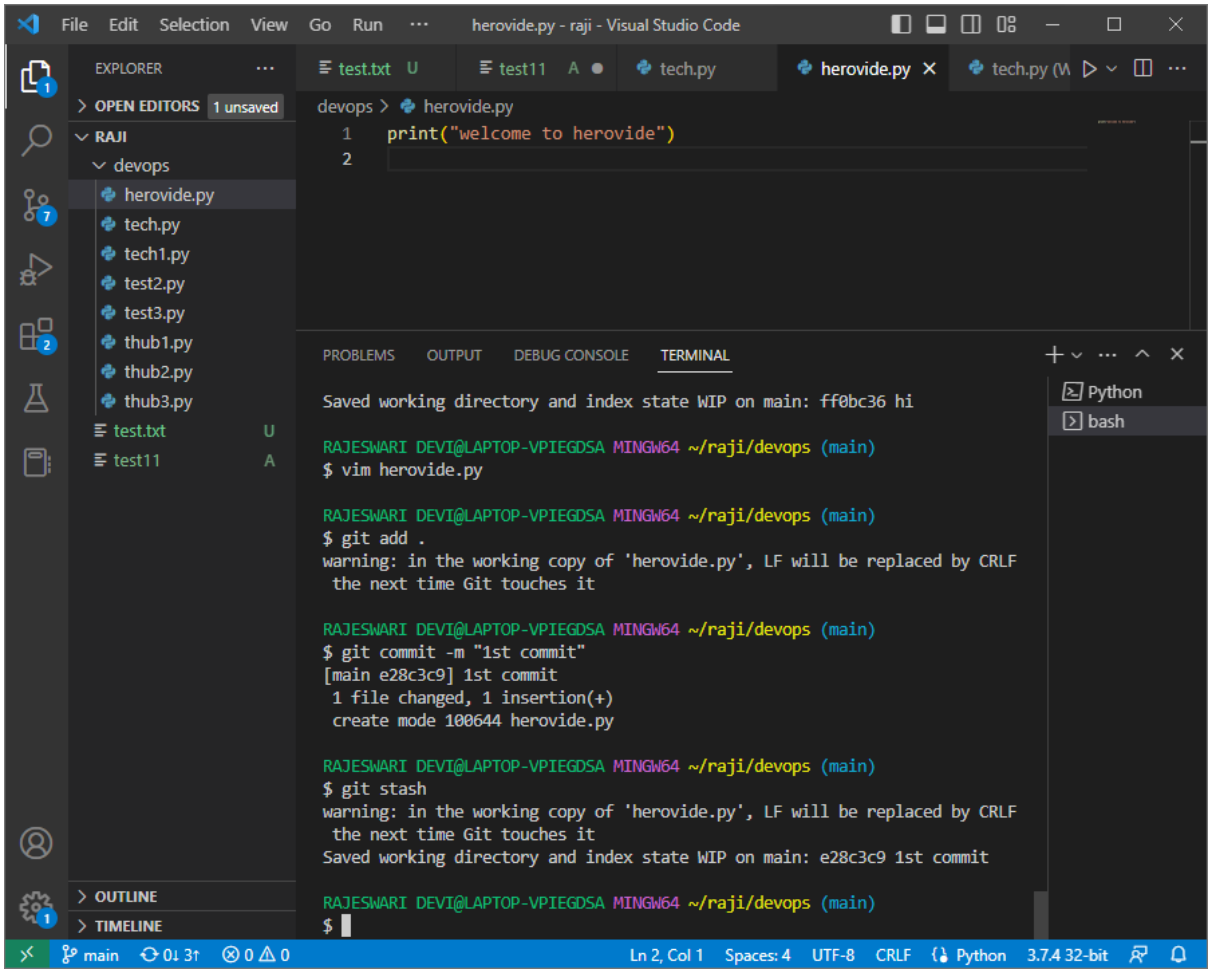
GIT STASH : Git stash temporarily shelves (or stashes) changes we made to our working copy so we can work on something else, and then come back and re-apply them later on.

