

### **1. What is git and github?**

**Answer:** GitHub is an online platform for managing and sharing code using Git. It allows to store, track, and collaborate on projects efficiently.

### **2. What is CVCS and DVCS ?**

**Answer:**

#### **(1)CVCS:**

CVCS defined Centralized Control Version System .

There is a single central server where all project files and history are stored. Developers connect to this server to pull the latest version of the code and push their changes.

Developers must stay connected to the server to make changes. If the server goes down, no one can access the project.

Example: Subversion (SVN), Microsoft TFS.

#### **(2)DVCS:**

DVCS defined Distributed Version Control System

In DVCS, every developer has a full copy of the repository, including the entire history. This means they can work offline and sync their changes with the central repository when needed.

Developers can work offline.

Faster operations because changes are tracked locally.

Safer if the main server is lost, the project still exists on multiple local copies.

Example: Git

### **3. Create a project of any and push the project**

### **4. Create 3 branches and 5 tags**

### **5. Create a Keygen and push using ssh**

### **6. Create a sub branch in git and switch from subbranch to mainbranch(hint: use merge concept)**

**Answer:**

- Create and Switch to Sub-Branch:  
`git checkout -b sub-branch feature-1`
- Merge Sub-Branch to Main:  
`git checkout main`  
`git merge sub-branch`  
`git push origin main`

**7. What is the importance of git checkout?**

**Answer :** git checkout allows switching between branches, reverting files, and restoring old commits.

**8. What is the importance of git merge?**

**Answer:** git merge used to changes from one branch to another branch, ensuring seamless collaboration.

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

**Answer:** Linux is an open-source operating system based on UNIX, it runs on many devices, including computers, servers, and mobile phones. It's a free alternative to other operating systems like Microsoft Windows and macOS. known for stability, security, and flexibility.

Differences from other operating system:

- Free & Open-source **vs.** Windows, macOS
- More Secure than Windows
- Customizable & Lightweight

**10. What are the basic Linux commands for file operations?**

**Answer:**

- `touch file.txt` – it creates a empty file
- `cat file.txt` – it displays data of file
- `cat >file.txt` – also used to create a file and insert to data
- `cat file.txt file.txt>filemedge` – one more thing it is used to create file and medge two files

- cp file.txt file2.txt – it is used to copy the file
- mv file.txt text2.txt – move the file
- ls -l - List files in detail
- rm file.txt – delete the file
- vi file.txt- used to insert the data

### **11. What is the difference between chmod and chown?**

**Answer:**

**(1)chmod (Change Mode):**

Used to change file permissions (read, write, execute) for users, groups, and others.

Syntax:

Chmod 777 file.txt – it gives full access for all

**(2)chown (Change Owner):**

Used to change the ownership of a file or directory.

Syntax: chown user file.txt - Change owner to user

### **12.Explain the use of grep command.**

**Answer:** grep stands for Global Regular Expression Print and is commonly used for text processing and searching. The grep command in Linux is used to search for specific patterns or strings in files.

Syntax: (1) grep "grep" file.txt or filename

(2) grep "g" filename

### **13.How do you schedule a cron job in Linux?**

**Answer:**

A **Cron Job** is a scheduled task in Linux that runs automatically at specified intervals. It is managed by the **cron daemon**

`crontab -e`

#### 14.Explain the basic features of the Linux OS.

Answer:

- Open Source & Free – Source code is freely available.
- Multi-User & Multitasking – Multiple users and processes run simultaneously.
- Security & Stability
- Portability – Runs on various hardware (PCs, servers, IoT).
- Command-Line Interface (CLI) – Powerful terminal for scripting & automation.
- File System Support
- Networking & Server Capabilities – Used for hosting, cloud, and DevOps.
- Package Management

#### 15.What are the major differences between Linux and Windows?

Answer:

Linux vs Windows:

- **Cost** – Linux is free, Windows requires a paid license.
- **Customization** – Linux is highly customizable, Windows is limited.
- **Security** – Linux is more secure with fewer viruses, Windows is more vulnerable.
- **Performance** – Linux is lightweight, Windows needs more resources.
- **Software** – Windows supports more commercial apps, Linux focuses on open-source.
- **Gaming** – Windows is better for gaming, Linux support is improving.
- **Usage** – Linux is used for servers & development, Windows is common for personal & business use.

**16. Define the basic components of Linux.**

**Answer:**

- **Kernel** – Core of Linux OS
- **Shell** – Interface for users
- **File System** – Organizes files

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

**Answer:**

The **chmod** (change mode) command is used to modify file and directory permissions in Linux.

Syntax:

```
chmod 755 file.txt
```

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

**Answer:**

1. **cd** - Change directory.

Example: `cd /home/user/Documents`

2. **whoami** - Displays the currently logged-in user.

Example: `whoami`

3. **mkdir** - Creates a new directory.

Example: `mkdir new_folder`

4. **rmdir** - Removes an empty directory.

Example: `rmdir empty_folder`

5. **pwd** - Prints the current working directory.

Example: `pwd`

6. **touch** - Creates an empty file.

Example: touch newfile.txt

7. cat - Displays content of a file or concatenates files, and also used to create a file to direct insert data , it's used to medge two files

Example: cat file.txt

8. vi - Opens the vi text editor.

Example: vi file.txt

9. cp - Copies files or directories.

Example: cp file1.txt file2.txt

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

**Amswer:**

- touch file.txt - Create
- rm file.txt -Remove
- cp file.txt newfile.txt - Copy

**20.What is ssh?**

**Answer:** SSH (Secure Shell) is a protocol for secure remote access to servers.

Syntax: ssh user@remote-server