

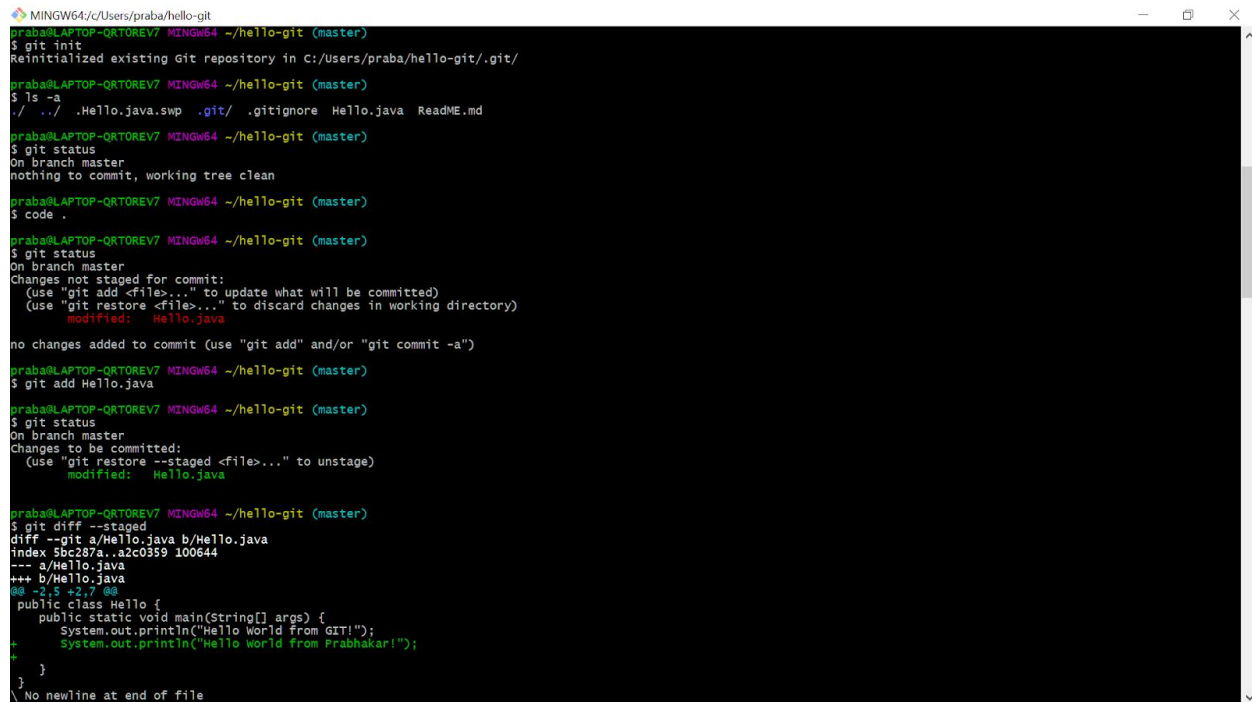
Version Control System (VCS), GIT

Prabhakar P

Note: the steps that mentioned below are in the screenshot.

Git basics command(hello-git):

- Created local repo using “**git init**” (already created during session, so i reinitialized)
- Modified Hello.java file and staged the file using “**git add**” command.
- See the difference between staged file and already commit file (Hello.java) using “**git diff --staged**” command.



```
MINGW64~/Users/praba/hello-git
praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git (master)
$ git init
Reinitialized existing Git repository in C:/Users/praba/hello-git/.git/

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git (master)
$ ls -la
./ ../ .Hello.java.swp .git/ .gitignore Hello.java README.md

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git (master)
$ git status
On branch master
nothing to commit, working tree clean

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git (master)
$ code .

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git (master)
$ 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:   Hello.java

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

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git (master)
$ git add Hello.java

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git (master)
$ git status
On branch master
changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        modified:   Hello.java

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git (master)
$ git diff --staged
diff --git a/Hello.java b/Hello.java
index 5bc287a..a2c0359 100644
--- a/Hello.java
+++ b/Hello.java
@@ -2,5 +2,7 @@
 public class Hello {
     public static void main(String[] args) {
         System.out.println("Hello world from GIT!");
+        System.out.println("Hello world from Prabhakar!");
     }
 }
\ No newline at end of file
```

