DevOps Assignment-1

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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:

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

When you run git stash, Git takes all of the changes in your working directory that have not been committed and saves them in a new stash. This stash is stored in a separate location within the Git repository, and can be retrieved later if needed.

The git stash command can be used in a number of different ways, depending on your specific needs. Some common usage scenarios include:

- Stashing changes temporarily: You can run git stash to save any uncommitted changes that you are working on, so that you can switch to a different branch or work on a different feature without losing your progress.
- Retrieving stashed changes: Once you have stashed your changes, you can retrieve them later using the git stash apply or git stash pop command.
- Listing stashes: You can view a list of all the stashes that you have saved using the git stash list command.
- Applying stashes selectively: If you have multiple stashes saved, you can apply a specific stash using the git stash apply stash@{n} command, where n is the index of the stash you want to apply.
- Stashing only specific changes: You can also use the git stash command with specific arguments to stash only specific changes, such as untracked files or ignored files.

Different git commands regarding stashing:

- > git stash: Stash changes in the working directory that have not yet been committed.
- ight stash list: List all stashes that have been saved.
- > git stash show: Show the changes in the most recent stash.
- ight stash show stash@{n}: Show the changes in a specific stash.
- > git stash apply: Apply the most recent stash.
- > git stash apply stash@{n}: Apply a specific stash.
- > git stash pop: Apply the most recent stash and remove it from the stash list.
- > git stash pop stash@{n}: Apply a specific stash and remove it from the stash list.
- ight stash drop: Remove the most recent stash from the stash list.
- > git stash branch
 stash-name>: Create a new branch and apply the most recent stash to it..
- ight stash clear: Remove all stashes from the stash list.

Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)

Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)

\$ git stash clear

\$ git stash list

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:

The git fetch command is used to retrieve the latest changes from a remote Git repository, without automatically merging them into your local branch. This command is often used to update your local repository with changes that have been made by other contributors to the same project, allowing you to keep your working copy up-to-date with the latest changes.

When you run git fetch, Git fetches the latest changes from the remote repository and stores them in your local repository, but does not automatically merge them into your current branch. This means that you can review the changes before deciding to merge them into your local branch.

Here are some common ways to use git fetch:

- Update the local repository: Use git fetch to download the latest changes from the remote repository and update your local repository with them.
- View changes: After running git fetch, you can use git log or other commands to view the changes that have been made in the remote repository since the last time you fetched changes.
- Merge changes: If you want to merge the changes you fetched from the remote repository into your local branch, you can run git merge after running git fetch.
- Check out remote branches: After running git fetch, you can check out a remote branch using git checkout origin/

