What is git and github?

Git:

1)Git is a version control system that tracks changes in the files. The name itself indicates that Global Information Tracker. Each and every modification is being monitored by the Git while developing a particular application.

2)The main principle of Git is it stores the current version along with the previous versions code. Git has two main functionalities:

a) Version Control System.

b)Collaboration.

3)Multiple developers can work on a single project through collaboration i.e., integrating the code using Git.

4)It is being developed by Linus Torvalds in the year 2005, for storing multiple versions of a software and a single project can be accessible to multiple developers to work on it. Git is a distributed version control system.

5)No internet connection is required to use the functionalities of the git. The interaction of git with the system is being done only through the Command Line Interface.

GitHub:

1)GitHub is cloud based platform to store repositories in a virtual database server. It is being developed and owned by Microsoft.

2)There are two kinds of repositories in github for privacy and security reasons Public and Private.In public repositories any individual can contribute to it to improve the features or efficiency.

3) It is being done by cloning the repository into local machine using the command git clone <github repository url>

4)To add a local repository into remote repository i.e. GitHub, that involves multiple steps.

Steps:

Git init -Initialises a local repository to track the changes in the file.

Git add . – It adds the file to the working directory.

Git commit -m “ Message”- Adds file to the staging area

Git remote add origin <Remote repo url>

Git push origin main – Pushes the file to the remote repository.

What is CVCS and DVCS ?

Centralised Version Control System( CVCS):

1)Centralised version controls system is a type of version control system, where it does not store the previous versions of the developed but only stores the current version to track changes.

2)In centralized version control system all the source code is available in only a single location, if the the server crashes then it is not possible to retrieve the code which leads to the application down.

3) In CVCS the developers just need to pull the files and makes changes in the files and pushes back to the remote repository.

4)To overcome the drawbacks of CVCS the DVCS comes into existence. Some of the Centralised Version Control Systems are SVN.

Distributed Version Control System:

1)Distributed version control system is a version control system where the files are distributed manner for development process. Each and every individual contributor holds the complete project files.

2)It does not required any kind of networks to work, can be accessed with out network connectivity and is possible to make changes.

3)Git is a type of Distributed Version Control System, where all the previous versions along with the current running version of the source code will be stored.

4)Different types of commands are available to perform various kinds of operations on the files in Git. Examples of DVCS are Git,JIRA.

Create a project of any and push the project

Create 3 branches and 5 tags

Create a Keygen and push using ssh

Create a sub branch in agit and switch from subbanch to mainbranch(hit: use merge concept)

What is the importance of git checkout?

Checkout:

1) In git checkout command is used to switch from one branch to the other branch while performing modification in the file contents.

2)Every command starts with the git <command\_name> .

3)Git checkout branch1: The tracker changes from the current working branch to the branch1 to track the changes in it.

4)git checkout -b branch2 : This commands creates a new branch and switch to that created branch from the current branch, which the operations are performed.

5) An alternate for the git checkout is git switch . The git switch command also used to switch from one branch to the other.

What is the importance of git merge?

Git merge:

1) Git merge plays an important role while working on large projects and if there is any need for pulling the requests from remote repository to the local repository.

2)Git merge combines branches if there are any modifications done by some other developers or contributors.

3) It merges the current branch with the branch required to merge. Ex: git merge branch1. In this case the current working branch is merged with the branch1.

4)Git merge is being used while performing the pull requests operations. It is used along with the git fetch command.

What is Linux and how is it different from other operating systems?

1)Linux is an open source operating system which is being developed by Linus Torvalds in the year 1995.

2)It is an open source anyone can have access to it and can contribute to it for modifications. It

3)It provides high level of security compared to any other operating systems. MacOs is developed on the Linux OS.

4)Any kind of operations can be done in the linux irrespective of the any other policies.

5)Interaction with linux can be done only through Command Line Interface.

6)The files and directories are stored in tree like structure and it is a case sensitive operating system.

7)The linux OS is mainly used for industrial purposes for developing the applications through security and unlimited resources.

8)It is user-friendly OS but difficult to handle for ne users. And it one of the most used OS in the IT sector due to it’s an open source.

What are the basic Linux commands for file operations?

Linux has multiple command to work with files. For every operation there exists multiple commands to interact with them. The most used Linux commands for file operations are:

Pwd : the pwd command returns the current working directory

Ls : it returns the list of folders and file in the current working directory

Cd: for changing the directory from one folder to another cd command is used.