- Committed changes into local repo using “**git commit**”
- We can see all the commit histories using “**git log**” command
- Can also check the patches of commits using “**git log -p**”

```
MINGW64/C:/Users/praba/hello-git
praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git (master)
$ git commit -m "modified file"
[master a338078] modified file
1 file changed, 2 insertions(+)

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git (master)
$ git log
commit a33807895cfcc12071628eb52c835f7dcc7d6a5e (HEAD -> master)
Author: Prabakar19 <praphakar119@gmail.com>
Date: Thu Jan 7 20:54:21 2021 +0530

    modified file

commit edbffc3a935e0ee62817db6f8ff5536cf90604e9
Author: Prabakar19 <praphakar119@gmail.com>
Date: Wed Jan 6 16:50:20 2021 +0530

    gitignore commit

commit 4c22db41c7fea88ec9aef236019f1a682a528c6d
Author: Prabakar19 <praphakar119@gmail.com>
Date: Wed Jan 6 16:41:08 2021 +0530

    second commit

commit d3bb3f97f28b56dae0cb1c4d420b082ad62be6d3
Author: Prabakar19 <praphakar119@gmail.com>
Date: Wed Jan 6 16:22:13 2021 +0530

    Initial Commit

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git (master)
$ git log -p
commit a33807895cfcc12071628eb52c835f7dcc7d6a5e (HEAD -> master)
Author: Prabakar19 <praphakar119@gmail.com>
Date: Thu Jan 7 20:54:21 2021 +0530

    modified file

diff --git a/Hello.java b/Hello.java
index 5bc287a..a2c0359 100644
--- a/Hello.java
+++ b/Hello.java
@@ -2,5 +2,7 @@
 public class Hello {
     public static void main(String[] args) {
         System.out.println("Hello world from GIT!");
+        System.out.println("Hello world from Prabakar!");
     }
 }
\ No newline at end of file
```

Git branch:

- Cloned the remote repo from "<https://github.com/Prabakar19/hello-git.git>" (demo remote repo)
- Created new branch(develop) in local using "**git branch develop**" command.
- Switched to develop branch using "**git checkout develop**" cmd
- Modified ReadME file and committed into local and seeing logs using "**git log**".

```
MINGW64/C:/Users/praba/hello-git-cloned/hello-git
praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git-cloned/hello-git (master)
$ git branch develop

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git-cloned/hello-git (master)
$ git checkout develop
Switched to branch 'develop'

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git-cloned/hello-git (develop)
$ git status
On branch develop
nothing to commit, working tree clean

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git-cloned/hello-git (develop)
$ code .

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git-cloned/hello-git (develop)
$ git status
On branch develop
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:   README.md

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

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git-cloned/hello-git (develop)
$ git add README.md

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git-cloned/hello-git (develop)
$ git commit -m "updated README"
[develop 21d42b4] updated README
1 file changed, 2 insertions(+), 1 deletion(-)

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git-cloned/hello-git (develop)
$ git status
On branch develop
nothing to commit, working tree clean

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git-cloned/hello-git (develop)
$ git log
commit 21d42b46e6a6bf7e20290122758bea27f636b576 (HEAD -> develop)
Author: Prabakar19 <praphakar119@gmail.com>
Date: Thu Jan 7 21:27:33 2021 +0530

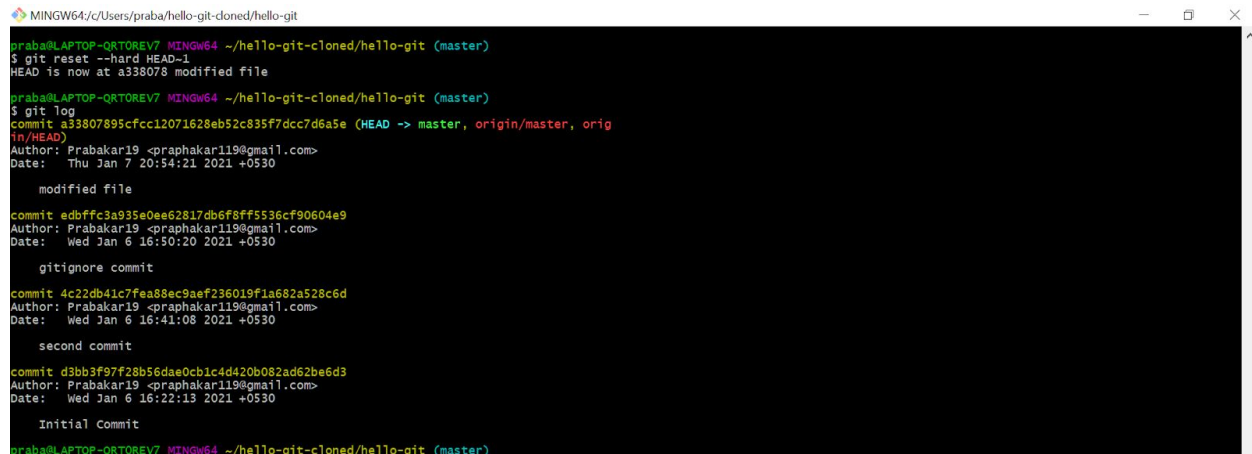
    updated README

commit a33807895cfcc12071628eb52c835f7dcc7d6a5e (origin/master, origin/HEAD, mas
ter)
Author: Prabakar19 <praphakar119@gmail.com>
Date: Thu Jan 7 20:54:21 2021 +0530

    modified file
```