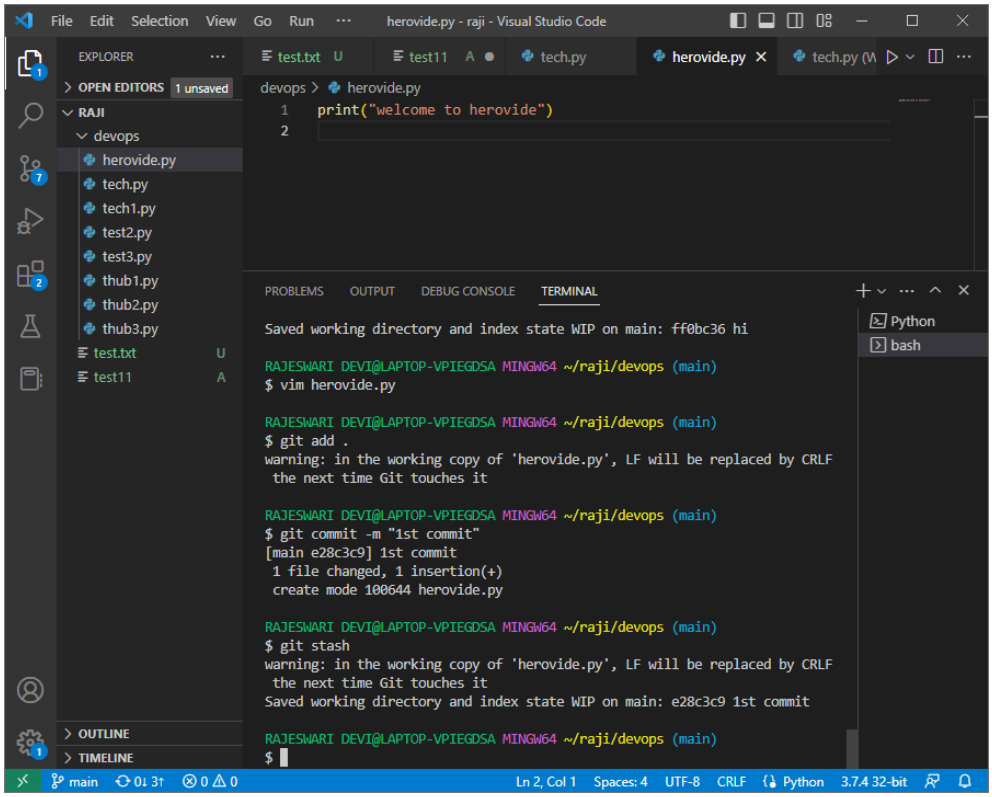
For example:

If we are working on the current project or file but without doing commits of our current project we want to switch the branch. For that stash is allowed us to switch the branches without committing the current branch.

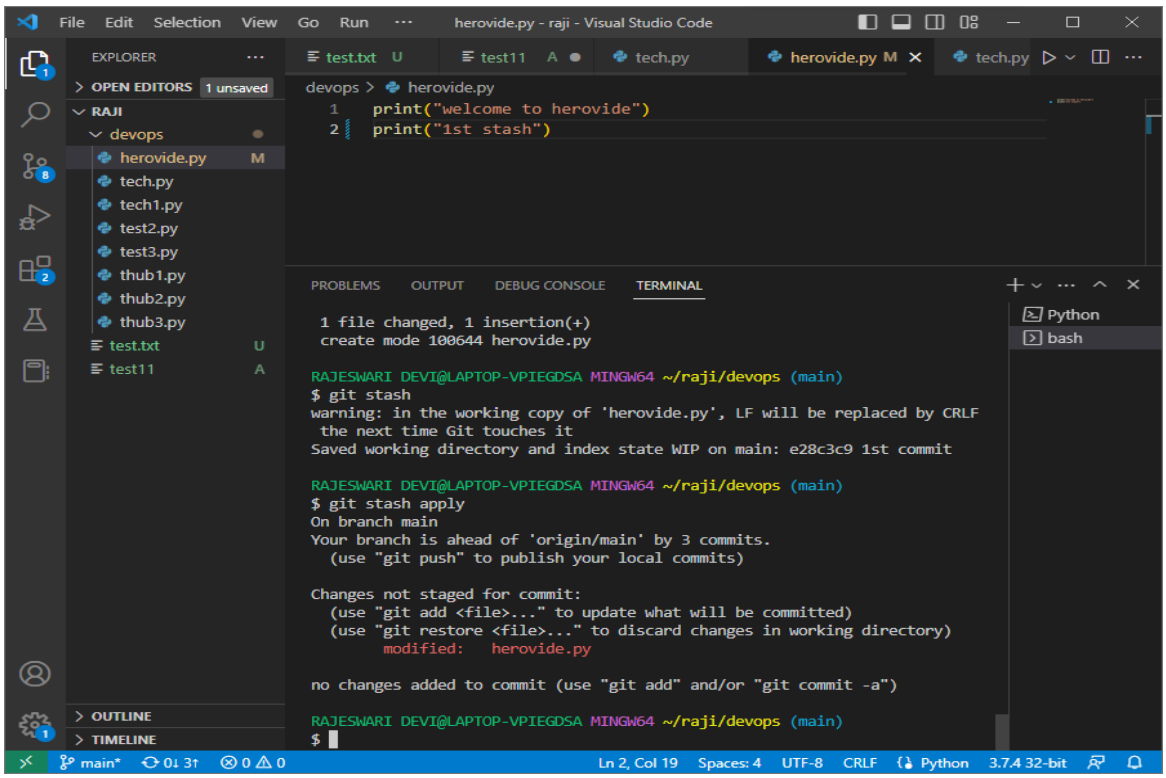
Steps:

