

## Experiment no. 2

**Aim:** To understand version control system/ source code management, install git and create a github account

### Theory:

Version Control System (VCS) / Source Code Management (SCM):

A **Version Control System** (VCS) is a tool that helps developers manage changes to their codebase over time. It tracks revisions of files, allows developers to collaborate on code without overwriting each other's work, and provides a history of changes. This makes it easier to revert to earlier versions, compare code differences, and maintain an organized workflow.

There are two main types of VCS:

1. **Centralized VCS:** The code is stored in a central repository. Developers check out and check in changes to this single location.
2. **Distributed VCS:** Every developer has a full copy of the code repository, allowing for greater flexibility and offline work. Git, a distributed VCS, is the most popular system used today.

### Git:

**Git** is a distributed version control system that allows multiple developers to work on a project simultaneously. It tracks changes to files, creates snapshots of the entire repository at different points in time, and supports branching and merging, making it ideal for collaborative work.

Basic Git Concepts:

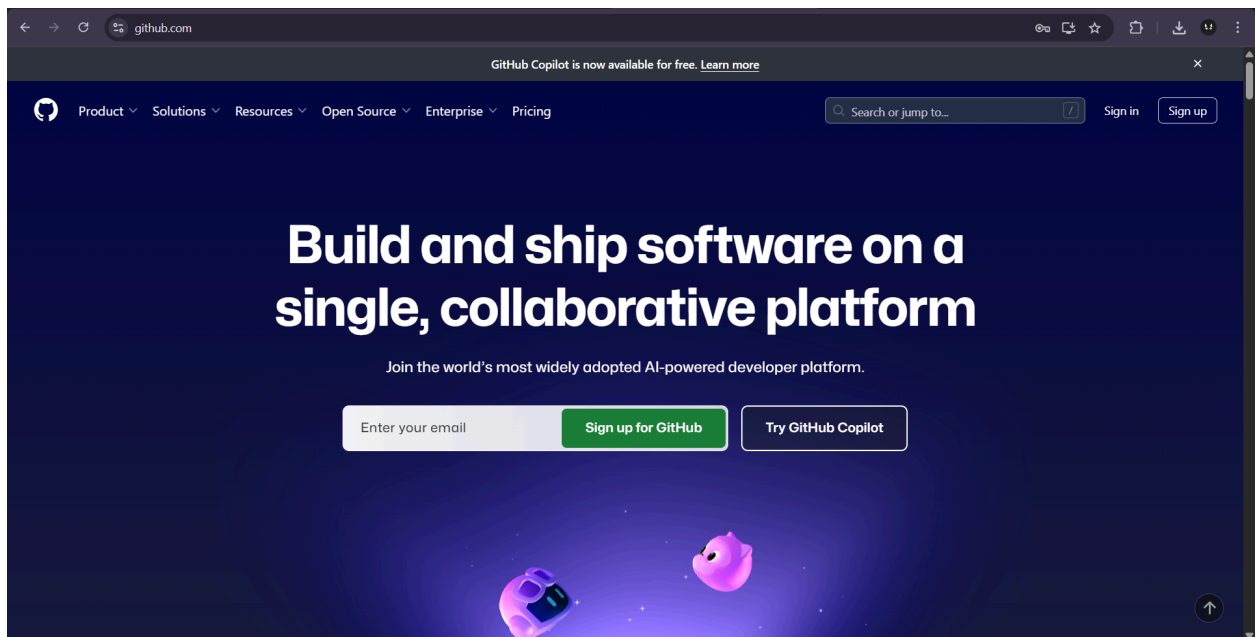
- **Repository:** A project's directory where all code and version history are stored.
- **Commit:** A snapshot of changes made to the repository.
- **Branch:** A separate line of development where changes can be made without affecting the main project.
- **Merge:** Combining changes from different branches back into a main branch.
- **Clone:** A copy of the repository, typically from a remote source like GitHub.
- **Push/Pull:** Sending and receiving updates between local repositories and remote repositories.

## GitHub

**GitHub** is a cloud-based hosting service for Git repositories. It allows developers to store their code online, collaborate with others, and manage issues, pull requests, and documentation. GitHub also provides an interface to interact with Git repositories, making it easier for developers to contribute to projects.

### Steps to create GitHub account:

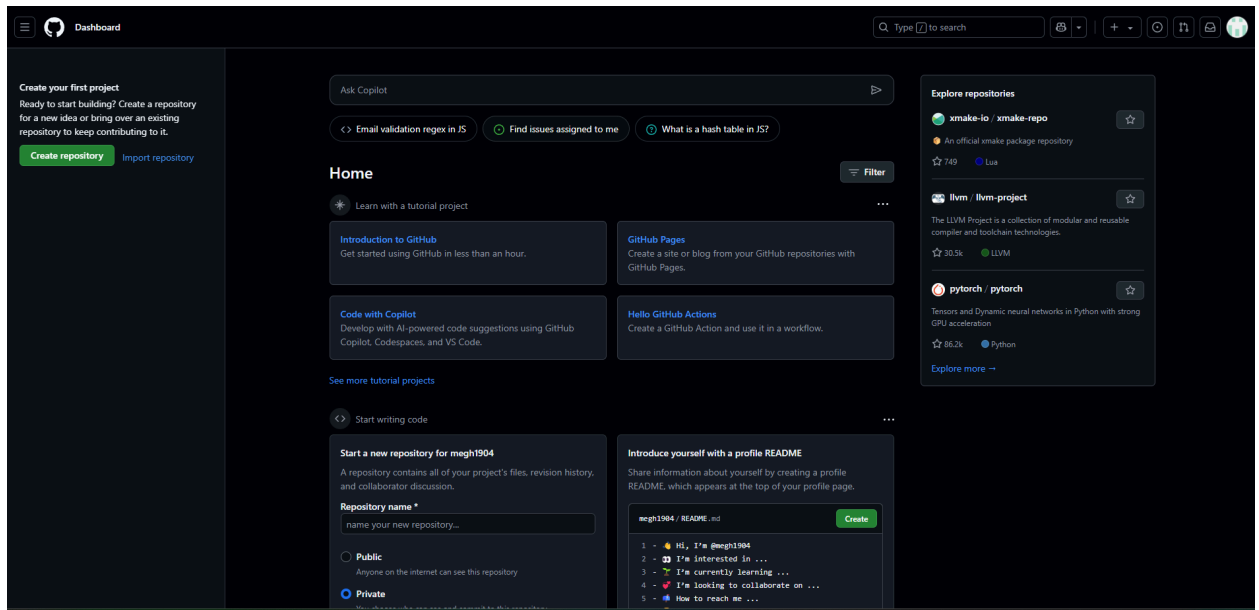
1. Go to [github.com](https://github.com) and click **Sign Up**.



2. Enter your **username, email, and password**.



## 5. Log in to your new GitHub account.



**Conclusion:** Hence we have successfully learnt version control system/ source code management, install git and create a github account