 This allows you to work on the remote branch in your local repository.

```
## fille U X

git > ## fille

1

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL** CODEWHISPERER REFERENCE LOG

$ cd OneDrive

Venkata krishnareddy@Krishna MINGWG4 ~/OneDrive (main)
$ cd Desktop

Vankata krishnareddy@Krishna MINGWG4 ~/OneDrive/Desktop (main)
$ cd git

Venkata krishnareddy@Krishna MINGWG4 ~/OneDrive/Desktop/git (master)
$ git remote -v

Venkata krishnareddy@Krishna MINGWG4 ~/OneDrive/Desktop/git (master)
$ git remote add remotel git@github.com:PadalaVenkataKrishnareddy/Repo_for_fetch_AST-1.git

Vankata krishnareddy@Krishna MINGWG4 ~/OneDrive/Desktop/git (master)
$ git remote -v

remotel git@github.com:PadalaVenkataKrishnareddy/Repo_for_fetch_AST-1.git (fetch)

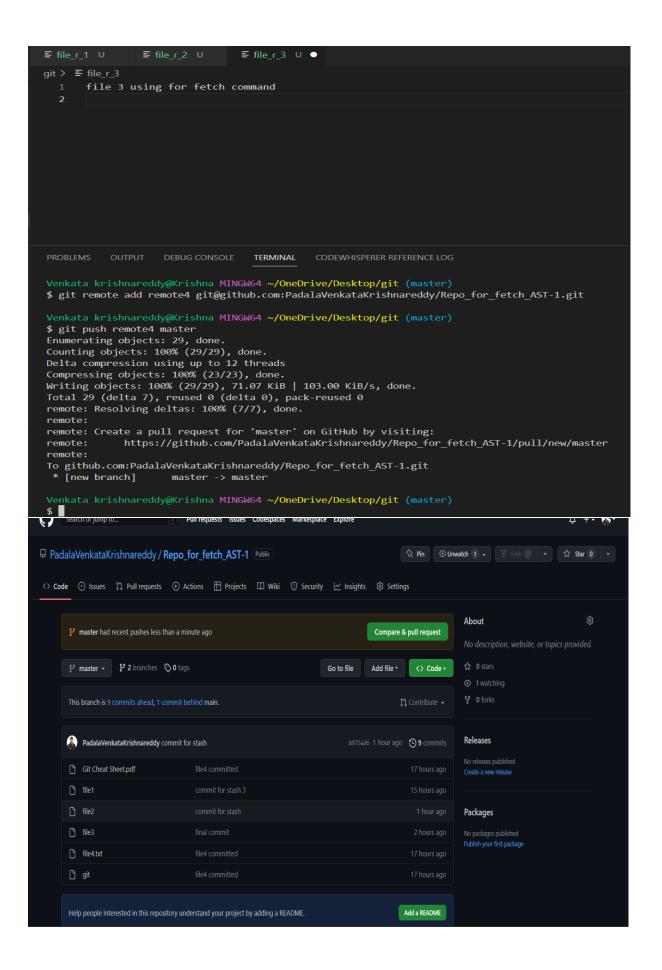
remotel git@github.com:PadalaVenkataKrishnareddy/Repo_for_fetch_AST-1.git (push)

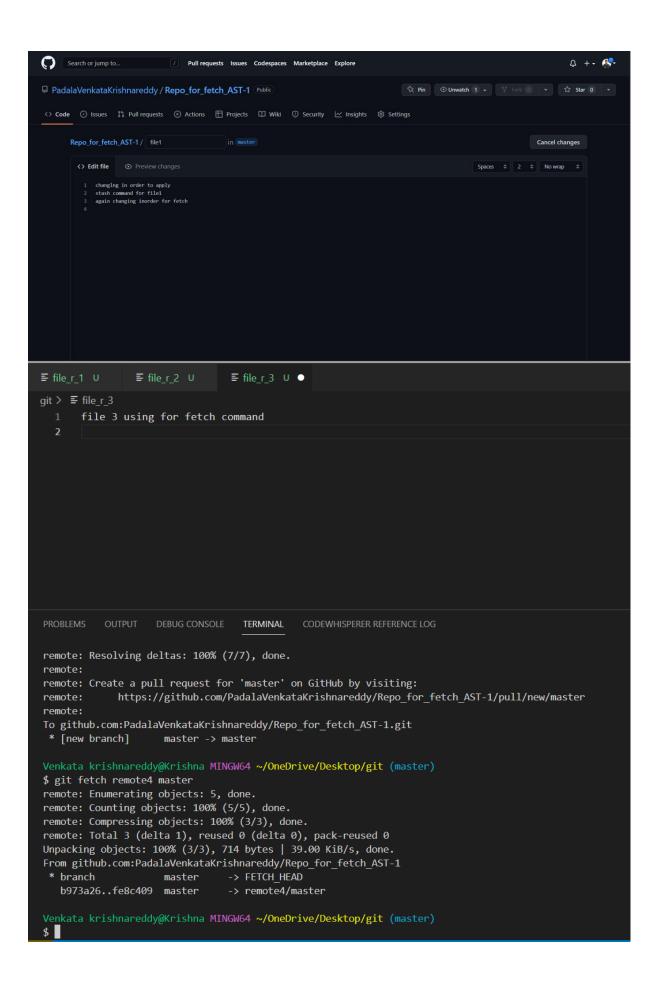
Venkata krishnareddy@Krishna MINGWG4 ~/OneDrive/Desktop/git (master)
$ fit remote -v

remotel git@github.com:PadalaVenkataKrishnareddy/Repo_for_fetch_AST-1.git (push)

Venkata krishnareddy@Krishna MINGWG4 ~/OneDrive/Desktop/git (master)
$ fit remote -v

remotel git@github.com:PadalaVenkataKrishnareddy/Repo_for_fetch_AST-1.git (push)
```





```
≣ file_r_1 ∪
                                 ≡ file_r_3 U ●
                                                  ≣ file1
                                                             X
                ≣ file_r_2 ∪
changing in order to apply
       stash command for file1
       again changing inorder for fetch
PROBLEMS
           OUTPUT
                    DEBUG CONSOLE
                                   TERMINAL
                                              CODEWHISPERER REFERENCE LOG
$ git fetch remote4 master
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 714 bytes | 39.00 KiB/s, done.
From github.com:PadalaVenkataKrishnareddy/Repo for fetch AST-1
 * branch
                                -> FETCH HEAD
                     master
   b973a26..fe8c409 master
                                -> remote4/master
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$ git pull remote4 master
From github.com:PadalaVenkataKrishnareddy/Repo for fetch AST-1
 * branch
                                 -> FETCH HEAD
                     master
Updating b973a26..fe8c409
Fast-forward
 file1 | 1 +
 1 file changed, 1 insertion(+)
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
```

Git Merge:

The git merge command is used to integrate changes from one branch into another branch. This is typically used when you want to merge the changes that you have made on a feature branch into the main branch of the Git repository.

