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: **shivamkasundra**

Repository: **Program-list-1**

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

ANS: https://github.com/Shivamkasundra/Program-list-1/tree/e817840eebb312208a04effb0c477af1cb480d20

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.