**GIT Introduction**

* **Git** is a free and open-source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.
* Git tracks the changes you make to files, so you have a record of what has been done, and you can revert to specific versions should you ever need to.
* Git also makes collaboration easier, allowing changes by multiple people to all be merged into one source.
* **Stash** & **commit** where ‘stash’ – 1st level of commit and ‘commit’ is 2nd level of commit

[Commit Level-1 : 1st ‘commit’ will first look for the files in the ‘stash’ - ‘commit’ commits the code in the stash

Commit Level-2 : 1st add the code to the ‘stash’ and can commit the code from the stash and place in the ‘commit’ -> move to GitHub

* **Clone** -> If 1st user left the code unfinished by finishing only 1 section out of 5 then the next day 2nd user needs to start from where the 1st user has stopped.
* **Clone** means to extract the code present in the repository for the first time.
* **Branching ->** If multiple users are working on the same project, create different branches instead of using master branch(main). Then finally merge every sub branches into the master branch.

**INSTALLATION**

1. <https://git-scm.com/download/win> - Download & Install
2. Search for the GIT in the start menu
3. Click on GIT -> opens CMD -> **winget install --id Git.Git -e --source winget**
4. Go to <https://github.com/> -> Sign up free – Create an account
5. Create Repository -> Give the name for the repository
6. Click on Create Repository
7. Refer GIT basic commands - <https://confluence.atlassian.com/bitbucketserver/basic-git-commands-776639767.html>
8. Open CMD
9. Create username & EMAIL ID using ‘git’ command -> Username: git config --global user.name "nandhna” -> Password: git config --global user.email [nandhnananz25@gmail.com](mailto:nandhnananz25@gmail.com)
10. Create a folder (say ‘GITStuff’) -> copy any code program
11. Open cmd -> Go to the location of the GITStuff –> cd **GITStuff** -> **git init [ #Initialising git ]**
12. CMD -> **git add \* [Adding everything (that’s why \* used in the cmd command) the file to the stash [commit level.1]**
13. CMD -> **git status [# To see which all are added]**
14. CMD -> **git commit -m "first commit" [Commit level.2]**
15. CMD -> **git remote add origin** [**https://github.com/Nandhna/GitDemo.git**](https://github.com/Nandhna/GitDemo.git) **[this http link from the GitHub webpage (**in quick setup column)
16. CMD -> git push origin master {first time - one tab will open – sign in Github – give credentials]
17. Go to GitHub – Check for the repository
18. **TO CLONE A FRESH REPOSITORY –**

I. Go to CMD -> cd .. (Come back to the original path I.e., remove ‘GitStuff’) -> git clone <https://github.com/Nandhna/GitDemo.git> (This link is getting from – Go to Repository – Click on Repository – Get the link from https option)

1. Check if a folder named ‘GitDemo’ is created in the folder.

**Import Git Repository into PYCHARM**

1. Open PYCHARM -> File -> Settings -> Expand Version Control
2. Open Git -> Set git.exe downloaded path -> OK
3. Open Git -> Add Account -> Open Git with Token -> Generate -> Navigate to Login page of Git -> Login -> Navigate to down of the page -> Generate Token
4. Copy the Token -> Paste it on the PYCHARM -> Apply -> Ok
5. Click on VCS – Get from Version Control -> New Tab opened for GitHub
6. Give the URL of the Git - <https://github.com/Nandhna/GitDemo.git> -> Clone
7. Make changes in the GitDemo(Cloned one)
8. Open Cmd – Go to GitDemo Location in the folder – Copy path – paste in the CMD
9. Give **git add \*** -> **git status** [#will show the changes] -> **git commit -m "this is committed from Asian Timezone guy"**
10. To Push the entire updated code to GitHub

a. **git remote add origin** <https://github.com/Nandhna/GitDemo.git>

b. **git push origin master**

1. To take the latest code -> **git pull origin master**

**BRANCHING IN GIT**

1. To create new branch -> **git checkout –b**
2. To check which branch are we now -> **git branch**
3. To move the branch from develop to master -> **git switch master**
4. Making changes in the code in the develop branch
5. Go to CMD -> git add \* -> git status -> git commit -m "Architect Asian Development"(GitDemo) -> **git push origin develop**
6. Go to the location of the Master branch(GITStuff) -> **git pull origin develop**
7. **git commit -m "American development team**" -> **git checkout develop -> git add\* -> git status - - git push origin develop - git checkout master - git pull origin master - git merge develop**