Experiment No. 3

Aim: To Perform various GIT operations on local and Remote repositories using GIT Cheat Sheet

LO No. & Statement: (LO2): To obtain complete knowledge of the "version control system" to effectively track changes augmented with Git and GitHub

Theory:

Remote: For Push

Steps:

- Create the Instance on AWS under N. Virginia Region
- For creating the Instance first Sign Up for your AWS account.
- Then go to Console and click on EC2. There you will see Instance click on it and create the instance, while making the instance select create new key pair and choose .ppk extension for new key pair and download that key pair.
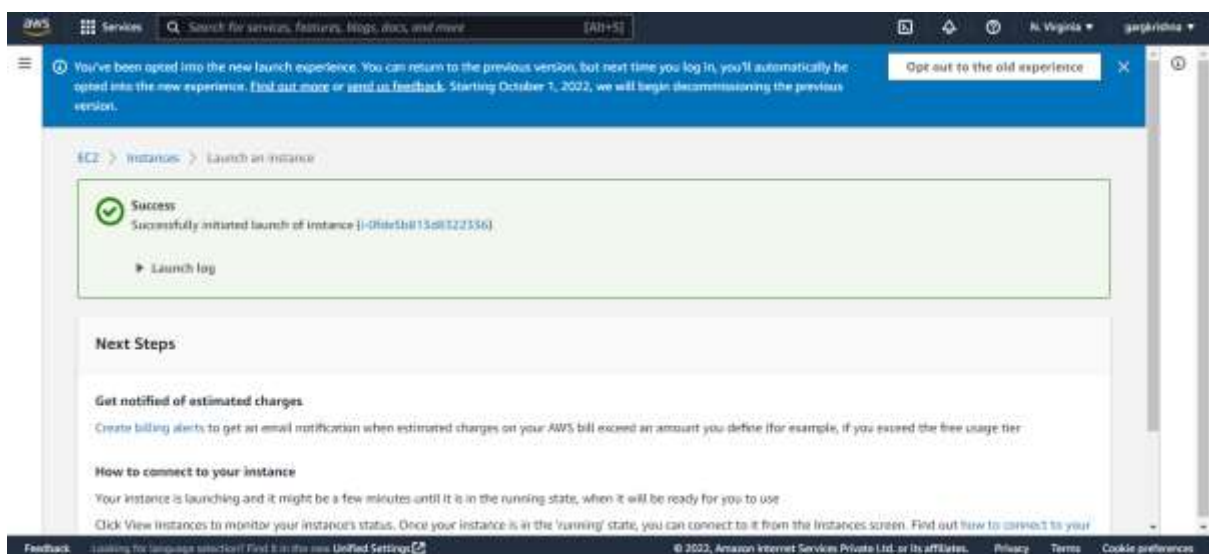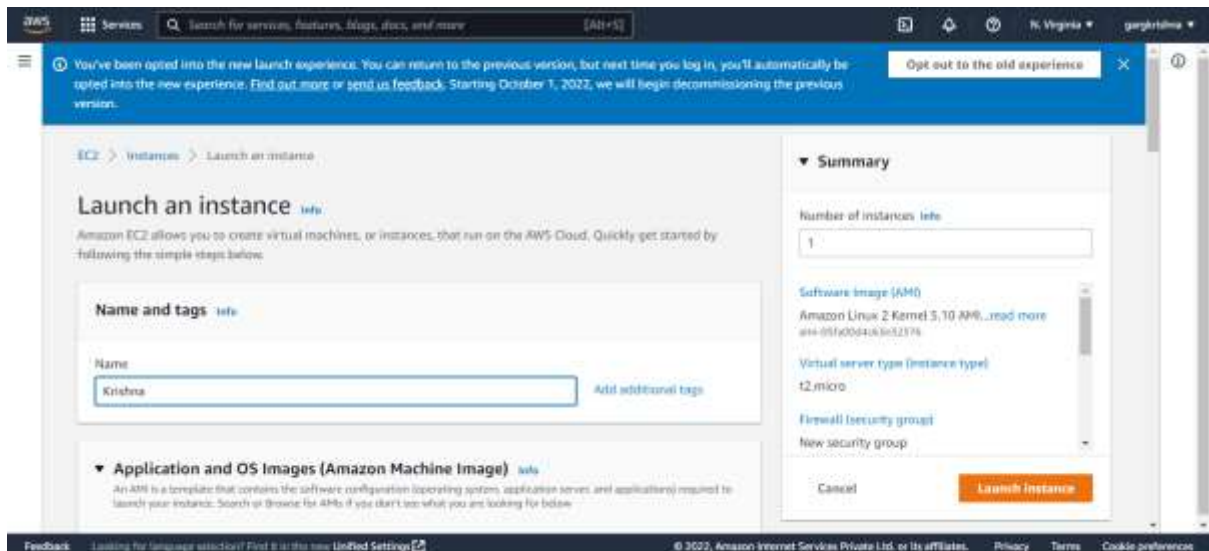
Download the PuTTY App and open it and login as ec2-user with the IP address and. ppk key.
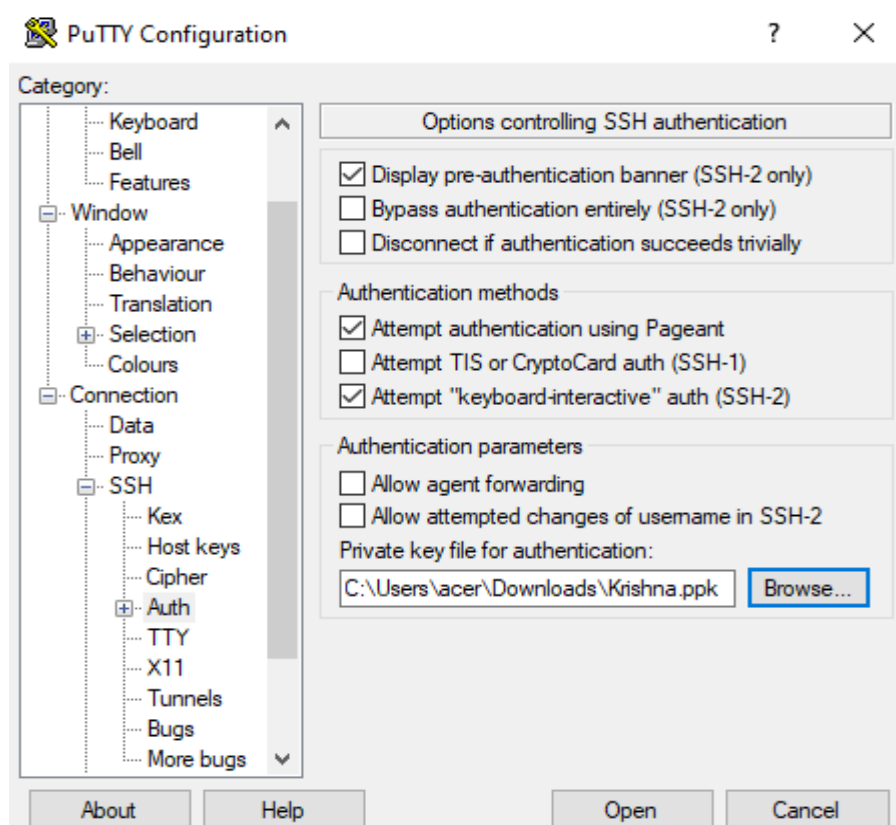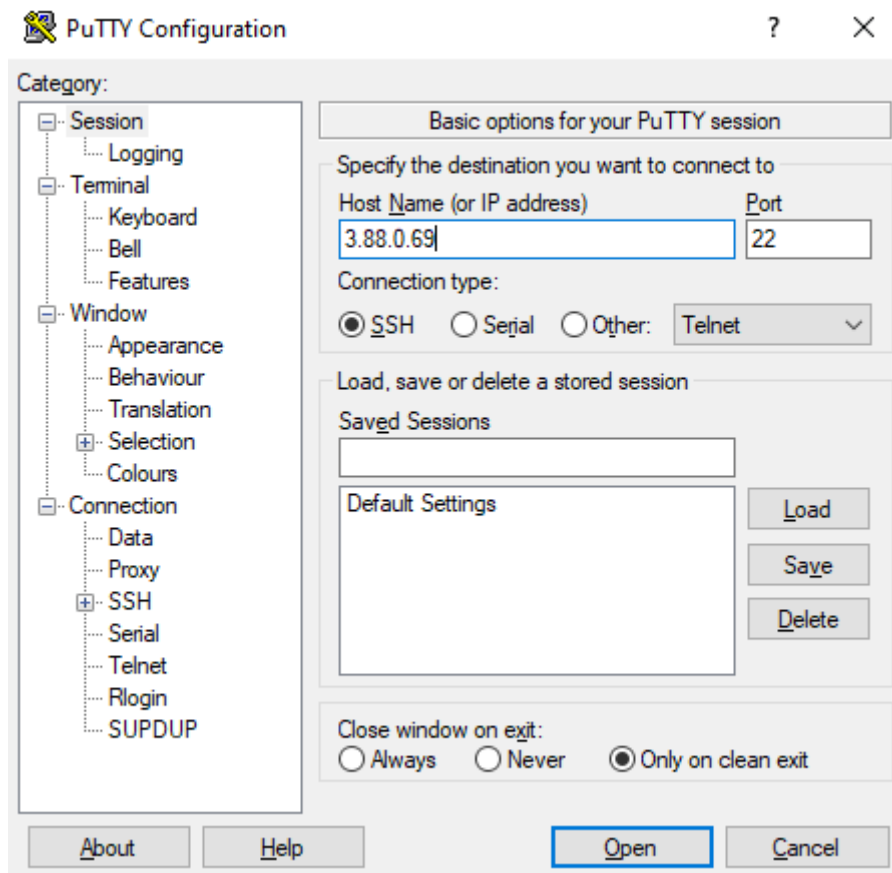
- ➢ Apply all the updates
  - • sudo su
  - • yum update -y
- ➢ Install Git
  - • yum install git -y
- ➢ Check the version of Git
  - • git - -version
- ➢ Add the user name and email address and list it
  - • git config - -global user.name "Name"
  - • git config - -global user.email "Email"
  - • git config - -list
- ➢ Make a new directory and create one file and add some text to that file
  - • mkdir 19
  - • ls
  - • cd 19
  - • cat >>Krishna
- ➢ Initialize git
  - • git init
  - • git status
- ➢ Push the repository to GitHub
  - • git add .
  - • git commit -m "first commit"