Here are the steps to follow to use the git merge command:

- Switch to the branch that you want to merge changes into: First, you need to switch to the
 branch that you want to merge changes into. For example, if you want to merge changes
 from the feature-branch into the main branch, you should switch to the main branch by
 running git checkout main.
- Run git merge: Once you are on the target branch, run the git merge command and specify
 the name of the branch that you want to merge changes from. For example, if you want to
 merge changes from the feature-branch into the main branch, you should run git merge
 feature-branch. Git will then attempt to merge the changes from the feature-branch into the
 main branch.
- Resolve any conflicts: If there are any conflicts between the changes on the two branches,
 Git will display a message indicating which files have conflicts. You will need to manually
 resolve these conflicts by editing the affected files, and then running git add to stage the
 changes. Once you have resolved all the conflicts and staged the changes, run git commit to
 create a new commit that includes the merged changes.
- Push the changes: Finally, you need to push the changes to the remote repository by running git push. This will update the remote repository with the merge

```
git > ≣ file1
      changing in order to apply
  2 stash command for file1
                                   TERMINAL
                                              CODEWHISPERER REFERENCE LOG
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
fatal: a branch named 'b1' already exists
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$ bit switch b1
bash: bit: command not found
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$ git switch b1
Switched to branch 'b1'
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (b1)
$ touch fil1_b1
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (b1)
$ cat > file b1
file using for merging
[6]+ Stopped
                              cat > file b1
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (b1)
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (b1)
$ touch fill b2
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (b1)
$ cat > file b2
another file using for merging
```

```
≣ file_r_1 U
                ≣ file r 2 U
                                ≣ file r 3 U ●
                                                 ≣ file1
changing in order to apply
       stash command for file1
PROBLEMS
           OUTPUT
                   DEBUG CONSOLE
                                   TERMINAL
                                             CODEWHISPERER REFERENCE LOG
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (b1)
$ touch fill b2
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (b1)
$ cat > file b2
another file using for merging
Switched to branch 'master'
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$ git merge b1
Already up to date.
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$ git log --oneline
fe8c409 (HEAD -> master, remote4/master, b1) Update file1
b973a26 commit for stash
4449921 after apply
5643e34 commit after applying stash
5ba03ea final commit
525feb4 commit for stash 3
3655b29 commit for stash 3
7aafed0 commit for stash 1
05e36db file4 committed
c7970fc first commit
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$
```

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.

The main difference between git fetch and git pull is that git fetch only retrieves the latest changes from a remote repository, while git pull both retrieves the latest changes and immediately merges them into the local branch.

Here are some more details about the differences between git fetch and git pull:

- git fetch retrieves the latest changes from a remote repository and stores them in the
 local repository, but does not merge them into the current branch. This means that you
 can review the changes before deciding to merge them into your local branch.
- git pull retrieves the latest changes from a remote repository, stores them in the local repository, and immediately merges them into the current branch. This means that the changes from the remote repository will be automatically merged into your local branch.
- git fetch can be useful when you want to update your local repository with changes from a remote repository, but you want to review the changes before merging them into your local branch.
- git pull can be useful when you want to update your local repository with changes from a remote repository and immediately merge them into your local branch. This is often used when you want to quickly incorporate changes made by other contributors to the same project.

```
≣ file_r_1 ∪
                  ≣ file r 2 ∪
                                    ≡ file_r_3 U •
git > ≡ file_r_3
       file 3 using for fetch command
                                      TERMINAL
remote: Resolving deltas: 100% (7/7), done.
remote:
remote: Create a pull request for 'master' on GitHub by visiting:
              https://github.com/PadalaVenkataKrishnareddy/Repo_for_fetch_AST-1/pull/new/master
remote:
To github.com:PadalaVenkataKrishnareddy/Repo_for_fetch_AST-1.git
   [new branch]
                       master -> master
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$ git fetch remote4 master
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 1), reused 0 (delta 0), pack-reused 0 Unpacking objects: 100% (3/3), 714 bytes | 39.00 KiB/s, done.
From github.com:PadalaVenkataKrishnareddy/Repo_for_fetch_AST-1
   branch master -> FETCH_HEAD
b973a26..fe8c409 master -> remote4/master
 * branch
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
```

```
≣ file_r_1 U
                 ≣ file_r_2 ∪
                                 ≣ file_r_3 U ●
git > \ \ file_r_3
       file 3 using for fetch command
  2
                                   TERMINAL
PROBLEMS
           OUTPUT
                    DEBUG CONSOLE
                                              CODEWHISPERER REFERENCE LOG
$ git fetch remote4 master
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 714 bytes | 39.00 KiB/s, done.
From github.com:PadalaVenkataKrishnareddy/Repo for fetch AST-1
 * branch
                                 -> FETCH HEAD
                      master
   b973a26..fe8c409 master
                                 -> remote4/master
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$ git pull remote4 master
From github.com:PadalaVenkataKrishnareddy/Repo_for_fetch_AST-1
 * branch
                     master
                                 -> FETCH HEAD
Updating b973a26..fe8c409
Fast-forward
 file1 | 1 +
 1 file changed, 1 insertion(+)
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
```

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 command:

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.

Awk is a utility that enables a programmer to write tiny but effective programs in the form of statements that define text patterns that are to be searched for in each line of a document and the action that is to be taken when a match is found within a line. Awk is mostly used for pattern scanning and processing. It searches one or more files to see if they contain lines that matches with the specified patterns and then perform the associated actions.

Awk is abbreviated from the names of the developers – Aho, Weinberger, and Kernighan.

- AWK Operations:
 - Scans a file line by line
 - Splits each input line into fields
 - o Compares input line/fields to pattern
 - Performs action(s) on matched lines
- Useful For:
 - o Transform data files
 - Produce formatted reports
- Programming Constructs:
 - Format output lines
 - o Arithmetic and string operations
 - Conditionals and loops

Syntax:

awk options 'selection _criteria {action }' input-file > output-file

```
PROBLEMS
                    DEBUG CONSOLE
                                    TERMINAL
                                               CODEWHISPERER REFERENCE LOG
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$ touch awk.txt
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
 cat >awk.txt
Hi! happy to use awk command
[1]+ Stopped
                               cat > awk.txt
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$ awk '{print}' awk.txt
Hi! happy to use awk command
Venkata krishnareddy@Krishna MINGW64 <mark>~/OneDrive/Desktop/git (master)</mark>
 awk '{"print hi"}'
                               awk '{"print hi"}'
[2]+ Stopped
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
```

```
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$ cat >> awk.txt
Excited for completion of assignment
[3]+ Stopped
                              cat >> awk.txt
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$ cat awk.txt
Hi! happy to use awk command
Excited for completion of assignment
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$ awk '/v/ {print}' awk.txt
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$ awk '/h/ {print}' awk.txt
Hi! happy to use awk command
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$ |
```

TERMINAL

Bash Script for finding prime numbers from 1 to 20:

```
$ prime.sh U •
git > $ prime.sh > ...
       #!/bin/bash
echo "1 is not a prime number.";
       for((k=2;k<=20;k++))
        c=0;
for((i=2; i<=$k/2; i++))
          r=$(( k%i ))
if [ $r -eq 0 ]
          let c=1;
                                       TERMINAL CODEWHISPERER REFERENCE LOG
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$ sh prime.sh
1 is not a prime number.2 is a prime number.
3 is a prime number.
4 is not a prime number.
5 is a prime number.
  is not a prime number.
   is a prime number
8 is not a prime number
```

```
$ prime.sh U •
git > $ prime.sh > ...
       echo "1 is not a prime number.";
  2
       for((k=2;k<=20;k++))
         c=0;
         for((i=2; i<=$k/2; i++))
         do
           r=$(( k%i ))
           if [ $r -eq 0 ]
           then
 11
             let c=1;
 12
             break;
 13
           fi
 14
         done
 15
         if [ $c -eq 0 ];
PROBLEMS
           OUTPUT
                    DEBUG CONSOLE
                                   TERMINAL
                                              CODEWHISPERER REFERENCE LOG
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
$ sh prime.sh
1 is not a prime number.
2 is a prime number.
3 is a prime number.
4 is not a prime number.
5 is a prime number.
6 is not a prime number.
7 is a prime number.
8 is not a prime number.
9 is not a prime number.
10 is not a prime number.
11 is a prime number.
12 is not a prime number.
13 is a prime number.
14 is not a prime number.
15 is not a prime number.
16 is not a prime number.
```

```
$ prime.sh U •
git > $ prime.sh > ...
       #!/bin/bash
       echo "1 is not a prime number.";
       for((k=2;k<=20;k++))
       do
         c=0;
         for((i=2; i<=$k/2; i++))
         do
           r=$(( k%i ))
           if [ $r -eq 0 ]
           then
 11
             let c=1;
 12
             break;
 13
           fi
 14
         done
 15
         if [ $c -eq 0 ];
PROBLEMS
           OUTPUT DEBUG CONSOLE
                                    TERMINAL
                                              CODEWHISPERER REFERENCE LOG
5 is a prime number.
6 is not a prime number.
7 is a prime number.
8 is not a prime number.
9 is not a prime number.
10 is not a prime number.
11 is a prime number.
12 is not a prime number.
13 is a prime number.
14 is not a prime number.
15 is not a prime number.
16 is not a prime number.
17 is a prime number.
18 is not a prime number.
19 is a prime number.
20 is not a prime number.
Venkata krishnareddy@Krishna MINGW64 ~/OneDrive/Desktop/git (master)
```

