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GIT, GITHUB & VSCODE

CHEATSHEET

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Topics

1. Getting started with vscode

What is Visual Studio Code?

VS Code is a free open-source code editor for the development and debugging of modern cloud and web applications which is available for free on Linux, OS X and Windows.

Versions

Version	Date Released
1.74.3	
1.74.2	Nov 2022
174.1	
1.73.1	Oct 2022
172.2	Sept 2022
172.1	
1.71.2	Aug 2022
1.71.1	
1.70.3	July 2022
1.70.2	
1.70.1	

To learn of other versions visit: https://code.visualstudio.com/updates/?wt.mc_id=studentamb_219615

Installation or Setup

On Windows

- Download the Visual Studio Code installer for Windows.
- Once it is downloaded, run the installer (VSCodeSetup-version.exe). This will only take a minute.

By default, VS Code is installed under C:\Program Files (x86)\Microsoft VS Code for a 64-bit machine.

Tip: Setup will optionally add Visual Studio Code to your %PATH%, so from the console you can type 'code .' to open VS Code on that folder.

You will need to restart your console after the installation for the change to the %PATH% environmental variable to take effect.

On Mac

- Download Visual Studio Code for Mac.
- Double-click on the downloaded archive to expand the contents.
- Drag Visual Studio Code.app to the Applications folder, making it available in the Launchpad. •
- Add VS Code to your Dock by right-clicking on the icon and choosing Options, Keep in Dock.

You can also run VS Code from the terminal by typing 'code' after adding it to the path

Installation or Setup in Linux

Debian and Ubuntu based distributions

The easiest way to install for Debian/Ubuntu based distributions is to download and install the .deb package (64-bit) either through the graphical software center if it's available or through the command line with:

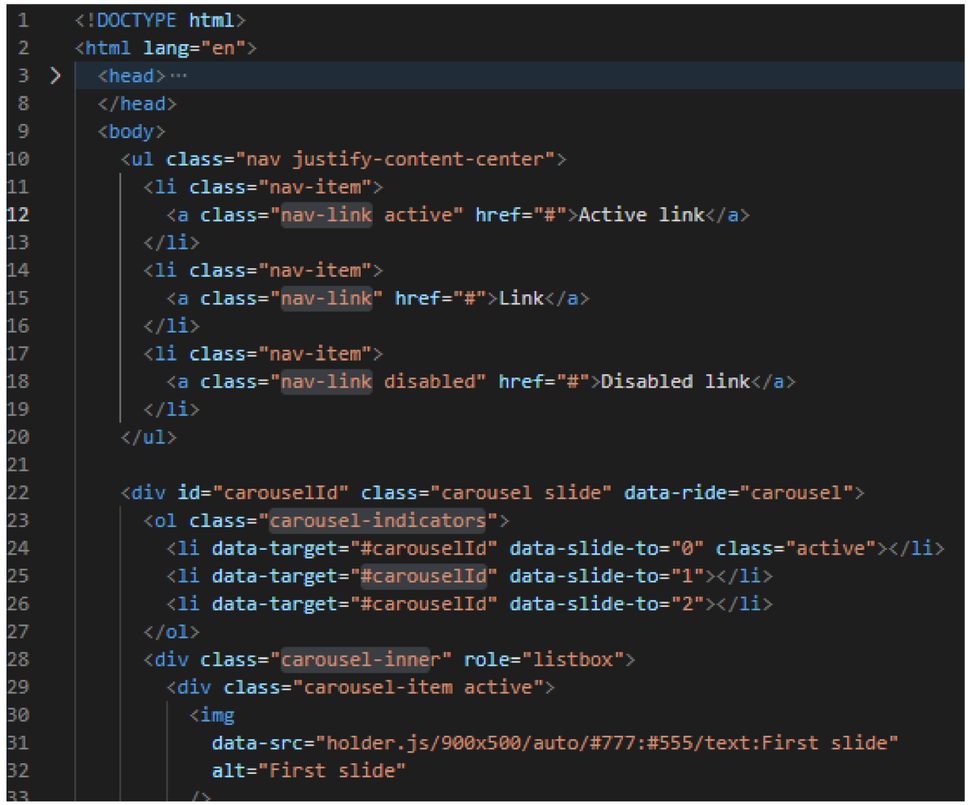
```
sudo dpkg -i <file>.deb
sudo apt-get install -f # Install dependencies
```

https://code.visualstudio.com/docs/setup/linux/?wt.mc_id=studentamb_219615

2. VSCode Tips and Tricks

1. Multiple Cursors

Visual Studio lets you work on different sections of a file at the same time. This can come in handy when you need to perform many identical changes. To create a new cursor, simply click on the respective area in the text editor while holding down the **alt** key. From that point onwards any keyboard input will be applied to all cursor positions. It is also possible to select multiple sections in your code