  - • git status
  - • git log
  - • git show (paste the yellow no. copied from the last command)
  - • git remote add origin (paste the URL of the repository)
  - • git push -u origin master

```
Installed:
  git.x86_64 0:2.37.1-1.amzn2.0.1
```

```
[root@ip-172-31-82-250 19]# git init
hint: Using 'master' as the name for the initial branch. This default br
anch name
hint: is subject to change. To configure the initial branch name to use
in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:    git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this com
mand:
hint:
hint:    git branch -m <name>
Initialized empty Git repository in /home/ec2-user/19/.git/
```

```
[root@ip-172-31-82-250 ec2-user]# git --version
git version 2.37.1
[root@ip-172-31-82-250 ec2-user]# git config --list
[root@ip-172-31-82-250 ec2-user]# git config --global user.name "Krishna"
[root@ip-172-31-82-250 ec2-user]# git config --global user.email "gargkrishna730
@gmail.com"
[root@ip-172-31-82-250 ec2-user]# git config --list
user.name=Krishna
user.email=gargkrishna730@gmail.com
[root@ip-172-31-82-250 ec2-user]# which git
/bin/git
[root@ip-172-31-82-250 ec2-user]# mkdir 19
[root@ip-172-31-82-250 ec2-user]# cd 19
[root@ip-172-31-82-250 19]# ls
[root@ip-172-31-82-250 19]# cat >> Krishna
Hii how are you? I'm in the lab
^C
[root@ip-172-31-82-250 19]# ls
Krishna
```

```
[root@ip-172-31-82-250 19]# git status
On branch master

No commits yet

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