Reset and Merge:

- I have committed the master branch one commit ahead of develop branch.
- So reverted the last commit in master using “**git reset --hard HEAD~1**”
- When i executed the “**git log**” command, there’s 4 commits histories are visible



```
MINGW64: c:/Users/praba/hello-git-cloned/hello-git
praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git-cloned/hello-git (master)
$ git reset --hard HEAD~1
HEAD is now at a338078 modified file

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git-cloned/hello-git (master)
$ git log
commit a33807895cfc12071628eb52c835f7dcc7d6a5e (HEAD -> master, origin/master, orig
in/HEAD)
Author: Prabakar19 <praphakar119@gmail.com>
Date: Thu Jan 7 20:54:21 2021 +0530

    modified file

commit edbffc3a935e0ee62817db6f8ff5536cf90604e9
Author: Prabakar19 <praphakar119@gmail.com>
Date: Wed Jan 6 16:50:20 2021 +0530

    gitignore commit

commit 4c22db41c7fea88ec9aef236019f1a682a528c6d
Author: Prabakar19 <praphakar119@gmail.com>
Date: Wed Jan 6 16:41:08 2021 +0530

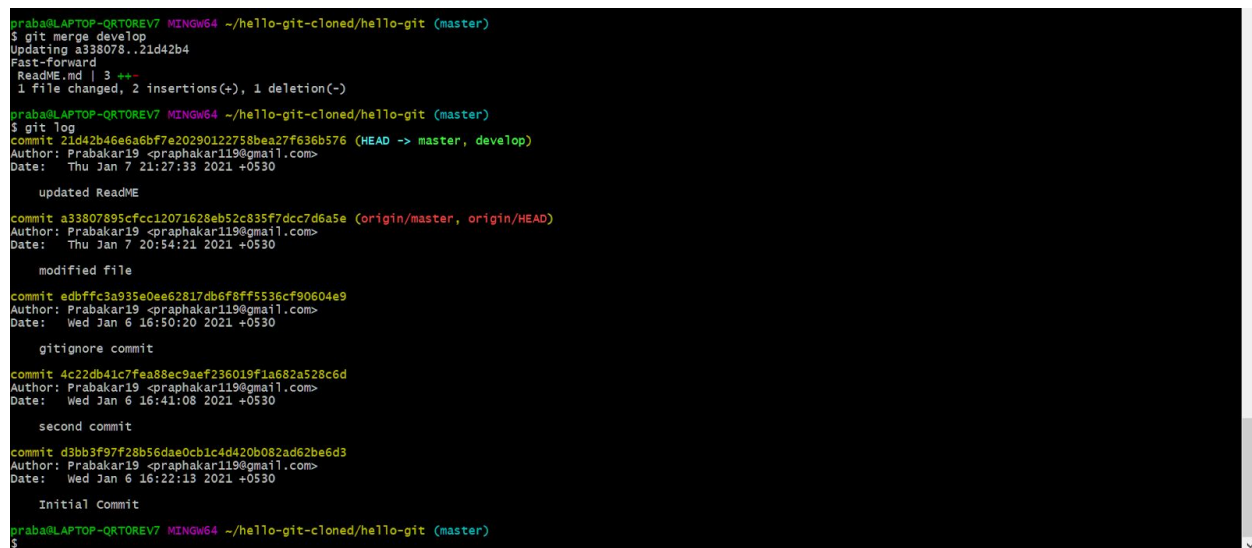
    second commit

commit d3bb3f97f28b56dae0cb1c4d420b082ad62be6d3
Author: Prabakar19 <praphakar119@gmail.com>
Date: Wed Jan 6 16:22:13 2021 +0530

    Initial Commit

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git-cloned/hello-git (master)
```

