Report for work case 1

1. Git is a distributed version control system that allows you to track changes in files and repositories.

Git is used for a variety of purposes, including:

Software development: Git is a popular choice for software developers because it allows you to track changes in code, quickly recover from bugs, and collaborate with other developers.

Document management: Git can be used to track changes in documents such as reports, presentations, and other files.

Website content management: Git can be used to track changes in website files such as HTML, CSS, and JavaScript.

File storage: Git can be used to store files such as photos, music, and videos.

The main actions that are performed in Git can be divided into three groups:

Creating and managing repositories: A Git repository is a place where files and their change history are stored. To create a new repository, you can use the git init command. To manage a repository, you can use the commands git add, git commit, git push, and git pull.

Making changes to files: To make changes to a file in a repository, you can use the git add command. After making changes, you must save them using the git commit command.

Tracking changes: To track changes in files, you can use the commands git log, git diff, and git checkout. The git log command outputs the change history in files. The git diff command outputs a list of changes between two versions of a file. The git checkout command allows you to restore a file to a specific version.

2. A commit in Git is a snapshot of the state of a repository at a particular point in time. It contains all the changes that have been made to files since the last commit. Commits allow you to track changes in files because they store the entire change history.

Commits consist of several elements:

Commit hash: This is a unique identifier that is used to identify the commit.

Commit author: This is the name and email address of the author of the commit.

Commit date and time: This is the date and time when the commit was created.

Commit message: This is a message that describes the changes that were made to the commit.

Changes: This is a list of changes that have been made to files since the last commit.

How to create a commit in Git

To create a commit, you can use the git commit command. This command takes the commit message as an argument. For example, to create a commit with the message "Added a new file", you can use the following command:

git commit -m "Added a new file"

How to use commits to track changes in files

Commits can be used to track changes in files in a variety of ways. For example, you can use them to:

Restore files to a specific version: The git checkout command allows you to restore a file to a specific version.

Compare two versions of a file: The git diff command allows you to compare two versions of a file to see what changes were made.

Create branches: Branches are forks of a repository that allow you to work on different versions of code simultaneously. Commits can be used to create branches to track changes made to a specific version of code.

Conclusion

Commits are an important tool for tracking changes in files. They allow you to store the change history and restore files to a specific version.