```
[root@ip-172-31-82-250 19]# git add .
[root@ip-172-31-82-250 19]# git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   Krishna

[root@ip-172-31-82-250 19]# git commit -m "This is First Commit"
[master (root-commit) 99c1cd9] This is First Commit
 1 file changed, 1 insertion(+)
 create mode 100644 Krishna
[root@ip-172-31-82-250 19]# git status
On branch master
nothing to commit, working tree clean
[root@ip-172-31-82-250 19]# git log
commit 99c1cd97722065c489d6b22583d1f5388e28561e (HEAD -> master)
Author: Krishna <gargkrishna730@gmail.com>
Date:   Sat Sep 10 05:47:46 2022 +0000

    This is First Commit
[root@ip-172-31-82-250 19]# git show 99c1cd97722065c489d6b22583d1f5388e28561e
commit 99c1cd97722065c489d6b22583d1f5388e28561e (HEAD -> master)
Author: Krishna <gargkrishna730@gmail.com>
Date:   Sat Sep 10 05:47:46 2022 +0000

    This is First Commit

diff --git a/Krishna b/Krishna
new file mode 100644
index 0000000..d899859
--- /dev/null
+++ b/Krishna
@@ -0,0 +1 @@
+Hii how are you? I'm in the lab
[root@ip-172-31-82-250 19]# git remote add origin https://github.com/gargkrishna730/Krishna.git
```