Step1: 1st we create a file and add some content to it. I have add it and committed.





git stash apply – It will show the changes which are stashed.



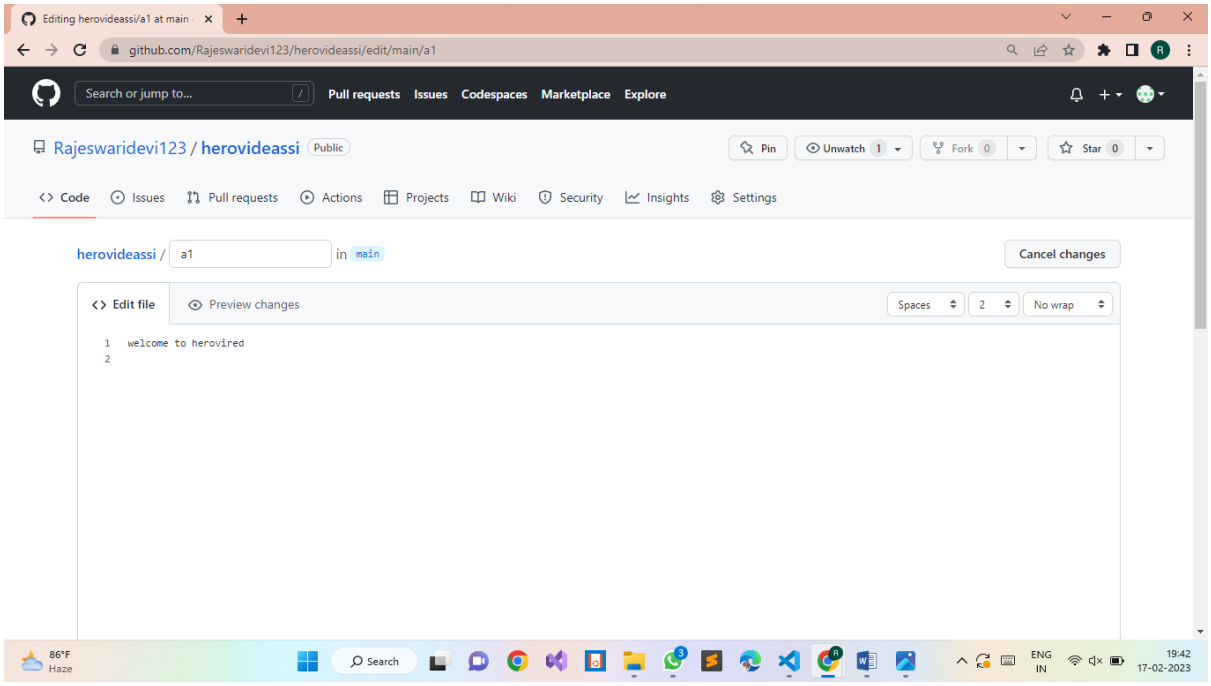
Q2. By using a sample example of your choice, use the git fetch command and also use the git merge command and describe the whole process through a screenshot with all the commands and their output in git bash.