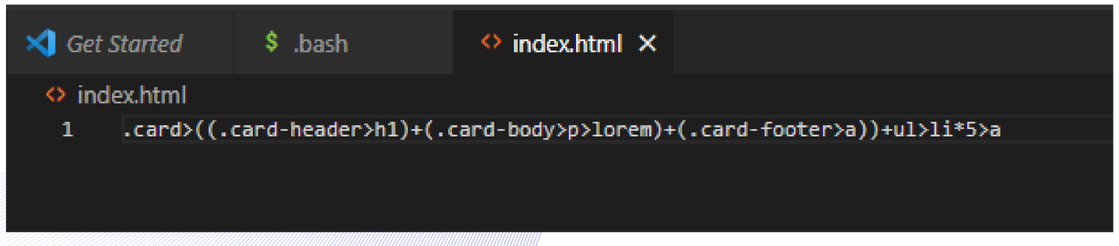


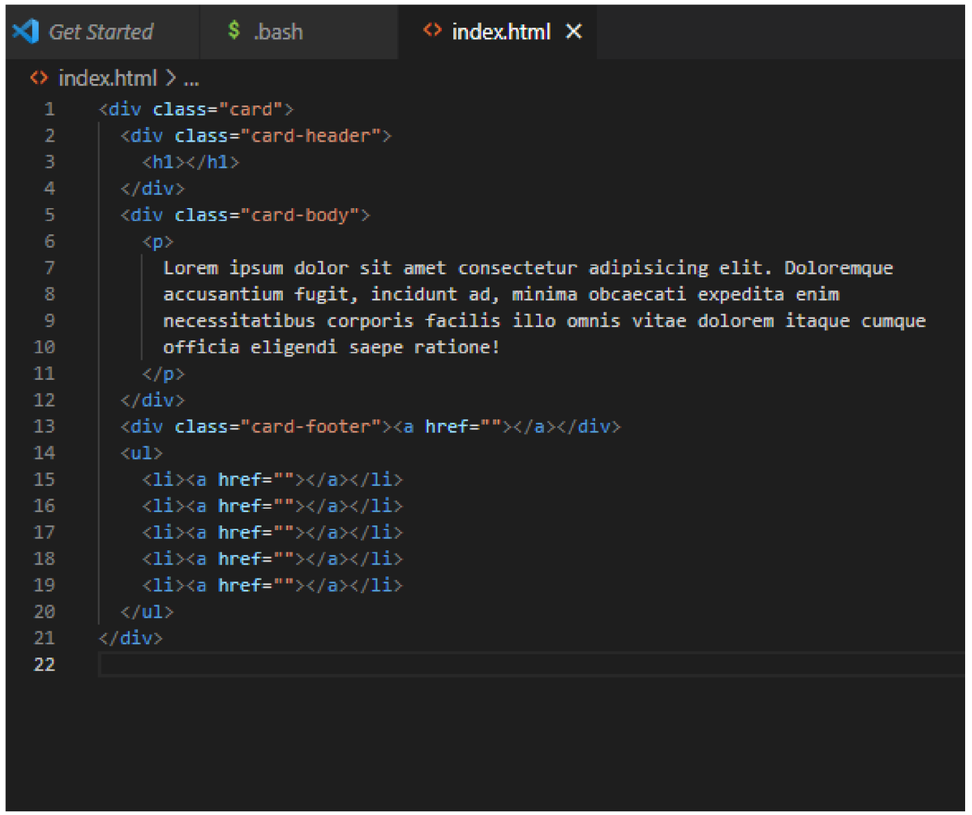
https://code.visualstudio.com/docs/getstarted/tips-and-tricks/?wt.mc_id=studentamb_219615

2. Emmet Snippets

VS Code supports Emmet snippets. Emmet snippets are expressions that are converted to e. g. HTML or XML after pressing the tab key.