```
[root@ip-172-31-82-250 19]# git push -u origin master
Username for 'https://github.com': Krishna
Password for 'https://Krishna@github.com':
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 250 bytes | 250.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/gargkrishna730/Krishna.git
 * [new branch]      master -> master
branch 'master' set up to track 'origin/master'.
```
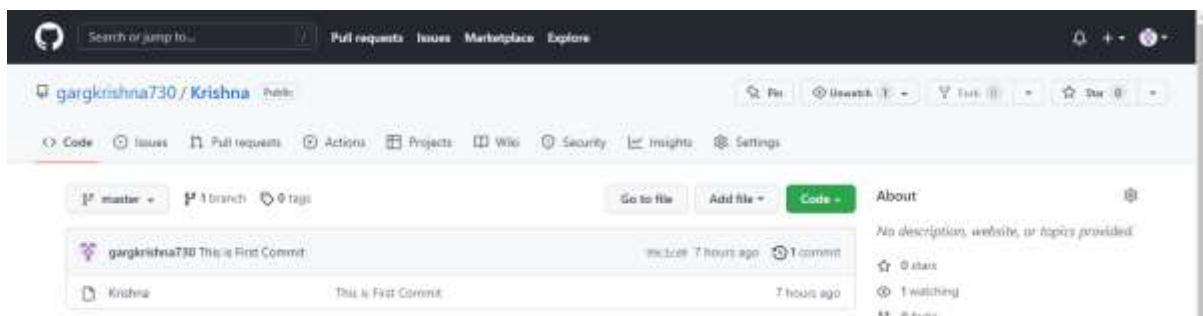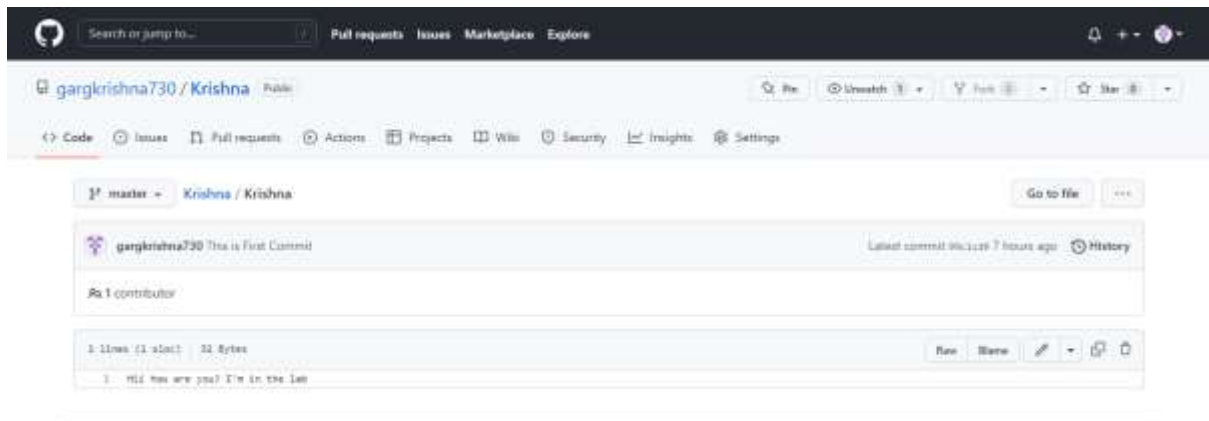
For Pull

Create the one more Instance on AWS under Ohio Region
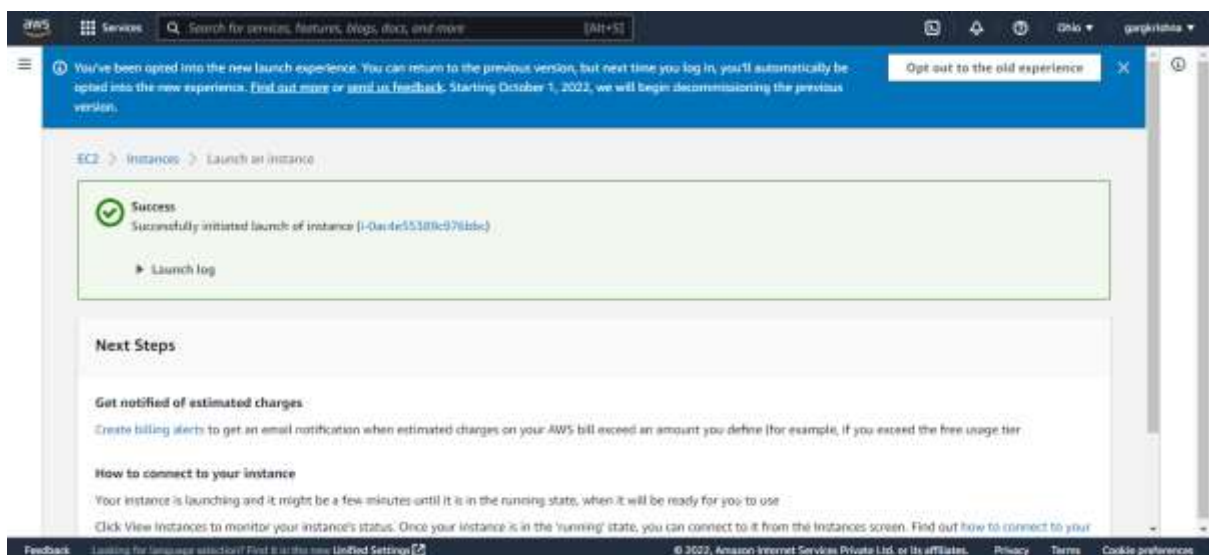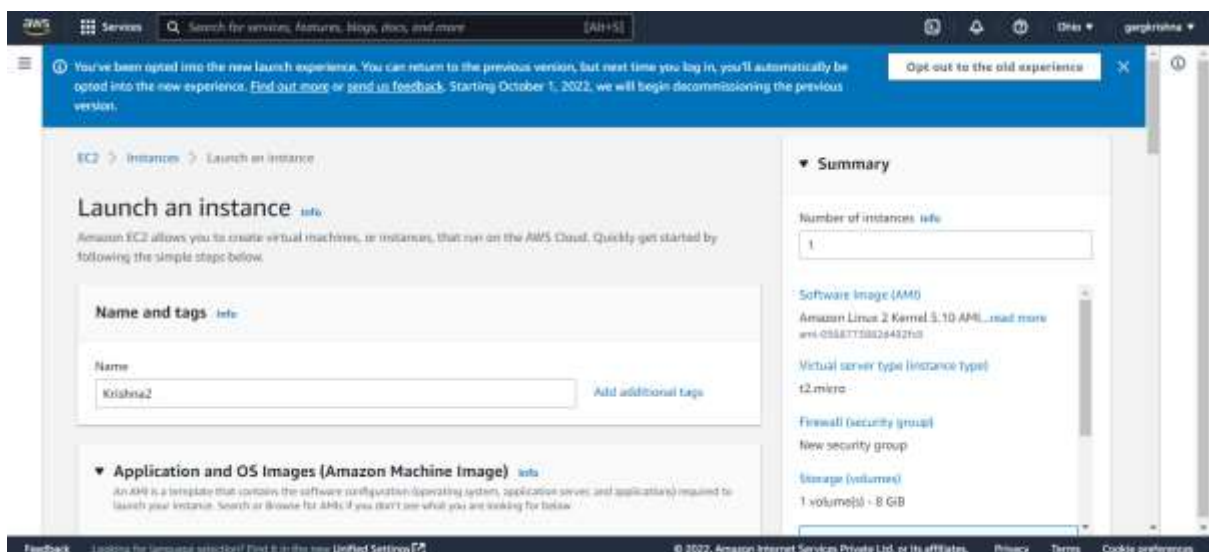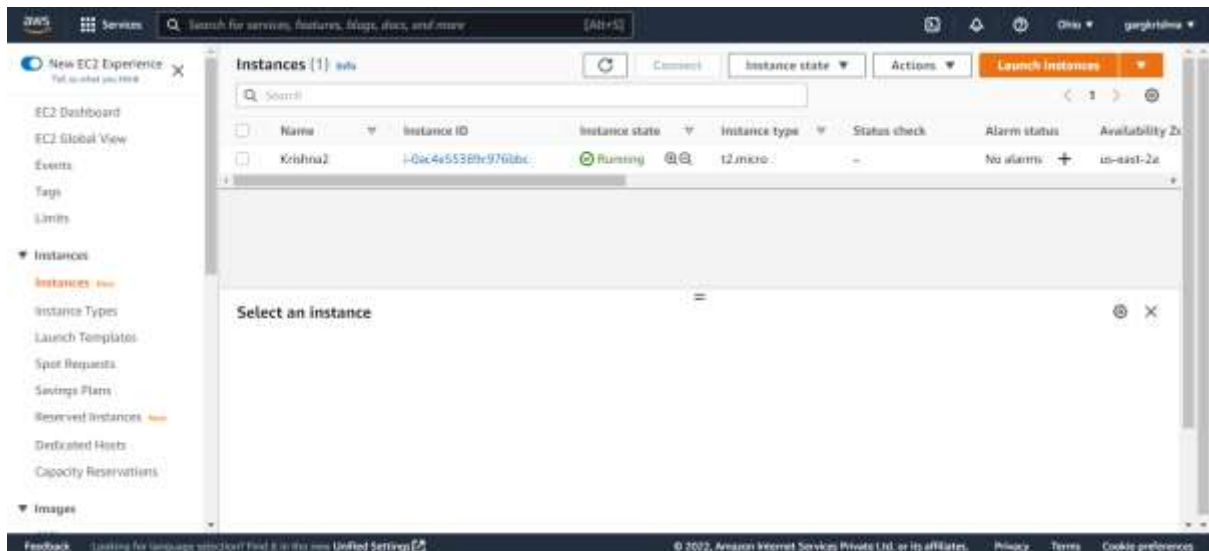
With PuTTY App login as ec2-user with the IP address and .ppk key

Follow the same steps to update, download git add global user and email

- ➢ Make a new directory
  - • mkdir pull
  - • cd pull
- ➢ Initialize Git
  - • git init
- ➢ Pull the repository from GitHub
  - • git remote add origin (paste the URL of the repository)
  - • git pull origin master
- ➢ Edit the File
  - • ls
  - • cat >> filename
- ➢ Push the repository to GitHub
  - • git add .
  - • git commit -m "first commit"
  - • git status
  - • git log
  - • git show (paste the yellow no. copied from the last command)
  - • git remote add origin (paste the URL of the repository)
  - • git push -u origin master