Git fetch

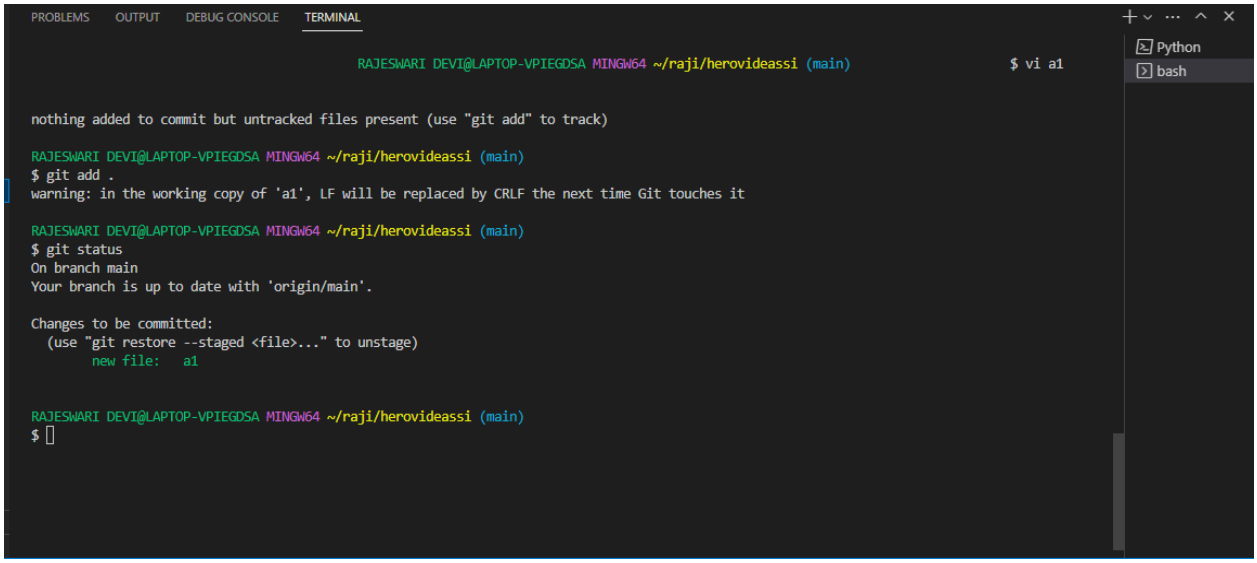
Git fetch is a command used to downloads commits, objects and refs from another repository. It fetches branches and tags from one or more repositories. It only updates the remote tracking branches.

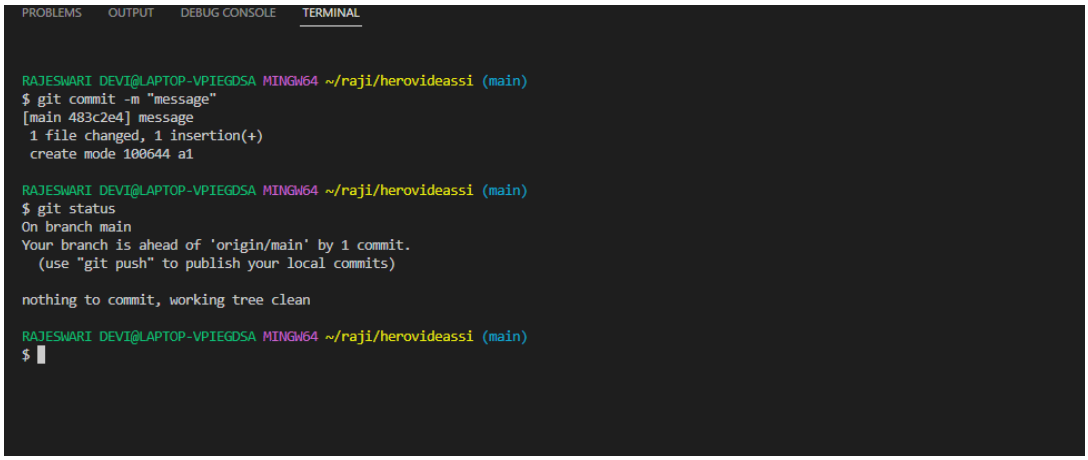
Steps:

Step1: We have to create a repository and check the status of repository by using the git stash.



Step2: While remote repository has two commits but local repository has only one commit. I have used git log command to see the previous commits.





