

### Project Based learning for Saturday.

Create your account on GitHub and save simple C++ program in GitHub.

I. Write your username and repository name created in Github.

ANS: Username: **Abhitrambadia**

Repository: **Program-List-1**

II. Write URL of Sample C++ program file Uploaded in Github.

ANS: <https://github.com/Abhitrambadia/Program-List-1/tree/76683f204bbfd5d76f2639d8edcd0438cd32896b>

III. Write Sample C++ program uploaded in Github.

ANS:

**Write a C++ Program to enter two numbers and find their sum.**

```
#include<iostream>
```

```
using namespace std;
```

```
int main() {
```

```
    int num1,num2;
```

```
    cout<<"Enter two numbers ::";cin>>num1;cin>>num2;
```

```
    cout<<"The sum ::"<<num1+num2;
```

```
    return 0;
```

```
}
```

IV. Write name of other sites for alternative of Github.

ANS:

- **GitLab**: Offers both a cloud-hosted service and a self-hosted version. It provides features like GitHub, including repository hosting, CI/CD pipelines, and issue tracking.
- **Bitbucket**: Provides both Git and Mercurial version control. It offers free private repositories for small teams and integrates well with other Atlassian tools.

- **SourceForge:** One of the oldest platforms for hosting open-source software. It offers version control, bug tracking, and project management tools.
- **Launchpad:** Developed by Canonical, it's particularly popular in the Ubuntu and Debian communities. It supports Git and Bazaar version control systems.
- **Gitea:** A lightweight self-hosted Git service. It's a good option for smaller teams or individuals who want to host their own Git server.
- **Gogs:** Another self-hosted Git service similar to Gitea, designed to be easy to set up and lightweight.
- **GitKraken:** While not a hosting platform itself, GitKraken is a popular Git client that can integrate with various Git hosting providers.
- **RhodeCode:** Offers repository management with support for Git, Mercurial, and Subversion. It provides enterprise features like access control and code review.
- **Phabricator:** A suite of web-based software development collaboration tools that includes code repositories, code review, and task management.
- **AWS CodeCommit:** If you're already using Amazon Web Services, CodeCommit can be a seamless choice for hosting private Git repositories.

#### V. Define Git repository.

**ANS: A Git repository is a data structure used by the Git version control system to store and manage a collection of files, their version history, and associated metadata. In simple terms, it's a centralized location where you can track changes to your codebase or project over time.**

Here's a breakdown of the components and concepts associated with a Git repository:

- **Snapshot History:** Records changes to files over time, storing snapshots of the project.
- **Commits:** Snapshots are called "commits," each with a unique identifier and info like author, time, and message.
- **Branches:** Different lines of development created for new features or fixes.
- **Merging:** Combining changes from one branch into another.

- **Remote Repositories:** Hosted copies on servers like GitHub, GitLab, or self-hosted servers.
- **Clone:** Creating a local copy of a repository on your machine.
- **Pull:** Updating your local repository with remote changes.
- **Push:** Sending your local changes to the remote repository.
- **Forks and Pull Requests:** Making personal copies and suggesting changes to the original repository.
- **Tags:** Marking specific points in history, like releases or milestones.

A Git repository organizes code changes, facilitates teamwork, and enables efficient version control.