General Instructions : Write the answers in a Notepad or doc file and save it in Training\_yourname folder and inform your Mentor.

This set of Questionnaire focuses on “CLI and Git Workflow”

**1. Which of the following adds all new files to local repository ?**

**a) git add .**

b) git add -u

c) git add -A

d) None of the Mentioned

This command is used to add all new files to the local repository.

Explanation:You should do this before committing.

**2. Point out the correct statement :**

**a) You don’t need GitHub to use Git**

b) CLI can help you to organize files and folders

c) Navigation of directory is possible using CLI

d) None of the Mentioned

Explanation:CLI stands for Command Line Interface.

**3. Which of the following command updates tracking for files that are modified ?**

a) git add .

**b) git add -u**

c) git add -A

d) None of the Mentioned

This command updates the tracking for modified files and stages them for the next commit. It does not stage untracked files or changes in the working directory.

Explanation:The git add command adds a change in the working directory to the staging area.

**4. Which of the following command is used to give message description ?**

**a) git command -m**

b) git command -d

c) git command -message

d) None of the Mentioned

This command is used to add a message description to a commit in Git. The -m flag is followed by the commit message enclosed in quotes.

Explanation:This only updates your local repository.

**5. Point out the wrong statement:**

**a) You need GitHub to use Git**

b) GitHub allows you to share repositories with others

c) GitHub allows you to access others repositories

d) All of the Mentioned

Git is a distributed version control system that can be used independently of GitHub. GitHub is a web-based platform for hosting Git repositories and collaborating with others, but it is not a requirement for using Git locally on your machine.

Explanation:GitHub can store remote copy of your repository.

**6. Which of the following command allows you to update the repository ?**

**a) push**

b) pop

c) update

d) None of the Mentioned

This command is used in Git to update a remote repository with the changes made in the local repository. It sends the committed changes to the remote repository, keeping them in sync.

Explanation:The git branch command is your general-purpose branch administration tool.

**7. Which of the following is correct way of creating GitHub repository in to well labelled commits ?**

**a) Fork another user’s repository**

b) Pop another user’s repository

c) Zip another user’s repository

d) None of the Mentioned

Forking a repository on GitHub creates a copy of another user's repository under your own GitHub account. Once forked, you can clone the forked repository to your local machine, make changes, and create well-labeled commits. Afterward, you can propose these changes back to the original repository through a pull request. This allows for collaborative development while maintaining a clear history of well-labeled commits.

Explanation:A fork is a copy of a repository.

**8. Which of the following command is used to squash the commits ?**

**a) rebase**

b) squash

c) boot

d) All of the Mentioned

The rebase command in Git is used to modify commit history. It can be used to squash commits, among other things. Squashing commits involves combining multiple commits into a single commit to create a cleaner and more logical commit history.

Explanation:In Git, there are two main ways to integrate changes from one branch into another: the merge and the rebase.

**9. Which of the following statement would create branch named as ‘sanfoundry’ ?**

**a) git checkout -b sanfoundry**

b) git checkout -c sanfoundry

c) git check -b sanfoundry

d) None of the Mentioned

This command creates a new branch named "sanfoundry" and switches to that branch in a single step. The -b flag is used to indicate that a new branch should be created, and "sanfoundry" is the name of the new branch.

Explanation:A branch in Git is simply a lightweight movable pointer to one of these commits.

**10. branch command is used to determine which branch you are currently in.**

**a) True**

b) False

**11. How will you differentiate develop, master, feature and hotfix branch ?**

**Ans :**

The "develop" branch is where ongoing development occurs, with features and bug fixes merged in before reaching a stable state. The "master" branch represents the latest stable release, serving as a snapshot of production-ready code. "Feature" branches are created for developing specific features, allowing isolated work before integration into the develop branch. The "release" branch is a snapshot of the code before a planned release, undergoing final testing and bug fixing. "Hotfix" branches address critical issues in the current release, enabling swift corrections without disrupting ongoing development.

**12. Write sequence of commands to follow before modifying a file from directory and after saving the changes.**

**Ans :**

Before modifying a file in a Git repository, navigate to the project directory and ensure you are on the correct branch by using git checkout. Pull the latest changes from the remote repository with git pull and check the status with git status. After saving your changes to the file, use git add to stage the modifications, followed by git commit to commit the changes with a meaningful message. If working collaboratively, pull any updates from the remote repository again using git pull and resolve any merge conflicts if necessary. Finally, push the changes to the remote repository with git push. This sequence ensures a smooth and collaborative version control process.

**13. Give advantages and disadvantages of Version Control System.**

**Ans :**

**Advantages of Version Control System (VCS):**

* **History Tracking**: VCS allows tracking changes made to files over time, providing a detailed history of modifications. This historical perspective aids in understanding project evolution and facilitates the identification of issues.
* **Collaboration**: VCS supports collaboration by enabling multiple developers to work on the same project concurrently. It allows seamless integration of changes made by different team members, promoting a structured and organized development process.
* **Branching and Merging**: VCS allows the creation of branches, enabling developers to work on isolated features or bug fixes without affecting the main codebase. Merging these branches back into the main line is made easier, allowing for efficient collaboration and feature development.
* **Revert to Previous States**: In case of errors or unwanted changes, VCS allows reverting to previous states of the project. This ability to roll back changes helps maintain code integrity and stability.
* **Parallel Development**: VCS enables parallel development on different features or bug fixes, speeding up the overall development process. Developers can work independently on their tasks and merge changes when ready.

**Disadvantages of Version Control System (VCS):**

* **Learning Curve**: Implementing and mastering a VCS can have a steep learning curve, especially for individuals new to version control concepts. Understanding commands, workflows, and resolving conflicts may require some time and training.
* **Complexity**: Large and complex projects may introduce complexities in managing branches, merges, and conflicts. In such cases, maintaining a clear versioning structure may become challenging.
* **Storage Overhead**: Versioning every change can lead to increased storage requirements, especially for projects with frequent updates. However, advancements in VCS systems aim to optimize storage usage.
* **Merge Conflicts**: When multiple developers work on the same file concurrently, conflicts may arise during the merging process. Resolving these conflicts can be time-consuming and requires careful attention to prevent code inconsistencies.