Step 3)After using the git fetch command some commits are done in remote repository.
Step 4) Then merge the changes into local repository by using the command git merge origin/main.
Step 5) To see the commits in local repository use the git log command.

git fetch is the command that tells your local git to retrieve the latest meta-data info from the original (yet doesn't do any file transferring. It's more like just checking to see if there are any changes available).

```
RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$ git log
Date:   Fri Feb 17 19:38:21 2023 +0530

    message

commit 1546d66e614d7dfe300ea4c5346d9c6e12dd5648
Author: Rajeswaridevi123 <84455680+Rajeswaridevi123@users.noreply.github.com>
Date:   Thu Feb 16 20:45:01 2023 +0530

    Update hero1

commit 159dcc6952670ddf34227051fcb4d76b6cb8f2ab
Author: raji <20A91A0590@aec.edu.in>
Date:   Thu Feb 16 20:43:22 2023 +0530

    herocommit

commit 15aa5e78fe1766d2568792aff7df7de0ff03be87
Author: raji <20A91A0590@aec.edu.in>
Date:   Thu Feb 16 19:23:31 2023 +0530

    initial commit
```

The "git merge" command. The git merge command is used to merge the branches. The syntax for the git merge command is as: $ git merge <query>

```
RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$ git merge origin/main
Already up to date.
```

Q3. State the difference between git fetch and git pull by doing a practical example in your git bash and attach a screenshot of all the processes

GIT FETCH:

The git fetch command is used to download commits, files and references from a remote repository into the local repository. It is used to see what other members of the team have been working on.

```
RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$ git fetch
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 683 bytes | 31.00 KiB/s, done.
From https://github.com/Rajeswaridevi123/herovideassi
   159dcc6..1546d66  main       -> origin/main

RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$
```

```
RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$ git log
Date:   Fri Feb 17 19:38:21 2023 +0530

    message

commit 1546d66e614d7dfe300ea4c5346d9c6e12dd5648
Author: Rajeswaridevi123 <84455680+Rajeswaridevi123@users.noreply.github.com>
Date:   Thu Feb 16 20:45:01 2023 +0530

    Update hero1

commit 159dcc6952670ddf34227051fcb4d76b6cb8f2ab
Author: raji <20A91A0590@aec.edu.in>
Date:   Thu Feb 16 20:43:22 2023 +0530

    herocommit

commit 15aa5e78fe1766d2568792aff7df7de0ff03be87
Author: raji <20A91A0590@aec.edu.in>
Date:   Thu Feb 16 19:23:31 2023 +0530

    initial commit
```

<u>Git Push:</u> The git push command is used to upload local repository content to a remote repository. Pushing is how you **transfer commits from your local repository to a remote repo**. It's the counterpart to git fetch , but whereas fetching imports commits to local branches, pushing exports commits to remote branches

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$ git push
Writing objects: 100% (3/3), 311 bytes | 77.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/Rajeswaridevi123/herovideassi
   1546d66..483c2e4  main -> main

RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$ git log
commit 483c2e45e9f23bcc65101253b0c7f57af9a027a7 (HEAD -> main, origin/main)
Author: raji <20A91A0590@aec.edu.in>
Date:   Fri Feb 17 19:38:21 2023 +0530

    message

commit 1546d66e614d7dfe300ea4c5346d9c6e12dd5648
Author: Rajeswaridevi123 <84455680+Rajeswaridevi123@users.noreply.github.com>
Date:   Thu Feb 16 20:45:01 2023 +0530

    Update hero1

commit 159dcc6952670ddf34227051fcb4d76b6cb8f2ab
Author: raji <20A91A0590@aec.edu.in>
Date:   Thu Feb 16 20:43:22 2023 +0530
```

Git Pull: The git pull command is used to fetch and download content from a remote repository and immediately update the local repository to match that content. Merging remote upstream changes into your local repository is a common task in Git-based collaboration work flows.

```
RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$ git pull origin main
From https://github.com/Rajeswaridevi123/herovideassi
 * branch            main       -> FETCH_HEAD
Already up to date.

RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$ git log
commit 483c2e45e9f23bcc65101253b0c7f57af9a027a7 (HEAD -> main, origin/main)
Author: raji <20A91A0590@aec.edu.in>
Date:   Fri Feb 17 19:38:21 2023 +0530

    message

commit 1546d66e614d7dfe300ea4c5346d9c6e12dd5648
Author: Rajeswaridevi123 <84455680+Rajeswaridevi123@users.noreply.github.com>
Date:   Thu Feb 16 20:45:01 2023 +0530

    Update hero1

commit 159dcc6952670ddf34227051fcb4d76b6cb8f2ab
Author: raji <20A91A0590@aec.edu.in>
Date:   Thu Feb 16 20:43:22 2023 +0530

    herocommit
```

Q4. Try to find out about the awk command and use it while reading a file created by yourself. Also, make a bash script file and try to find out the prime number from the range 1 to 20.
The whole process should be carried out and by using the history command, give the screenshot of all the processes being carried out.

Awk is a scripting language used for manipulating data and generating reports. The awk command programming language requires no compiling and allows the user to use variables, numeric functions, string functions, and logical operators. . It performs various actions on a file like searching a specified text and more.

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$ vi example

RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$ cat example
subjects    marks
English      99
Hindi        89
Telugu       89
Science      75
Social       87
```

To print the file we can use below command.

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$ awk '{print}' example
subjects    marks
English      99
Hindi        89
Telugu       89
Science      75
Social       87

RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$
```

To get the record having the 99 marks the below command is used.

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

Hindi        89
Telugu       89
Science      75
Social       87

RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$ awk '/99/ {print}' example
English      99

RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$
```

The below command prints the column 1 and column 2

```
RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$ awk '{print $1,$2}' example
subjects marks
English 99
Hindi 89
Telugu 89
Science 75
Social 87

RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
```

NF command counts the number of fields in an input Record, Here NF is considered as the last field

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$ awk '{print $1,$NF}' example
subjects marks
English 99
Hindi 89
Telugu 89
Science 75
Social 87

RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
```

Steps to follow bash scripting:
Step1) create the file with extension .sh.
Step 2)open the shell and write the script.
Step 3)save the code and run the code .
To run the run a code
Syntax:

bash filename.sh

```
for((i=2;i<=20;))
do
        for((j=i-1;j>=2;))
        do
                if [ `expr $i % $j` -ne 0 ] ; then
                        prime=1
                else
                        prime=0
                        break
                fi
                j=`expr $j - 1`
        done
        if [ $prime -eq 1 ] ; then
                echo $i
        fi
        i=`expr $i + 1`
done
~
~
~
~
~
~
primenum.sh[+] [unix] (20:08 17/02/2023)
-- INSERT --
```

```
RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$ vi primenum.sh

RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$ bash primenum.sh
primenum.sh: line 13: [: -eq: unary operator expected
3
5
7
11
13
17
19