Find all sorts of Emmet constructs at http://docs.emmet.io/cheat-sheet/





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3. Keyboard Shortcut

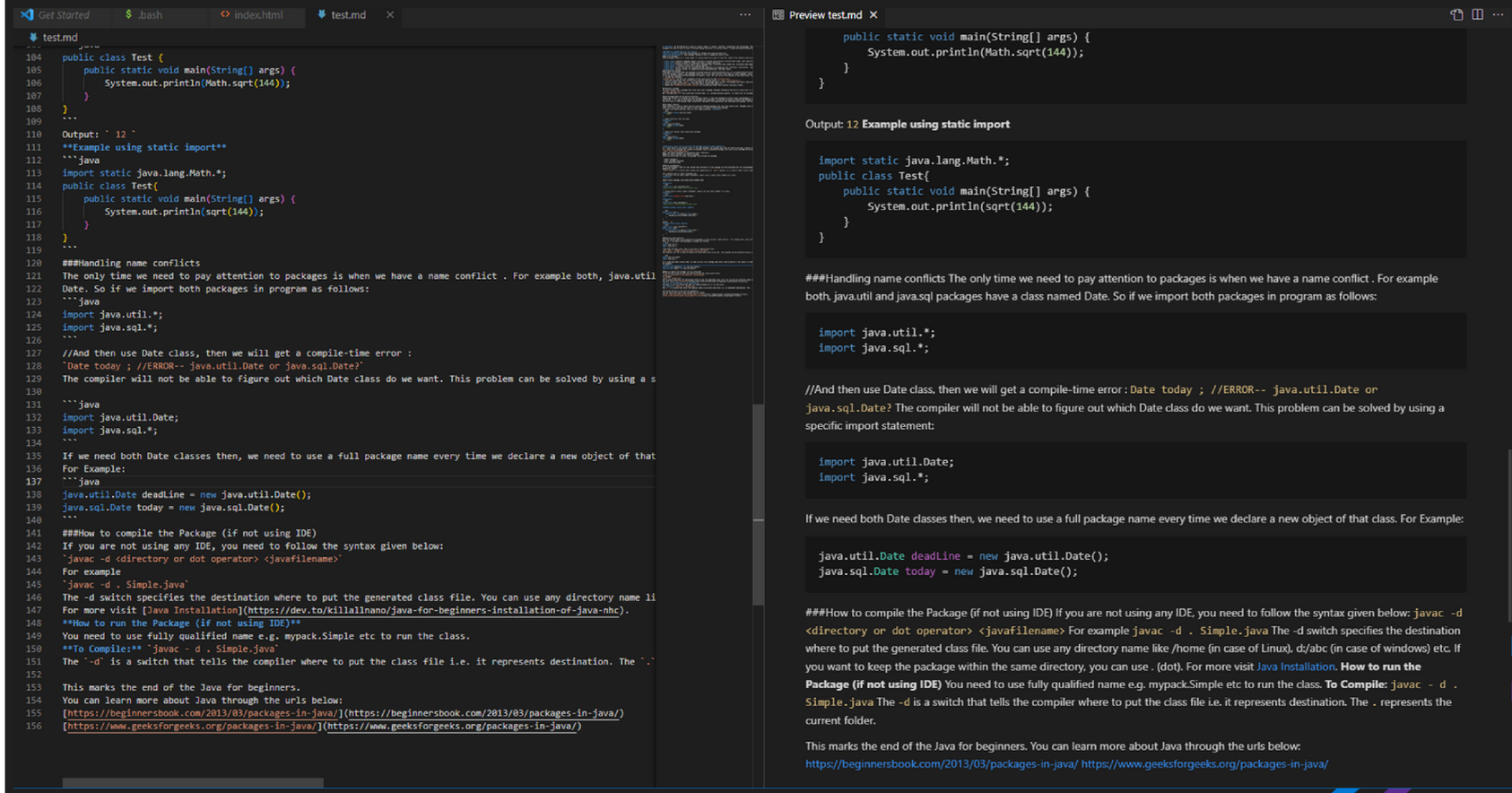
VSCode supports various keyboard shortcuts, which allow developers to quickly and efficiently perform common actions and tasks within the code editor. These shortcuts can be used to navigate the interface, write and edit code, debug, and more. Some examples of VSCode keyboard shortcuts include:

- Ctrl + P (or Command + P on Mac) to quickly open a file by name
- Ctrl + Shift + P (or Command + Shift + P on Mac) to open the Command Palette, which allows developers to access various commands and features
- Ctrl + Shift + Tab to switch between recently used files
- Ctrl + Shift + N to open a new window
- Ctrl + D to select the next occurrence of a word
- Ctrl + Shift + L to select all occurrences of a word
- Ctrl + F (or Command + F on Mac) to find text within a file
- Ctrl + H (or Command + Option + F on Mac) to find and replace text within a file
- Ctrl + Shift + I (or Control + Shift + I on Mac) to open the integrated developer console
- Ctrl + / (or Command + / on Mac) to comment or uncomment selected lines of code

4. Markdown Preview

Visual Studio offers a markdown preview function that can be opened beneath the text. VS Code is using the GitHub Flavoured Markdown which offers additional functions over the original markdown format. This comes in handy especially for GitHub “read me” documents

Using **Ctrl+Shift+V**, you can switch between Markdown and Preview. **Alt+Z** toggles word wrapping, which can also be done using the View menu.