```
login as: ec2-user
Authenticating with public key "Krishna2"

    __|  __|_  )
    _|  (     /    Amazon Linux 2 AMI
   ___|\___|___|

https://aws.amazon.com/amazon-linux-2/
3 package(s) needed for security, out of 8 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-4-189 ~]$ sudo su
[root@ip-172-31-4-189 ec2-user]# yum update -y
```

```
[root@ip-172-31-4-189 ec2-user]# yum git install -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
No such command: git. Please use /bin/yum --help
[root@ip-172-31-4-189 ec2-user]# yum install git -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Resolving Dependencies
```

```
[root@ip-172-31-4-189 ec2-user]# git --version
git version 2.37.1
[root@ip-172-31-4-189 ec2-user]# git config --list
[root@ip-172-31-4-189 ec2-user]# git config --global user.name "Krishna"
[root@ip-172-31-4-189 ec2-user]# git config --global user.email "gargkrishna730@
gmail.com
> c^C
[root@ip-172-31-4-189 ec2-user]# ^C
[root@ip-172-31-4-189 ec2-user]# git config --global user.email "gargkrishna730@
gmail.com"
[root@ip-172-31-4-189 ec2-user]# git config --list
user.name=Krishna
user.email=gargkrishna730@gmail.com
[root@ip-172-31-4-189 ec2-user]# mkdir pull
[root@ip-172-31-4-189 ec2-user]# cd pull
[root@ip-172-31-4-189 pull]# git init
hint: Using 'master' as the name for the initial branch. This default branch nam
e
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:    git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:    git branch -m <name>
Initialized empty Git repository in /home/ec2-user/pull/.git/
```

```
[root@ip-172-31-4-189 pull]# git pull https://github.com/gargkrishna730/Krishna.
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), 230 bytes | 230.00 KiB/s, done.
From https://github.com/gargkrishna730/Krishna
 * branch            HEAD       -> FETCH_HEAD
[root@ip-172-31-4-189 pull]# ls
Krishna
[root@ip-172-31-4-189 pull]# cat Krishna
Hii how are you? I'm in the lab
```

```
[root@ip-172-31-4-189 pull]# cat >> Krishna
I am ok how are you?
^C
[root@ip-172-31-4-189 pull]# git status
On branch master
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:   Krishna

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

```
[root@ip-172-31-4-189 pull]# git add .
[root@ip-172-31-4-189 pull]# git commit -m " This is Second Person "
[master 0680a6f]  This is Second Person
 1 file changed, 1 insertion(+)
[root@ip-172-31-4-189 pull]# git status
On branch master
nothing to commit, working tree clean
[root@ip-172-31-4-189 pull]# git log
commit 0680a6fb6d80c321d1aa4b5081a396c3d2a0f4c0 (HEAD -> master)
Author: Krishna <gargkrishna730@gmail.com>
Date:   Sat Sep 10 13:06:20 2022 +0000

    This is Second Person

commit 99c1cd97722065c489d6b22583d1f5388e28561e
Author: Krishna <gargkrishna730@gmail.com>
Date:   Sat Sep 10 05:47:46 2022 +0000

    This is First Commit
[root@ip-172-31-4-189 pull]# git status
On branch master
nothing to commit, working tree clean
[root@ip-172-31-4-189 pull]# git show0680a6fb6d80c321d1aa4b5081a396c3d2a0f4c0
git: 'show0680a6fb6d80c321d1aa4b5081a396c3d2a0f4c0' is not a git command. See 'g
it --help'.
[root@ip-172-31-4-189 pull]# git show 0680a6fb6d80c321d1aa4b5081a396c3d2a0f4c0
commit 0680a6fb6d80c321d1aa4b5081a396c3d2a0f4c0 (HEAD -> master)
Author: Krishna <gargkrishna730@gmail.com>
Date:   Sat Sep 10 13:06:20 2022 +0000

    This is Second Person

diff --git a/Krishna b/Krishna
index d899859..5e01b3c 100644
--- a/Krishna
+++ b/Krishna
@@ -1 +1,2 @@
 Hii how are you? I'm in the lab
+I am ok how are you?
[root@ip-172-31-4-189 pull]# git status
On branch master
nothing to commit, working tree clean
```

```
[root@ip-172-31-4-189 pull]# git add .
[root@ip-172-31-4-189 pull]# git status
On branch master
nothing to commit, working tree clean
[root@ip-172-31-4-189 pull]# git remote add origin https://github.com/gargkrishn
a730/Krishna.git
[root@ip-172-31-4-189 pull]# git push -u origin master
Username for 'https://github.com': Krishna
Password for 'https://Krishna@github.com':
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 293 bytes | 293.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/gargkrishna730/Krishna.git
   99c1cd9..0680a6f  master -> master
branch 'master' set up to track 'origin/master'.
```
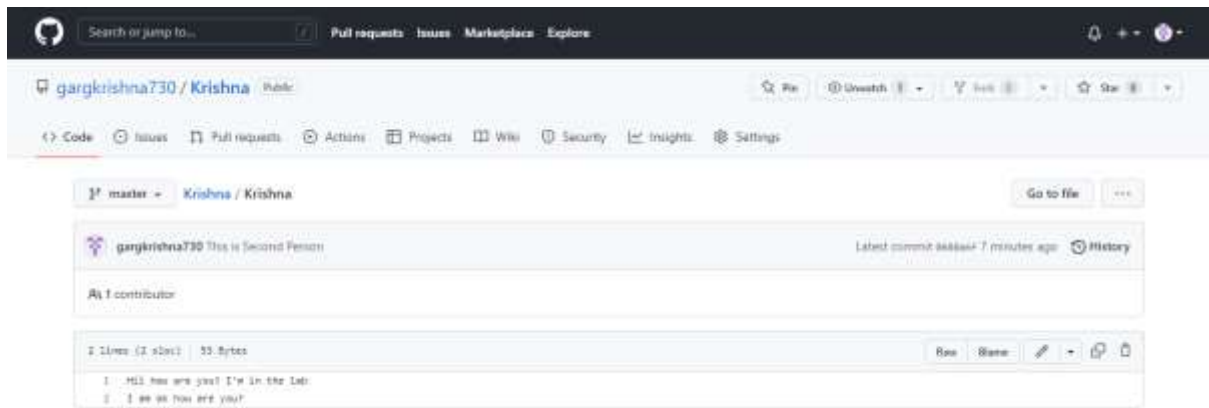
Local: For Push

