

7th April 2021

Previous day:-

- Terminal commands:-
 - man(manual)
 - touch
 - rm(remove)
 - echo
 - cat
 - cp(copy & paste)
 - mv(cut & paste)
 -
- MCQs

Version Control System

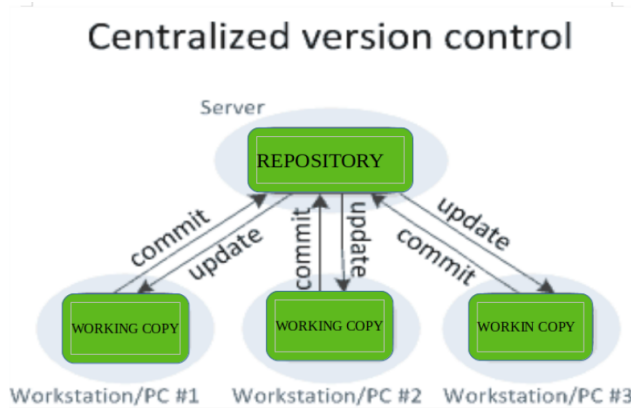
Lecture Flow:-

- VCS
- how to make a github repository
- git status
- git add
- git commit -m "message"
- git diff
- git push
- git log
- MCQs

Topics and Explanations

Version Control System

So what is the Version Control System (VCS)? Version control systems are a category of software tools that help in recording changes made to files by keeping a track of modifications done to the code.



There were many versions available or used to be available such as Windows 95, Windows 2003, Windows vista, Windows 7, 8, 8.1, 10.

VCS can do following things like:-

- save and track all the versions
- it is able to go back or front to any version
- where multiple people can split the work

VCS which we can use are:-

- mercurial (no longer in use)
- SVN (sub version, outdated)
- Git (latest in use)

git bash (windows): CUI for basically programmers to run git on their own laptops.

linux: `sudo apt-get install git` (code for downloading git in your linux)

Repository: Main Project Folder

How to make a github repository folder?

Step 1:- make a folder that you want it to be a repository.

Step2:- go inside it

Step3:- type command <git init>

```
(base) priyesh@priyesh-Inspiron-5567:~/attainu $ mkdir robin
(base) priyesh@priyesh-Inspiron-5567:~/attainu $ cd robin
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin $ ls
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin $ la -a
.
..
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin $ git init
Initialized empty Git repository in /home/priyesh/attainu/robin/.git/
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin $
```

to check if you have made repository successful do the following as shown in the below image


```
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin $ ls -a
.  ..  .git
```

if the folder has a ".git" folder that means you have successfully created it.

.git :- is basically a folder which saves and tracks all the changes that you have made in your project.

So how to un-initialize the git repository ?

```
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin $ ls -a
.  ..  .git
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin $ rm -rf .git/
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin $ ls -a
.  ..
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin $
```



1. git status :-

[click here for reference](#)

- The git status command tells the current state of the repository.
- The command provides the current working branch. If the files are in the staging area, but not committed, it will be shown by the git status. Also, if there are no changes, it will show the message no changes to commit, working directory clean.

unstaging area/untracked and not committed

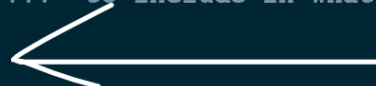
```
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin $ git status
On branch master

No commits yet

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

assignment/

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



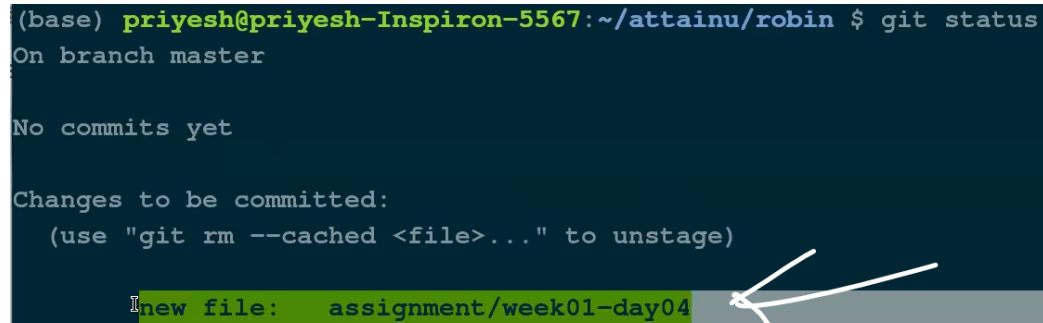
staging area/tracked and committed

