08th April 2021:-

Previous day:-

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

Git & Github Basics:-

Lecture Flow:-

- what is github?
- git rm --cache <filename> / git rm --cache <filename>
- git clone
- git diff HEAD
- git push
- git pull
- Merge conflict
- git remote add origin <url>

Topics and Explanation:-

For all the all users:-
the first time you install git bash[windows] / terminal[linux / macOS], you need to run 3 commands first i.e.,

1. git config --global user.name “github_username/fullname”
2. git config --global user.email “github_email”
3. git config --list [only to verify if the first 2 commands run successfully]

1. git rm --cache <filename> / git rm --cache -r <folder_name:-

click here for reference
When working with Git, you may want to **add some new lines to your gitignore files**.

However, when listing the files to be committed in your staging area, you realize that some of the ignored files are **still showing up**.

In this case, you may need to **clear your Git cache**. In other words, remove a file / folder and make it untracked.

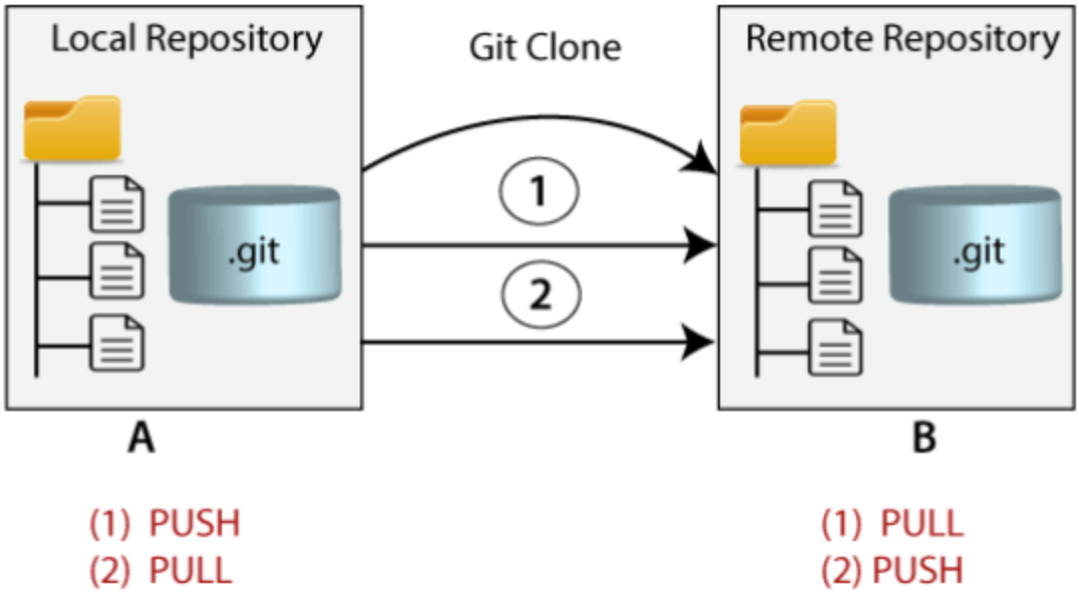
2. What is Github ? >:-

click here for reference

GitHub is a code hosting platform for collaboration and version control. GitHub lets you (and others) work together on projects. In other words it is a version / flavour of git made available over the internet with the GUI functionality.

3. git clone :-

click here for reference In Git, cloning is the act of making a copy of any target repository. The target repository can be remote or local. You can clone your repository from the remote repository to create a local copy on your system. Also, you can sync between the two locations.



4. git diff HEAD :-

click here for reference

It will show all changes to tracked files. If you have all changes staged for commit, then both commands will output the same.

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
```

We made some changes in our offline and we pushed it to remote.

What if we are working in a team and if somebody else makes changes on the remote, will it be directly updated on your local? No, we have to do it manually with the help of “git pull” which we will study in the next topic.

Note:- Remote is github, local is your pc.

6. git pull :-

click here for reference

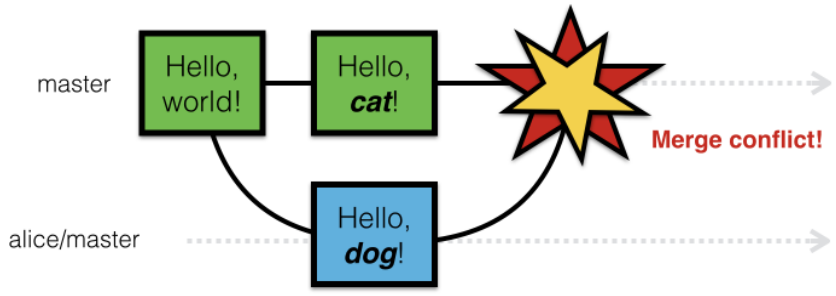
```
(base) priyesh@priyesh-Inspiron-5567:~/attainu/kalam-core-cse-resources (main)$
git pull
remote: Enumerating objects: 4, done.
remote: Counting objects: 100% (4/4), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), done.
From https://github.com/priyesh-attainu/kalam-core-cse-resources
   325c4a6..f4451f1  main       -> origin/main
Updating 325c4a6..f4451f1
Fast-forward
 Assignment-Week02 | 4 ++++
 1 file changed, 4 insertions(+)
 create mode 100644 Assignment-Week02
(base) priyesh@priyesh-Inspiron-5567:~/attainu/kalam-core-cse-resources (main)$
```

The git pull command is used to fetch and download content from a remote repository and immediately update the local repository to match that content.

7. Merge conflict:-

click here for reference

Merge conflicts occur when competing changes are made to the same line of a file, or when one person edits a file and another person deletes the same file.



To resolve a merge conflict caused by competing line changes, you must choose which changes to incorporate from the different branches in a new commit.

```
(base) priyesh@priyesh-Inspiron-5567:~/attainu/kalam-core-cse-resources (main)$
git push
Username for 'https://github.com': priyesh.srivastava@attainu.com
Password for 'https://priyesh.srivastava@attainu.com@github.com':
To https://github.com/priyesh-attainu/kalam-core-cse-resources
 ! [rejected]        main -> main (fetch first)
error: failed to push some refs to 'https://github.com/priyesh-attainu/kalam-cor
e-cse-resources'
hint: Updates were rejected because the remote contains work that you do
hint: not have locally. This is usually caused by another repository pushing
hint: to the same ref. You may want to first integrate the remote changes
hint: (e.g., 'git pull ...') before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --help' for details.
(base) priyesh@priyesh-Inspiron-5567:~/attainu/kalam-core-cse-resources (main)$
```

For example, if you and another person both edited the file *styleguide.md* on the same lines in different branches of the same Git repository, you'll get a merge conflict error when you try to merge these branches. You must resolve this merge conflict with a new commit before you can merge these branches.

8. git remote add origin <url>:-

click here for reference

When developers want to take their local Git repository and share it with another developer or push the code into a cloud-based distributed version control service, such as GitHub or GitLab, they can use the “git remote add origin <url>”command.

To check if the url is added or not we use this command called “git remote -v”, which tells us where and from we are pulling and pushing.

```
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin (master)$ git remote -v
origin  https://github.com/priyesh-attainu/robin (fetch)
origin  https://github.com/priyesh-attainu/robin (push)
(base) priyesh@priyesh-Inspiron-5567:~/attainu/robin (master)$
```

First time you are pushing:

1. add a remote: git remote add origin <url of the github repo>
2. git push -u origin master