Steps:

- ➤ Download and install Git on to your system
- ➤ Run the Git and move to the folder you have created from this project with cd command
- ➤ Initialize Git
  - • git init
- ➤ Add the username and email address
  - • git config - -global user.name "Name"
  - • git config - -global user.email "email@example.com"
- ➤ Create one file and add some text
  - • cat >> Krishna19
- ➤ check the status
  - • git status
- ➤ Push the file into the repository in GitHub
  - • git add .
  - • git commit -m "first commit"
  - • git status
  - • git log
  - • git remote add origin (paste the URL of the repository)
  - • git push -u origin master

```
acer@Krishna MINGW64 ~
$ git config --global user.name "Krishna"

acer@Krishna MINGW64 ~
$ git config --global user.email "gargkrishna730@gmail.com"

acer@Krishna MINGW64 ~
$ git config --list
diff.astextplain.textconv=astextplain
filter.lfs.clean=git-lfs clean -- %f
filter.lfs.smudge=git-lfs smudge -- %f
filter.lfs.process=git-lfs filter-process
filter.lfs.required=true
http.sslbackend=openssl
http.sslcainfo=C:/Program Files/Git/mingw64/ssl/certs/ca-bundle.crt
core.autocrlf=true
core.fscache=true
core.symlinks=true
pull.rebase=false
credential.helper=manager-core
credential.https://dev.azure.com.usehttppath=true
init.defaultbranch=master
user.email=gargkrishna730@gmail.com
user.name=Krishna
```

```
acer@Krishna MINGW64 ~
$ cd desktop
```

```
acer@Krishna MINGW64 ~/desktop
$ cd Devops
```

```
acer@Krishna MINGW64 ~/desktop/Devops
$ cat >> Krishna19
bash: Krishna19: Is a directory

acer@Krishna MINGW64 ~/desktop/Devops
$ cat >> Krishna19
Hii This is a message from local machine


acer@Krishna MINGW64 ~/desktop/Devops
$ cat >> Krishna19



acer@Krishna MINGW64 ~/desktop/Devops
$ git init
Initialized empty Git repository in C:/Users/acer/Desktop/Devops/.git/

acer@Krishna MINGW64 ~/desktop/Devops (master)
$ git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        Krishna19

nothing added to commit but untracked files present (use "git add" to track)

acer@Krishna MINGW64 ~/desktop/Devops (master)
$ git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        Krishna19

nothing added to commit but untracked files present (use "git add" to track)
```

```
acer@Krishna MINGW64 ~/desktop/Devops (master)
$ git add .
warning: LF will be replaced by CRLF in Krishna19.
The file will have its original line endings in your working directory

acer@Krishna MINGW64 ~/desktop/Devops (master)
$ git commit -m "This is First Commit"
[master (root-commit) 5976f89] This is First Commit
 1 file changed, 2 insertions(+)
 create mode 100644 Krishna19

acer@Krishna MINGW64 ~/desktop/Devops (master)
$ git status
On branch master
nothing to commit, working tree clean

acer@Krishna MINGW64 ~/desktop/Devops (master)
$ git log
commit 5976f890d4f922d64518bf3681d0c36700bd2ed3 (HEAD -> master)
Author: Krishna <gargkrishna730@gmail.com>
Date:   Sat Sep 10 18:56:29 2022 +0530

    This is First Commit

acer@Krishna MINGW64 ~/desktop/Devops (master)
$ git remote add origin https://github.com/gargkrishna730/19.git
```
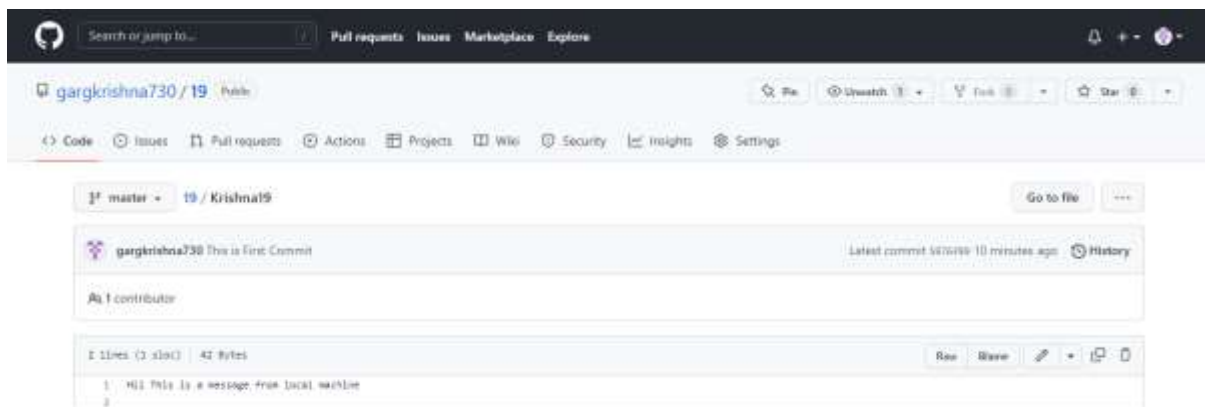
```
acer@Krishna MINGW64 ~/desktop/Devops (master)
$ git push -u origin master
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 263 bytes | 65.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/gargkrishna730/19.git
 * [new branch]      master -> master
branch 'master' set up to track 'origin/master'.
```