```
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin $ git status
On branch master

No commits yet

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

    new file:   assignment/week01-day04
```



2. git add :-

[click here for reference](#)

To add the content from tracked to untracked this command updates the index using the current content found in the working tree, to prepare the content staged for the next commit.

- To add a particular file, use the following command: `$ git add path/to/file`
- To add all changed files, use the following command: `$ git add .`
- To add all changed files of a directory, use the following command: `$ git add path/to/directoryOnly`

Before adding into index i.e before running above command, if you do `$ git status` all changes files listed with red colour [default colour if you haven't changed it] once you add it into index by using above commands and then check `$ git status` all added files are ready for commit and visible in green

3. git commit -m "message" :-

[click here for reference](#)

The most common option used with git commit is the -m option. The -m stands for message. When calling git commit, it is required to include a message. The message should be a short

description of the changes being committed. The message should be at the end of the command and it must be wrapped in quotations "".

```
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin $ git commit -m "Create Week01-Day04 assignment"
[master (root-commit) 98a3539] Create Week01-Day04 assignment
1 file changed, 1 insertion(+)
create mode 100644 assignment/week01-day04
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin (master) $
```

4. git diff :-

[click here for reference](#)

The git diff is a multi-function Git command, which is used to compare changes committed in Git. Particularly, with the help of this command, you can take two input data sets and output the modifications between them. While executing, this command runs a diff function on Git data source. Commonly, it is used in combination with git status and git log commands for analyzing the state of a git repository.

```
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin (master) $ git diff
diff --git a/assignment/week01-day04 b/assignment/week01-day04
index 940b7f4..fae07aa 100644
--- a/assignment/week01-day04
+++ b/assignment/week01-day04
@@ -1,2 @@
 Easy Question
+Hard Question
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin (master) $
```

5. git push :-

[click here for reference](#)

In its simplest definition, the Git push command can be taken as uploading the content to the remote repository.

```
Welcome@Welcome-PC MINGW64 /e/git-demos/push-test (master)
$ git push origin master
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 302 bytes | 302.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/git-test-jaz/push-tst.git
45c8cf7..8aac6ed master -> master
```

6. git log :-

[click here for reference](#)

Git log is a command used in Git to access the *history of commits* that the repository has gone through.

```
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin (master)$ git log
commit 98a3539665f4e7017ecfe692b6f96dbd5df8e3b9 (HEAD -> master)
Author: never2average <priyesh.sriv2017@gmail.com>
Date: Thu Apr 8 22:13:19 2021 +0530

    Create Week01-Day04 assignment
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin (master)$
```

MCQs:-

Which of the following is the correct way to initialize a new Git repository?

Attempted - 30
(54.55%)

EASY



☐ git add .

☐ git commit

3.33%

☒ git init

96.67%

You can type `git status` at any point while in a git-controlled directory to check the status of all your files.

Attempted
- 27
(49.09%)

EASY



- | | |
|---|--------|
| <input type="checkbox"/> True | 66.67% |
| <input checked="" type="checkbox"/> False | 33.33% |

Which of the following commands will stage your entire directory and every non-empty directory inside your current directory?

Attempted
- 34
(61.82%)

EASY



- | | |
|--|--------|
| <input type="checkbox"/> <code>git status all</code> | 11.76% |
| <input type="checkbox"/> <code>git commit all</code> | 17.65% |
| <input checked="" type="checkbox"/> <code>git add .</code> | 73.53% |

We've just created a new file called `index.html`. Which of the following will stage this one file so we can commit it?

Attempted
- 34
(61.82%)

EASY



- | | |
|---|--------|
| <input checked="" type="checkbox"/> <code>git add index.html</code> | 70.59% |
| <input type="checkbox"/> <code>git commit index.html</code> | 20.59% |
| <input type="checkbox"/> <code>git add new</code> | 8.82% |