RAJESWARI DEVI@LAPTOP-VPIEGDSA MINGW64 ~/raji/herovideassi (main)
$
```

Q5. Set up a container and run a Ubuntu operating system. For this purpose, you can make use of the docker hub and run the container in interactive mode.
All the processes pertaining to this should be provided in a screenshot for grading.

Steps for setting up a container and run a Ubuntu os

Step 1) download the image of Ubuntu

Syntax :

docker pull ubuntu

Step 2) to bring the Ubuntu image

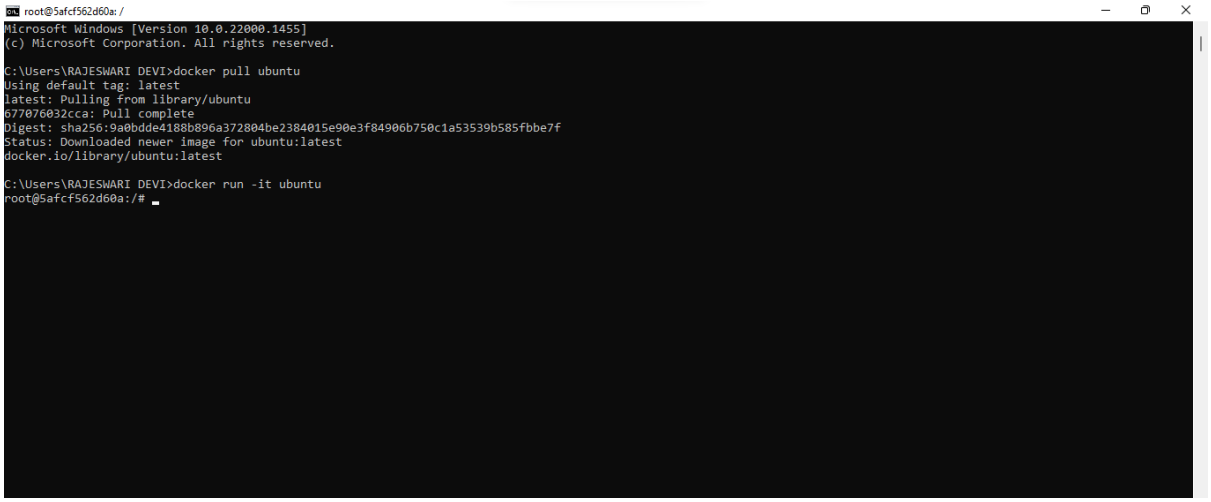
Syntax:

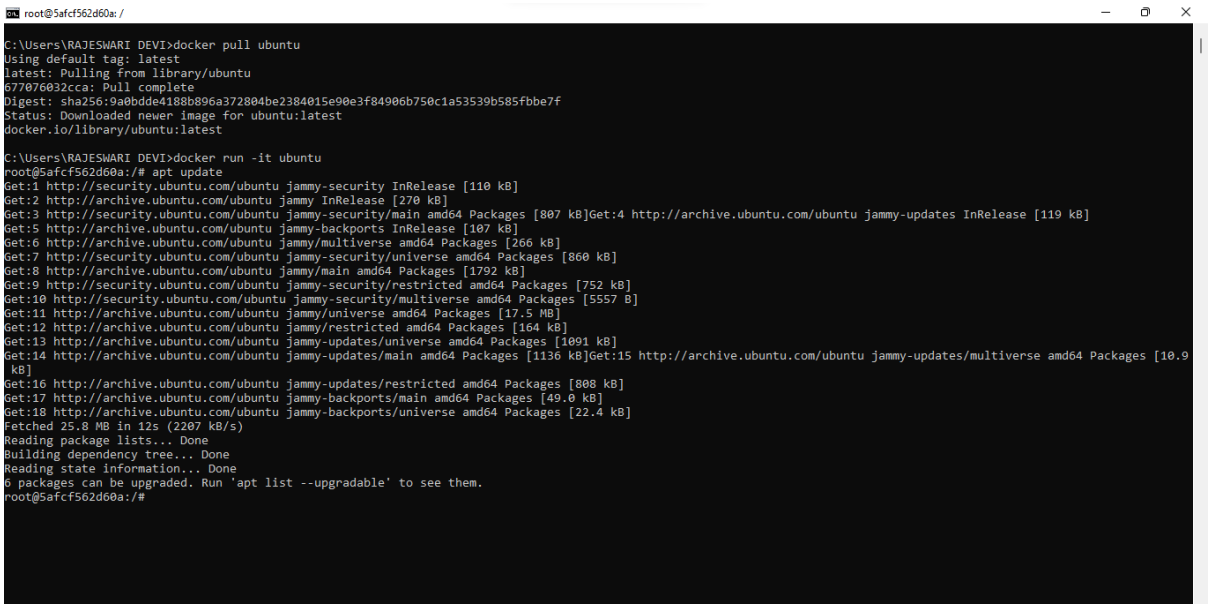
docker run -it ubuntu

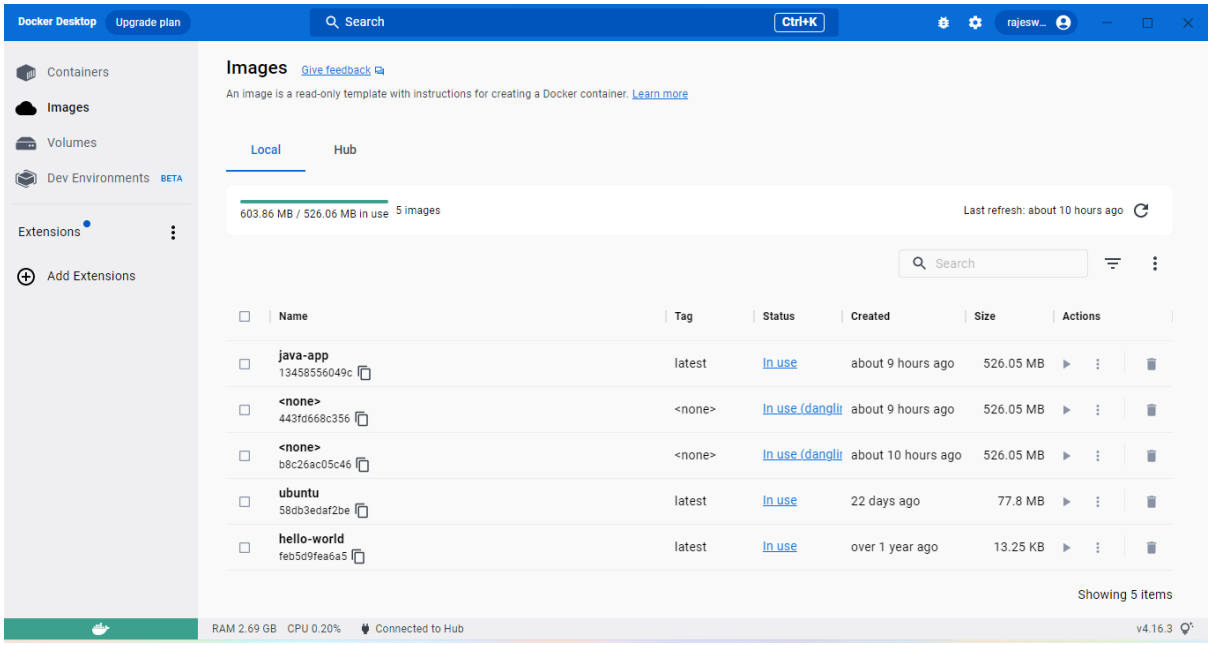
Step 3)To get an idea about the available update.

Syntax:

apt update.


root@5afcf562d60a: /
Microsoft Windows [Version 10.0.22000.1455]
(c) Microsoft Corporation. All rights reserved.
C:\Users\RAJESWARI DEVI>docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
677076032cca: Pull complete
Digest: sha256:9a0bdde4188b896a372804be2384015e90e3f84906b750c1a53539b585fbbe7f
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
C:\Users\RAJESWARI DEVI>docker run -it ubuntu
root@5afcf562d60a:/#


root@5afcf562d60a: /
C:\Users\RAJESWARI DEVI>docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
677076032cca: Pull complete
Digest: sha256:9a0bdde4188b896a372804be2384015e90e3f84906b750c1a53539b585fbbe7f
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
C:\Users\RAJESWARI DEVI>docker run -it ubuntu
root@5afcf562d60a:/# apt update
Get:1 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy InRelease [270 kB]
Get:3 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [807 kB]Get:4 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy-backports InRelease [107 kB]
Get:6 http://archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [266 kB]
