

# Department of Information Technology

**Academic Year: 2021-22 Semester: V**

**Class / Branch: IT Subject: DevOps Lab**

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# Experiment No. 3

**Aim: To understand and perform Version Control System / Source Code Management, install git and create a GitHub account.**

### **Software Version Control**

A Version Control System (VCS) enables you to efficiently manage and collaborate on code changes with others. Version control systems provide many benefits, including:

* The ability to review and restore old versions of files.
* The ability to compare two versions of the same file to identify changes.
* A record or log of who made changes at a particular time.
* Mechanisms for multiple users to collaboratively modify files, resolve conflicting changes, and merge the changes together.

There are several open-source version control systems available including:

* CVS
* SVN
* Git
* Mercurial

### **Introducing Git**

Git is the most popularly used version control system. For this reason, you use Git as the version control system for all the exercises in this course.

Git can convert any local system folder into a Git repository. Although you have many of the benefits of version control, your Git repository only exists on your local system.

To share your repository with another collaborator, you must host the repository on a code repository platform.

There are many free code repository platforms, including:

* GitHub
* GitLab
* BitBucket
* SourceForge

Each commit contains metadata to help you find and load this snapshot at a later time:

* **commit message** - A high level summary of the file changes in the commit.
* **timestamp** - The date and time that the commit was created.
* **author** - A field that describes who created the commit.
* **commit hash** - A unique identifier for the commit. A commit hash consists of 40 hexadecimal numbers. If a Git command requires a commit hash to perform an operation, then you can abbreviate the commit to seven characters.

### **Installing Git**

Git is an open source version control system that is available for Linux, MacOS, and Windows systems. Before you can use Git, you must install it.

In a browser, navigate to <https://git-scm.com/downloads> and follow the directions for your operating system.

**How to create a github account:**

Open a web browser, and navigate to https://github.com/. If you are not logged in to GitHub, then click Sign in in the upper-right corner.

**Conclusion:**

**In this experiment students have understood how to create a Git repository. How to use version control to collaborate and manage application source code.**