# How Visual Studio makes version control easy with Git.

Git is the most widely used **modern version control system**. With Git, you can track the code changes you make over time, and you can revert to specific versions. So, whether you're a professional developer or if you’re learning how to code, Visual Studio's Git experience can be very useful to you.

**Start with Git & GitHub**

1. Create GitHub new account. - [GitHub](https://github.com/)
2. Create a ***new Public repository***, name it Student1.

A screenshot of a browser

Description automatically generated

A screenshot of a computer

Description automatically generated

Add team members:

A screenshot of a computer

Description automatically generated

## Start with Git & GitHub in Visual Studio

Version control with Visual Studio is easy with Git. You can work remotely with the Git provider of your choice, such as GitHub or Azure DevOps,o r, you can work locally with no provider at all.

To get started using Git with Visual Studio:

* Open Visual Studio. *Continue without code*.

A screenshot of a computer

Description automatically generated

* Clone repository  to your local machine.

A screenshot of a computer

Description automatically generated

* Otherwise, easily create a new Git repository and add your code.

If you're new to Git, the <https://git-scm.com/> website is a good place to start.

A screenshot of a computer

Description automatically generated

Select GitHub -> Student1.

A screenshot of a computer

Description automatically generated

When you clone a repository or open a local repository, Visual Studio switches to the Git context. Solution Explorer loads the folder at the root of the Git repository, and scans the directory tree for any viewable files.

Create a new Project.

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a computer application

Description automatically generated

A screenshot of a computer

Description automatically generated

Use **LINQ to SQL** to add ProductDB.mdf database to the ProductWebApp.

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

***Rebuild your project.***

Open Solution explorer and show all files. Note: **bin, obj, and packages** are “hidden folders”.

A screenshot of a computer

Description automatically generated

Next, we will include “hidden folders” in the current project!

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

Rebuild your project and add it (commit it) to the GitHub Repository.

A computer screen shot of a computer

Description automatically generated

Open Git Changes View. Add notes. Click “Commit All”.

A screenshot of a computer

Description automatically generated

Click on A screenshot of a computer

Description automatically generated to “**Push** “ your project to the GitHub repository.

A screenshot of a computer

Description automatically generated

Open GitHub in the Web browser.

A screenshot of a computer

Description automatically generated

Open ProductWebApp.

Expected result:

A screenshot of a computer

Description automatically generated

**Create a Git branch in Visual Studio**

You are empowered to multi-task and experiment with your code through branches. If you or your team works on multiple features at the same time, or if you'd like to explore ideas without affecting your working code, ***branching*** is very helpful.

The recommended ***Git workflow uses a new branch for every feature or fix that you work on.***

It's easy to create a new branch in Visual Studio; all you have to do is base it off an existing branch.

1. To start, make sure you've got a previously created or cloned repo open.
2. From the **Git** menu, select **New Branch**.

A screenshot of a computer

Description automatically generated

In the **Create a new branch** dialog box, enter a branch name.

1. In the **Based on** section, use the drop-down list to choose whether you want to base your new branch off an existing local branch or a remote branch.
2. The **Checkout branch** checkbox, which is on by default, automatically switches to the newly created branch. Toggle this option if you want to remain in the current branch.

A screenshot of a computer

Description automatically generated

Open Git Changes. And Commit/Push project to the GitHub repository.

A screenshot of a computer

Description automatically generated

Once you create a new branch and switch to it, you can start working by changing existing files or by adding new ones and then committing your work to the repository. To learn more about making a commit in Visual Studio and to better understand file states in Git, refer to the [Make a commit](https://learn.microsoft.com/en-us/visualstudio/version-control/git-make-commit?view=vs-2022) page.

Git is a distributed version control system, meaning that all the changes made so far are local only changes. To contribute these changes to a remote repository, you must [push those local commit(s) to a remote](https://learn.microsoft.com/en-us/visualstudio/version-control/git-push-remote?view=vs-2022).

If you are working in a team or if you are using different machines, you will also need to continually fetch and pull new changes on the remote repository. To learn more about managing Git network operations in Visual Studio, refer to the [Fetch, pull, push, and sync](https://learn.microsoft.com/en-us/visualstudio/version-control/git-fetch-pull-sync?view=vs-2022) page.

## Repository management & collaboration

However, there are times when it makes more sense to focus on your Git repository. For example, you might need to get a good picture of what your team has been working on, or copy a commit from a different branch, or just clean-up your outgoing commits. Visual Studio includes powerful [repository browsing](https://learn.microsoft.com/en-us/visualstudio/version-control/git-browse-repository?view=vs-2022) and collaboration features that eliminate the need to use other tools.

To help you focus on your Git repository, Visual Studio has a **Git Repository** window, which is a consolidated view of all the details in your repository, including local and remote branches and commit history. You can access this window directly from either **Git** or **View** on the menu bar or from the status bar.

### **Browse and manage Git repositories.**

To learn more about how you can use the Git Repository window in Visual Studio to browse and manage your Git repository, refer to the following pages:

* [Browse a repo](https://learn.microsoft.com/en-us/visualstudio/version-control/git-browse-repository?view=vs-2022)
* [Manage a repo](https://learn.microsoft.com/en-us/visualstudio/version-control/git-manage-repository?view=vs-2022)

More: [Create a branch - Visual Studio (Windows) | Microsoft Learn](https://learn.microsoft.com/en-us/visualstudio/version-control/git-create-branch?view=vs-2022)