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.

- Install Docker on your system if you haven't already. You can download Docker for your specific operating system from the official Docker website.
- Open a terminal or command prompt and run the following command to download the Ubuntu image from Docker Hub:

Execute the following command:

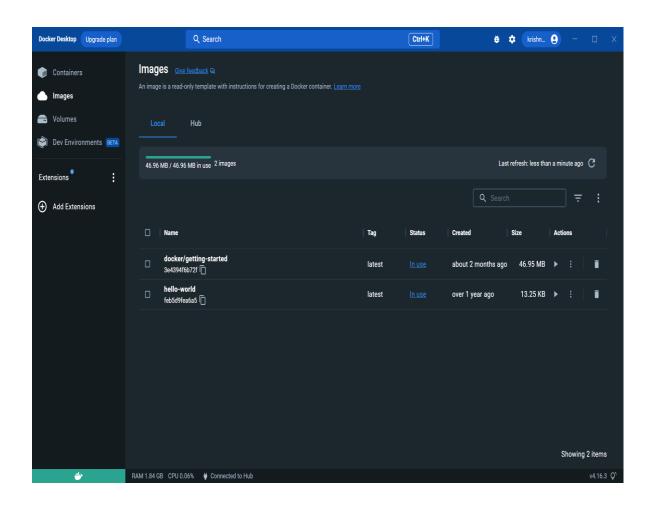
docker pull ubuntu

- This command will download the latest version of the Ubuntu image from Docker Hub.
- Once the image has finished downloading, run the following command to start a new container with Ubuntu:

Execute the following command:

docker run -it ubuntu

- This command will start a new container with the Ubuntu image in interactive mode.
- You should now be logged into the container with a command prompt. You can run any command or install any software just as you would on a regular Ubuntu system.



Microsoft Windows [Version 10.0.22621.1105]

(c) Microsoft Corporation. All rights reserved.

C:\Users\Venkata krishnareddy>docker version

Client:

Cloud integration: v1.0.29
Version: 20.10.22
API version: 1.41
Go version: go1.18.9
Git commit: 3a2c30b

Built: Thu Dec 15 22:36:18 2022

OS/Arch: windows/amd64

Context: default Experimental: true

Server: Docker Desktop 4.16.3 (96739)

Engine:

Version: 20.10.22

API version: 1.41 (minimum version 1.12)

Go version: go1.18.9 Git commit: 42c8b31

Built: Thu Dec 15 22:26:14 2022

OS/Arch: linux/amd64

Experimental: false

containerd:

Version: 1.6.14

GitCommit: 9ba4b250366a5ddde94bb7c9d1def331423aa323

runc:

Version: 1.1.4

GitCommit: v1.1.4-0-g5fd4c4d

docker-init:

Version: 0.19.0 GitCommit: de40ad0

C:\Users\Venkata krishnareddy>docker run ubuntu
Unable to find image 'ubuntu:latest' locally

latest: Pulling from library/ubuntu

677076032cca: Pull complete

Digest: sha256:9a0bdde4188b896a372804be2384015e90e3f84906b750c1a53539b585fbbe7f

Status: Downloaded newer image for ubuntu:latest

C:\Users\Venkata krishnareddy>