Get:7 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [860 kB]
Get:8 http://archive.ubuntu.com/ubuntu jammy/main amd64 Packages [1792 kB]
Get:9 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [752 kB]
Get:10 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [5557 B]
Get:11 http://archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [17.5 MB]
Get:12 http://archive.ubuntu.com/ubuntu jammy/restricted amd64 Packages [164 kB]
Get:13 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1091 kB]
Get:14 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1136 kB]Get:15 http://archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [10.9 kB]
Get:16 http://archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [808 kB]
Get:17 http://archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [49.0 kB]
Get:18 http://archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [22.4 kB]
Fetched 25.8 MB in 12s (2207 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
6 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@5afcf562d60a:/#


Docker Desktop
Upgrade plan
Search
Ctrl+K
rajesw...
Containers
Images
Volumes
Dev Environments
BETA
Extensions
Add Extensions
Images
Give feedback
An image is a read-only template with instructions for creating a Docker container. Learn more
Local
Hub
603.86 MB / 526.06 MB in use
5 images
Last refresh: about 10 hours ago
Search
Name
Tag
Status
Created
Size
Actions
java-app
13458556049c
latest
In use
about 9 hours ago
526.05 MB
<none>
443fd668c356
<none>
In use (dangli
about 9 hours ago
526.05 MB
<none>
b8c26ac05c46
<none>
In use (dangli
about 10 hours ago
526.05 MB
ubuntu
58db3edaf2be
latest
In use
22 days ago
77.8 MB
hello-world
feb5d9fea6a5
latest
In use
over 1 year ago
13.25 KB
Showing 5 items
RAM 2.69 GB
CPU 0.20%
Connected to Hub
v4.16.3