For Pull

➢ Make a new directory
  • mkdir pull
  • cd pull
➢ Initialize Git
  • git init
➢ Add the username and email address
  • git config - -global user.name "Name"
  • git config - -global user.email "email@example.com"
➢ Pull the repository from GitHub
  • git remote add origin (paste the URL of the repository)
  • git pull origin master

- ➢ Edit the File
  - • ls
  - • cat >> Krishna19
- ➢ Push the repository to GitHub
  - • git add .
  - • git commit -m "first commit"
  - • git status
  - • git remote add origin (paste the URL of the repository)
  - • git push -u origin master

```
acer@Krishna MINGW64 ~
$ mkdir Devops2

acer@Krishna MINGW64 ~
$ cd Devops2

acer@Krishna MINGW64 ~/Devops2
$ git init
Initialized empty Git repository in C:/Users/acer/Devops2/.git/

acer@Krishna MINGW64 ~/Devops2 (master)
$ git pull https://github.com/gargkrishna730/19.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), 243 bytes | 9.00 KiB/s, done.
From https://github.com/gargkrishna730/19
 * branch            HEAD         -> FETCH_HEAD

acer@Krishna MINGW64 ~/Devops2 (master)
$ ls
Krishna19

acer@Krishna MINGW64 ~/Devops2 (master)
$ cat >> Krishna19
This is Second Message after Pull


acer@Krishna MINGW64 ~/Devops2 (master)
$ cat >> Krishna19



acer@Krishna MINGW64 ~/Devops2 (master)
$ git add .
warning: LF will be replaced by CRLF in Krishna19.
The file will have its original line endings in your working directory

acer@Krishna MINGW64 ~/Devops2 (master)
$ git commit -m "This is the Second Edit"
[master 057c837] This is the Second Edit
 1 file changed, 2 insertions(+)

acer@Krishna MINGW64 ~/Devops2 (master)
$ git status
On branch master
nothing to commit, working tree clean
```

```
acer@Krishna MINGW64 ~/Devops2 (master)
$ git remote add origin https://github.com/gargkrishna730/19.git

acer@Krishna MINGW64 ~/Devops2 (master)
$ git push -u origin master
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), 319 bytes | 319.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/gargkrishna730/19.git
   5976f89..057c837  master -> master
branch 'master' set up to track 'origin/master'.
```
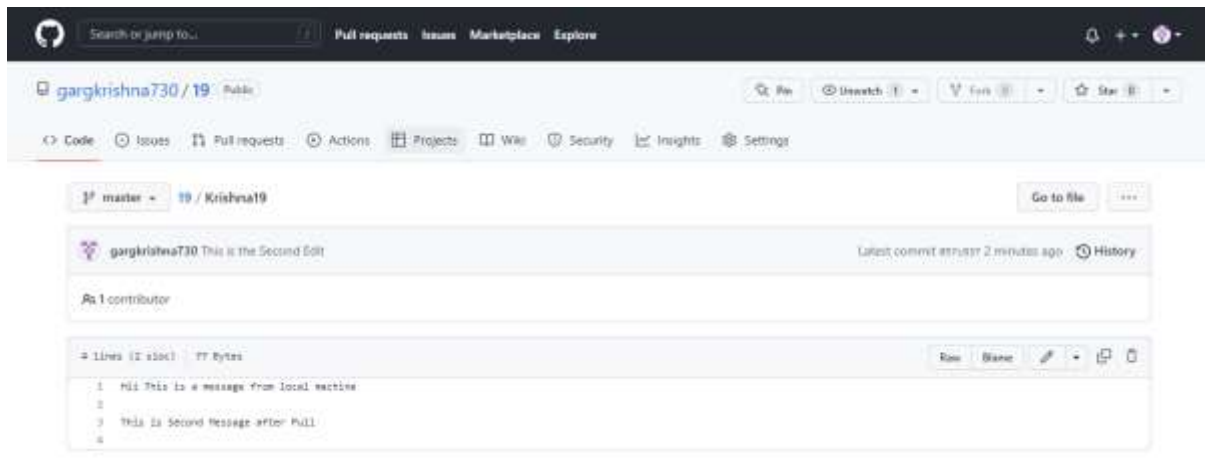
Conclusion:

From this experiment, I have learned and understood how to push and pull file using GIT Cheat-Sheet and do it on the local machine as well as on remote using AWS EC2 Instance. Also was able to get knowledge of the version control system to effectively track changes augmented with Git and GitHub.

We have achieved LO2 from this experiment.

We have also achieved Program Outcomes PO1, PO2, PO3, PO4, PO5, PO12.