- And merged develop branch with master using “**git merge develop**”.
- Now when i execute “**git log**” we can see 5 commits (because develop branch was one commit ahead of master)



```
praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git-cloned/hello-git (master)
$ git merge develop
Updating a338078..21d42b4
Fast-forward
 README.md | 3 ++-
 1 file changed, 2 insertions(+), 1 deletion(-)

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git-cloned/hello-git (master)
$ git log
commit 21d42b46e6a6bf7e20290122758bea27f636b576 (HEAD -> master, develop)
Author: Prabakar19 <praphakar119@gmail.com>
Date: Thu Jan 7 21:27:33 2021 +0530

    updated README

commit a33807895cfc12071628eb52c835f7dcc7d6a5e (origin/master, origin/HEAD)
Author: Prabakar19 <praphakar119@gmail.com>
Date: Thu Jan 7 20:54:21 2021 +0530

    modified file

commit edbffc3a935e0ee62817db6f8ff5536cf90604e9
Author: Prabakar19 <praphakar119@gmail.com>
Date: Wed Jan 6 16:50:20 2021 +0530

    gitignore commit

commit 4c22db41c7fea88ec9aef236019f1a682a528c6d
Author: Prabakar19 <praphakar119@gmail.com>
Date: Wed Jan 6 16:41:08 2021 +0530

    second commit

commit d3bb3f97f28b56dae0cb1c4d420b082ad62be6d3
Author: Prabakar19 <praphakar119@gmail.com>
Date: Wed Jan 6 16:22:13 2021 +0530

    Initial Commit

praba@LAPTOP-QRTOREV7 MINGW64 ~/hello-git-cloned/hello-git (master)
$
```

Move:

- Added test2.txt into staged and committed
- Renamed test2.txt into test3.txt using “**git mv**”.
- Used “**git diff --staged**” to see the difference between committed file and staged.

```
MINGW64/c/Users/praba/AU_Assignment
praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git add test2.txt

praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    new file:   test2.txt

praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git commit -m "initial commit"
[master 0a9a022] initial commit
1 file changed, 1 insertion(+)
 create mode 100644 test2.txt

praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git mv test2.txt test3.txt

praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    renamed:   test2.txt -> test3.txt

praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git diff --staged
diff --git a/test2.txt b/test3.txt
similarity index 100%
rename from test2.txt
rename to test3.txt

praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git commit -m "file renamed"
[master e44a7db] file renamed
1 file changed, 0 insertions(+), 0 deletions(-)
 rename test2.txt => test3.txt (100%)

praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git status
On branch master
nothing to commit, working tree clean

praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git log
commit e44a7db1c0052493a5a73251154037a827830e2e (HEAD -> master)
Author: Prabakar19 <prabakar19@gmail.com>
Date:   Wed Jan 6 22:13:07 2021 +0530
```

Remove:

- “test.txt” file is already committed and i removed it using “**git rm test.txt**”
- Using “**git status**”, I am able to see deleted changes.
- Using “**git diff --staged**”, can compare committed file and staged changes. Here it says it was removed.

```
MINGW64/c/Users/praba/AU_Assignment
praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git status
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    sample.txt

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

praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git rm test.txt
rm 'test.txt'

praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    deleted:   test.txt

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

praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git diff --staged
diff --git a/test.txt b/test.txt
deleted file mode 100644
index e992a53..0000000
--- a/test.txt
+++ /dev/null
@@ -1,0,0 @@
<staging> file 1
\ No newline at end of file

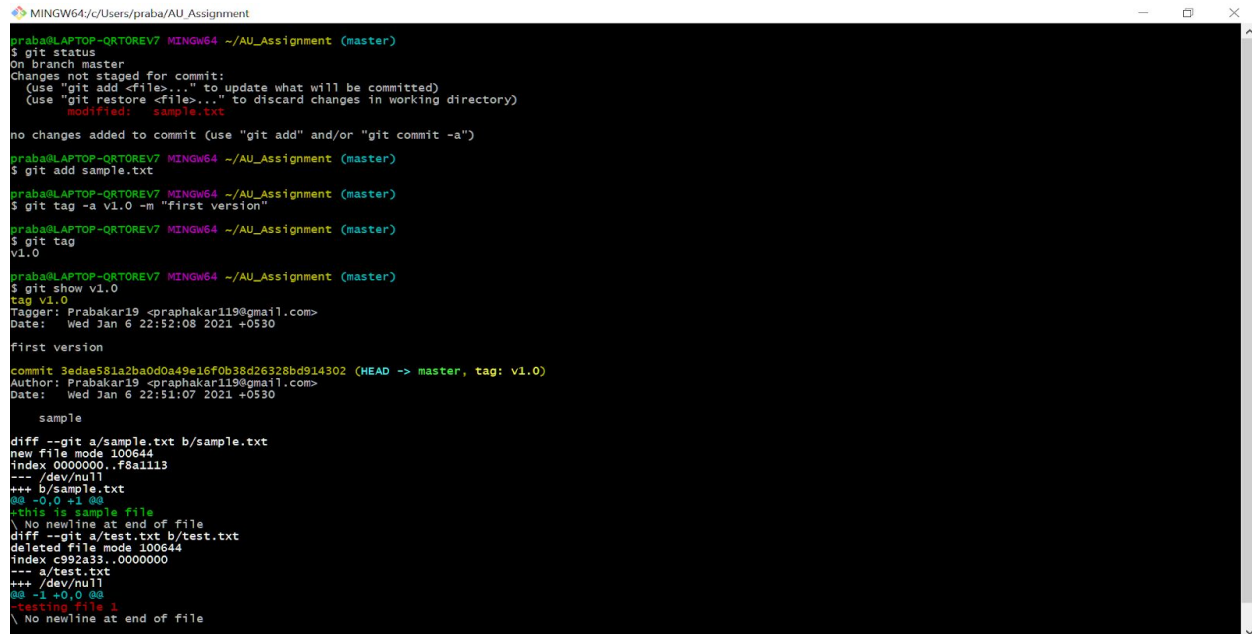
praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git rm sample.txt
fatal: pathspec 'sample.txt' did not match any files

praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git add sample.txt

praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    new file:   sample.txt
    deleted:    test.txt
```

Tag:

- Created a “sample.txt” file and added it into staged.
- Then committed the sample.txt as v1.0 using “**git tag**” command. When i show the version using “**git show v1.0**”, i am able to see tag and commit details



```
MINGW64/c/Users/praba/AU_Assignment
praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ 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:   sample.txt

no changes added to commit (use "git add" and/or "git commit -a")
praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git add sample.txt
praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git tag -a v1.0 -m "first version"
praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git tag
v1.0
praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git show v1.0
tag v1.0
Tagger: Prabakar19 <praphakar119@gmail.com>
Date:   Wed Jan 6 22:52:08 2021 +0530

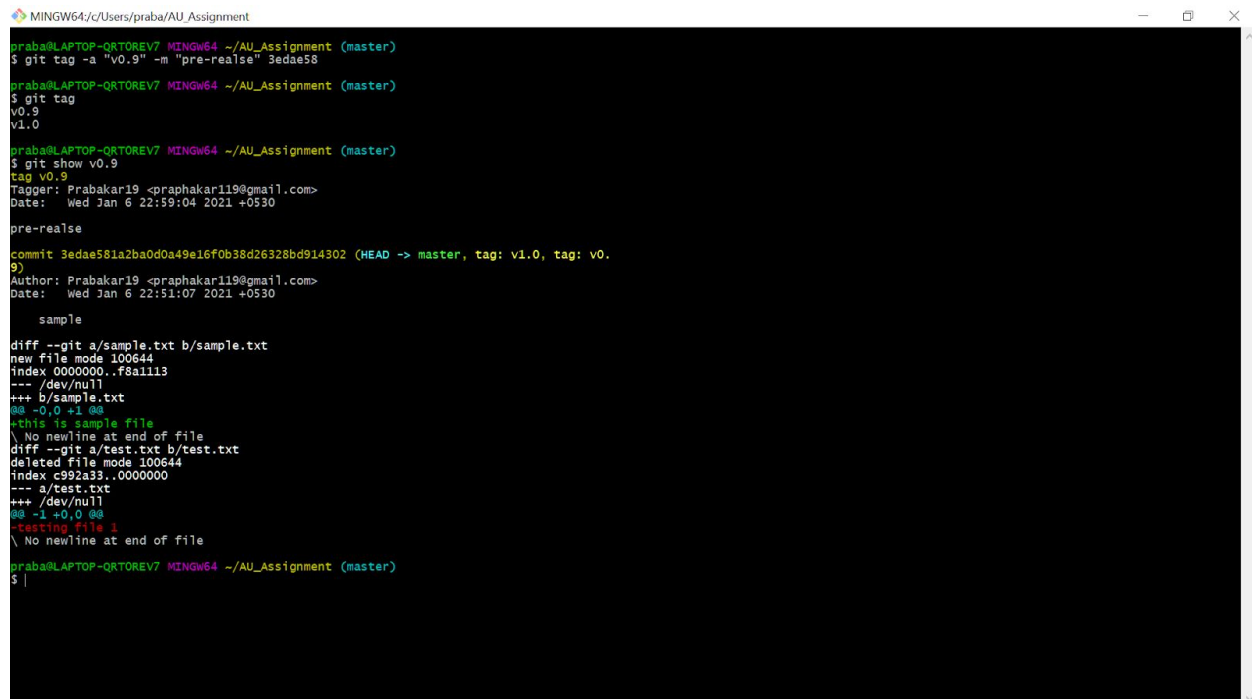
first version

commit 3edae581a2ba0d0a49e16f0b38d26328bd914302 (HEAD -> master, tag: v1.0)
Author: Prabakar19 <praphakar119@gmail.com>
Date:   Wed Jan 6 22:51:07 2021 +0530

    sample

diff --git a/sample.txt b/sample.txt
new file mode 100644
index 0000000..f8a1113
--- /dev/null
+++ b/sample.txt
@@ -0,0 +1 @@
+this is sample file
\ No newline at end of file
diff --git a/test.txt b/test.txt
deleted file mode 100644
index c992a33..0000000
--- a/test.txt
+++ /dev/null
@@ -1,0.0 @@
-testing file 1
\ No newline at end of file
```

- Added version “v0.9” to the last commit using the first 8 character of the commit id.
- “**git tag**” shows all the versions.



```
MINGW64/c/Users/praba/AU_Assignment
praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git tag -a "v0.9" -m "pre-realse" 3edae58
praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git tag
v0.9
v1.0
praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$ git show v0.9
tag v0.9
Tagger: Prabakar19 <praphakar119@gmail.com>
Date:   Wed Jan 6 22:59:04 2021 +0530

pre-realse

commit 3edae581a2ba0d0a49e16f0b38d26328bd914302 (HEAD -> master, tag: v1.0, tag: v0.9)
Author: Prabakar19 <praphakar119@gmail.com>
Date:   Wed Jan 6 22:51:07 2021 +0530

    sample

diff --git a/sample.txt b/sample.txt
new file mode 100644
index 0000000..f8a1113
--- /dev/null
+++ b/sample.txt
@@ -0,0 +1 @@
+this is sample file
\ No newline at end of file
diff --git a/test.txt b/test.txt
deleted file mode 100644
index c992a33..0000000
--- a/test.txt
+++ /dev/null
@@ -1,0.0 @@
-testing file 1
\ No newline at end of file
praba@LAPTOP-QRTOREV7 MINGW64 ~/AU_Assignment (master)
$
```

Have added all the screenshots as images in the folder.