Mkdir: It creates an empty folder in the directory.

Rmdir: Deletes the directory if it is empty.

Touch: It is used to create an empty file and also changes the timestamp of an existing file.

Cat: It displays the content of the files along with it is possible to create and write in to the new file using cat command.

Echo: displays the text in the Command Line Interface.

Nano: Opens the file in the nano editor.

Vi: Opens the file in the vim editor.

Grep: Searches for patterns in the files.

Less: It displays the content in an interactive manner.

Find: Checks for the file in the directories.

Ln: Generates symlink to the files

Wc: word count command returns the number of lines , number of words and numbers of characters in a file.

What is the difference between chmod and chown?

1)The main difference between chmod and chown commands are the chmod command is used to change or modify the permissions of the file i.e., who can have access to open , delete and modify the operations on the existing files.

2) While the chown command is used to switch between the owners i.e., from root user to ec2user or vice-versa for creating and modifying the files.

Explain the use of grep command.

1) The grep command is used to search for a particular pattern in an existing file. The syntax of grep is:

grep “pattern” file\_name

2) It is mainly applicable while searching for a specific characters or patterns in the files for performing the operations.

How do you schedule a cron job in Linux?

Explain the basic features of the Linux OS.

1)Linux is an open-source operating system and does not ask for any kind of subscriptions.

2)It used for performing operations in a very large environments or organizations for effective development of the applications.

3)It provides a very high level of security than any other operating system.

4)It is possible to perform any kind of operations or developments in the Linux other than any other OS as there will be no modifications are done.

**What are the major differences between Linux and Windows?**

**Linux:**

**1)Linux is an open-source all its operations are done without any costs.**

**2)Linux does not have Graphical User Interface all the operations are done in the command line interface.**

**3)It is not owned by any companies, It is being developed by Linus Torvalds in the year 1995.**

**4) The files in linux are stored in tree structure.**

**5)Mainly useful for industrial applications rather than personal use.**

**6)Linux has / forward slash in the file directories.**

**Windows:**

**1)Windows is a subscripted Operating system with limited operations.**

**2) It possess a very high level of Graphical User Interface for effective use.**

**3) It is being owned by the Microsoft.**

**4)The files in it are stored in the Directories like c\users:**

**5)It is mainly personalized for personal use.**

**6)The windows has backward slash \ in the file location dircetories.**

**Define the basic components of Linux.**

**1)The most important component in Linux is kernel. It acts as the heart for the operating system in allocating resources to the processes.**

**2) The kernel is responsible for every process running the system and take over the runtime and memory allocation for them.**

**What is the chmod command in Linux, and how do you use it?**

**The chmod command is used to change the permissions to the files, for accessing and modifying the files. As linux provides higher level of security all the users can not have access to the files. Only certain user have acess to them. In order to make them available to the coworkers the permission of the files are being modified.**

**What are the most important Linux commands?**

**Linux has multiple commands to perform operations on the files. Some of the most important from them are:**

**Sudo: sudo command is an superuser commands and any kind of operations are done by the super user.**

**History: the history command displays the history of operations.**

**Pwd: it is an important command to know the current working directory.**

**Chown: the chown command is used to change the owner from either root to user or from user to root.**

**Chmod: the chmod command is used for permission of the files who can access and modify the contents of the file.**

**How do you create,remove and copy files in linux?**

**Create:**

**To create a file there are multiple ways :**

**Using touch: touch <file\_name>**

**Using echo: echo “Helo” > file\_name. It creates and writes the content to the file.**

**Using cat: cat > file\_name . It creates the file and writes to the file. After writing in to the file press ctrl+o to save the enter then ctrl+x to exit from the editor.**

**Remove a file:**

**To remove or delete a file rm command is used.**

**Syntax: rm file\_name or sometimes rm file\_name –force**

**Copy: cp file\_name /destination\_path**

**It copies the file to the destination path directory.**

**What is ssh?**

**1)SSH refers to the secure shell. It is a private key to provide privacy and security to the files. By using ssh key it secures the data to an extent.**

**2)SSH key provides more security than https security.**

**3)It is mainly used for collaboration if any other user wants to access they can access it through the private ssh key. It has two keys public and private.**