Git and Github

Assignment Questions

1. What is Git?

Ans- Git is a version control system that allows developers to track changes made to their code ,collaborate with others,and revert to previous versions if necessary.

Question 2 What do you understand about the term ‘version control system’?

Ans-

A version control system (VCS) is a software tool that helps developers manage changes made to source code over time. It allows developers to track changes, collaborate with others and revert to previous versions if necessary. With a VCS, developers can work on different versions of a codebase simultaneously, and merge their changes together when they are ready. This makes it easier to manage large,complex projects, and help avoid conflicts when multiple people are working on the same code. Some common version control systems include Git mercurial, and Subversion (SVN).

Question 3. What is GitHub?

Ans-

GitHub is a web-based platform that uses Git as its version control system. It is primarily used for hosting and managing source code for software development projects, but can be used to host any type of project that uses Git for version control.

GitHub provides a variety of features that makes it easy to collaborate on projects, including code review, issue tracking, and project management tools. It also allows developers to easily share their code with others, and to discover and use code created by others .

Question 4. Mention some popular Git hosting services .

Ans-

Some popular Git hosting services include:

GitHub: A web-based platform that allows developers to host and manage their code, as well as collaborate on projects with others. It also provides a variety of features such as code review, issue tracking , and project management tools.

1. GitLab: A web-based Git repository manager that provides source code management (SCM), continuous integration, and more. It allows developers to host and manage their code, and collaborate on projects with other,
2. Bitbucket: A Git and Mercurial hosting service that provides a web-based interface for managing and collaborating on code. It is designed for small terms and organization .
3. SourceForge: A Web-based platform that provides Git hosting,bug tracking , and projects management tools for open- source projects.

Question 5. Different types of version control systems.

Ans-

There are two main types of version control system: centralized and distributed.

1. Centralised Version Control System (CVCS): In a Centralised Version Control System, there is a single “central” repository that contains all the versioned files, and all developers check out files from that central repository . for Ex- CVCS include Subversion (SVN) and perforce.
2. Distributed Version Control System (DVCS): In a distributed version control system, each developer has their own local repository, which contains a copy of the project’s history. Developers can commit changes to their local repository and push or pull changes to and from other repositories. Ex- DVCS include Git and Mercurial.

Question 6. What benefits come with using Git?

Ans-

Using GIt as a version control system can provide several benefits:

1.Collaboration: Git makes it easy for multiple developers to work on the same

Codebase simultaneously. Developers can push their changes to a shared

Repository, and other developers can pull those changes and merge them into

their own local copies of the code.

2. Versioning, Branching and Merging-

3. Speed and offline work

4. Accessibility: With Git , developers can easily share their code with others and

Discover and use code created by others .

5. Open-source: Git is open-source software, which means that it is free to use,

Modify and distribute. This makes it accessible to a wide range of users and

Developers.

Question 7. What is a Git repository?

Ans-

A Git repository is a directory that contains all the files and metadata for a project

, as well as history of all changes made to those files. It is a data structure used by

Git to track and manage changes to a set of files, typically source code for a

software project . Repositories can be both local or remote. Git allows for

Collaboration on projects by keeping track of different versions and allowing

Multiple people to contribute and make changes to the project files.

Question 8. How can you initialize a repository in Git ?

Ans-

We can initialize a repository in git by using the command ‘git init’,. This

Command creates a new ,empty repository in the current directory.

You can also initialize a repository in an existing directory that contain files, In

This case , you’ll need to move the existing files into the new repository, and

then Commit them .

Here’s an example of initializing a new repository in an existing directory:

$git init

$git add .

$git commit -m “Initial commit”