

Module 2: Version Control with Git

Demo Document - 1

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Demo – 1: Git Common Commands

- Set up username for your repository
Syntax: `git config --global user.name "username"`
- Set up user-email for your repository
Syntax: `git config --global user.email "useremail@example.com"`

```
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/gitEg$ git config --global user.name "amrjeet"  
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/gitEg$ git config --global user.email "amrinderjeet.singh@edureka.co"  
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/gitEg$
```

- Select or create the Directory where you want to initialize Git
- **Initialize Git** in the Directory
Syntax: `git init`

```
amrinderjeet@amrinderjeet-VirtualBox:~/Documents$ mkdir demo  
amrinderjeet@amrinderjeet-VirtualBox:~/Documents$ cd demo  
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ git init  
Initialized empty Git repository in /home/amrinderjeet/Documents/demo/.git/  
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$
```

- To **add** a file to the **staging area**
Syntax: `git add <filename>`
- To check the working tree **status**
Syntax: `git status`

```
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ git add Demo.java
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ git status
On branch master

Initial commit

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

        new file:   Demo.java

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

        Demo.class

amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$
```

- To **commit** the **staged** files to you **local repository**:
Syntax: git commit

```
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ git commit
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ git commit
[master (root-commit) 1a79bb3] Added the first file to the repo
1 file changed, 5 insertions(+)
create mode 100644 Demo.java
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$
```

- The git **diff** command displays all the changes made to the **tracked** files
Syntax: git diff

```
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ gedit Demo.java
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ git diff
diff --git a/Demo.java b/Demo.java
index 08c38d4..46aa909 100644
--- a/Demo.java
+++ b/Demo.java
@@ -1,5 +1,6 @@
class Demo{
    public static void main(String[] args){
        System.out.println("This is a demo program.");
+       System.out.println("Git is very easy to Operate");
+    }
}
```

- To **stage and commit** multiple files at once we use -a flag with the commit command

Syntax: git commit -a -m 'message'

```
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ git commit -a -m 'New files added and Demo.java modified'
[master dd756e6] New files added and Demo.java modified
4 files changed, 6 insertions(+)
create mode 100644 Demo.class
create mode 100644 Demo2.class
create mode 100644 Demo2.java
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$
```

- The **git rm** command deletes the file from git repository as well as users system

Syntax: git rm <filename>

```
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ git rm Demo.class
```

- To remove the file from git repository but not from the system --**cached** option

Syntax: git rm --cached <filename>

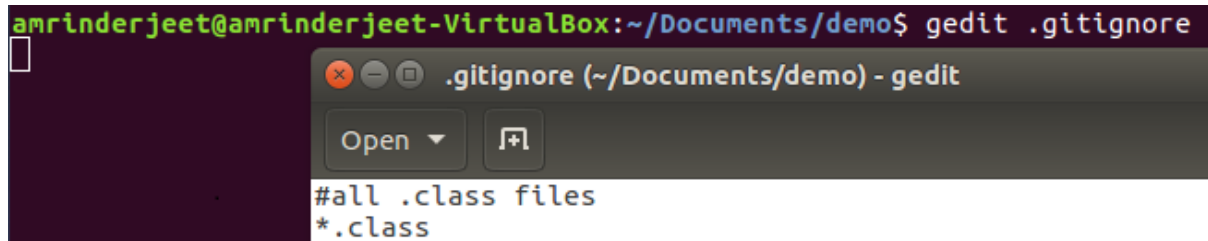
```
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ git rm --cached Demo.class
rm 'Demo.class'
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$
```

- You can force remove a staged file by using **-f** flag

Syntax: git rm -f <filename>

Git Ignore:

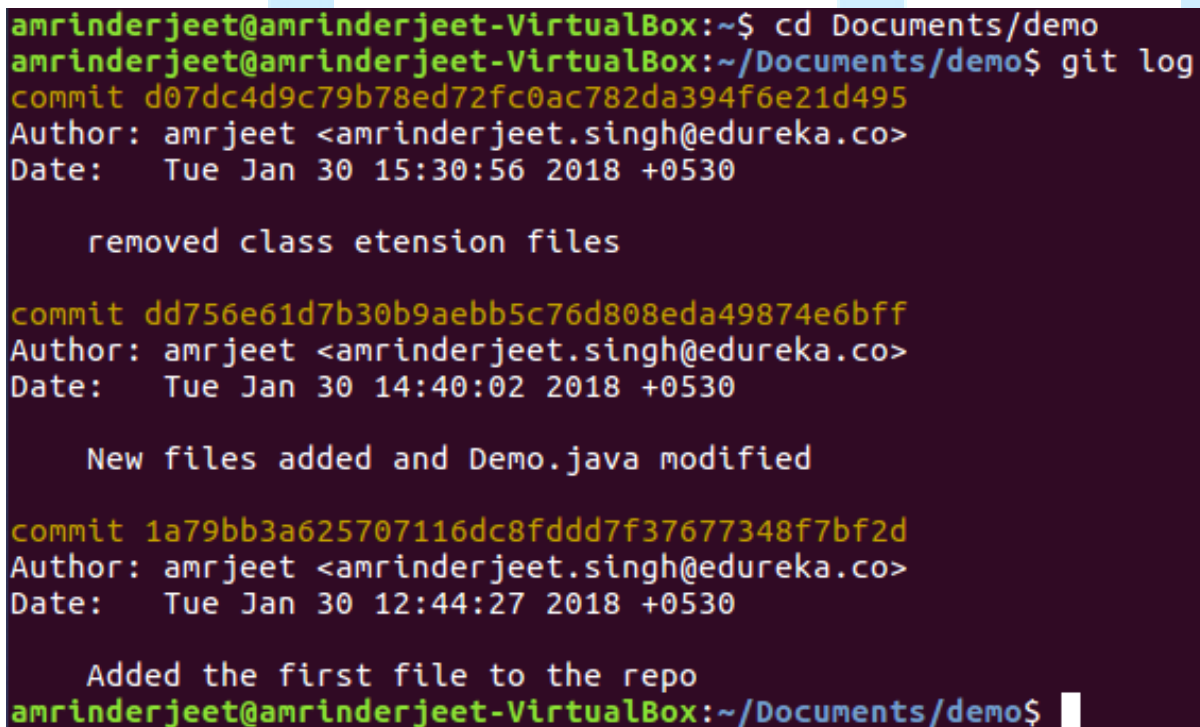
- Create a gitignore file inside the git repo using
Syntax: `gedit .gitignore`



```
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ gedit .gitignore
#all .class files
*.class
```

Git Log:

- The **git log** command shows all the commits so far on the current branch
Syntax: `git log`



```
amrinderjeet@amrinderjeet-VirtualBox:~$ cd Documents/demo
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ git log
commit d07dc4d9c79b78ed72fc0ac782da394f6e21d495
Author: amrjeet <amrinderjeet.singh@edureka.co>
Date: Tue Jan 30 15:30:56 2018 +0530

    removed class extension files

commit dd756e61d7b30b9aebb5c76d808eda49874e6bff
Author: amrjeet <amrinderjeet.singh@edureka.co>
Date: Tue Jan 30 14:40:02 2018 +0530

    New files added and Demo.java modified

commit 1a79bb3a625707116dc8fddd7f37677348f7bf2d
Author: amrjeet <amrinderjeet.singh@edureka.co>
Date: Tue Jan 30 12:44:27 2018 +0530

    Added the first file to the repo
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$
```

Git Amend:

- Git amend can be used to make changes to the last commit message

Syntax: `git commit --amend`

```
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ git commit --amend
[master 11cf392] removed .class extension files
Date: Tue Jan 30 15:30:56 2018 +0530
2 files changed, 0 insertions(+), 0 deletions(-)
delete mode 100644 Demo.class
delete mode 100644 Demo2.class
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$
```

- Commit tags provide an alias for commitID
Syntax: `git tag --a <annotation> --m <message>`

- You can also view all the tags you have created

Syntax: `git tag`

```
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ git tag -a v1.3 -m 'Version 1.3'
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ git tag
v1.3
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$
```

- Adding a tag to one of the previous commits
Syntax: `git tag --a <annotation> <commit id> --m <message>`

- Commit id can be obtained from `git logs`

- All these tags can be viewed in `git`

Syntax: `git show <tag-name>`

```
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ git tag -a v0.3 11cf392d -m 'Added tag to a previous commit'
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$ git show v0.3
tag v0.3
Tagger: amrjeet <amrinderjeet.singh@edureka.co>
Date:   Wed Jan 31 11:51:32 2018 +0530

Added tag to a previous commit

commit 11cf392dc4307d8446fdc4419e8d9c3674549385
Author: amrjeet <amrinderjeet.singh@edureka.co>
Date:   Tue Jan 30 15:30:56 2018 +0530

    removed .class extension files

diff --git a/Demo.class b/Demo.class
deleted file mode 100644
index fa53ecb..0000000
Binary files a/Demo.class and /dev/null differ
diff --git a/Demo2.class b/Demo2.class
deleted file mode 100644
index 81c13a3..0000000
Binary files a/Demo2.class and /dev/null differ
amrinderjeet@amrinderjeet-VirtualBox:~/Documents/demo$
```

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