5. Visualizing CSS Selectors

CSS selectors define what HTML elements to style with the subsequent properties. Selectors can become pretty complicated – and be it because sometimes you just might not be too familiar with one of them that you are using less frequently.

Visual Studio Code solves this problem by presenting a preview for the current selector that shows what HTML elements would have to be like to be covered by the selector.

```
<section class="article">
  <p>
```

```
section.article > p {
    color: green;
}
```

```
<h1>
<p>
  <color important="true">
    …
      <element>
```

```
h1 + p > color[important=true] * {
    color: red;
}
```

```
<p id="MainText">
```

```
p#MainText {
    color: green;
}
```

```
<section class="footer">
  …
    <a :hover>
```

```
section.footer a:hover {
    text-decoration: underline;
}
```

3. Git

Learning Objectives

1. Learn what version control is
2. Understand distributed version control systems, like Git
3. Create a new Git project and configure it
4. Make and track changes to code by using Git
5. Use Git to recover from simple mistakes

What is version control?

A version control system (VCS) is a program or set of programs that track changes to a collection of files. One goal of a VCS is to easily recall earlier versions of individual files or of the entire project. Another goal is to allow several team members to work on a project, even on the same files, at the same time without affecting each other's work.
Another name for a VCS is a software configuration management (SCM) system.

Features of VCS

- VCS allows you to track and manage changes made to a project
- You can view changes made to your project, when they were made, and who made them
- Includes the ability to include a message with each change to explain the reasoning behind it
- Retrieve past versions of the entire project or individual files
- Create branches to experimentally make changes without affecting the main branch
- Merge desired changes back into the main branch
- Ability to attach tags to versions, making it easy to keep track of different versions of software
- Facilitate collaboration among team members.

To learn of other versions visit: https://git-scm.com/downloads

What is Git?

Git is a distributed version control system that allows developers to track and manage changes in their code

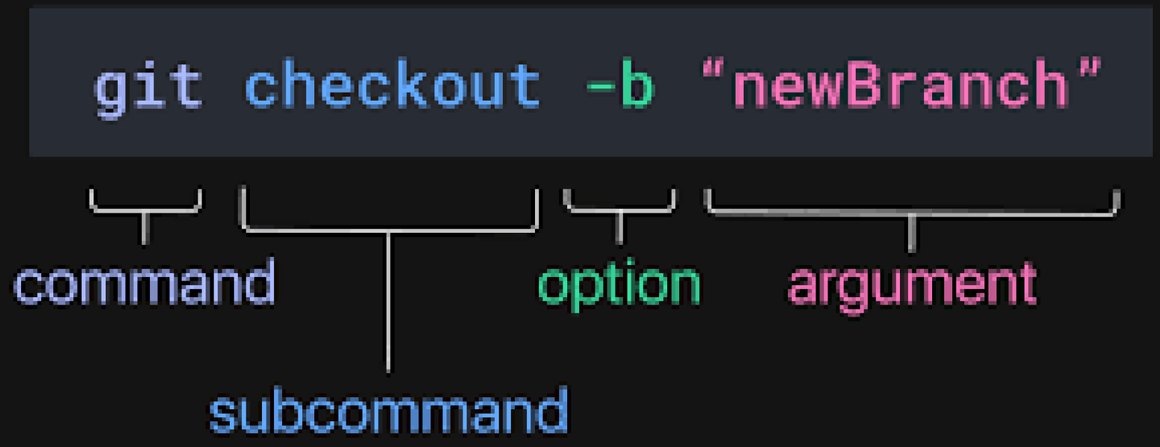
4. Git Basics

Git terminology

To understand Git, you have to understand the terminology. Here's a short list of terms that Git users frequently use.

Terminology	Definition
Working tree	The set of nested directories and files that contain the project that's being worked on.
Repository (repo)	The directory, located at the top level of a working tree, where Git keeps all the history and metadata for a project.
Hash	A number produced by a hash function that represents the contents of a file or another object as a fixed number of digits.
Object	A Git repo contains four types of objects, A blob object contains an ordinary file. A tree object represents a directory; it contains names, hashes, and permissions. A commit object represents a specific version of the working tree. A tag is a name attached to a commit.
Commit	Commit is an operation which sends the latest changes of the source code to the repository

Terminology	Definition
Branch	A branch is a named series of linked commits. The most recent commit on a branch is called the head. The default branch, which is created when you initialize a repository, is called main, often named master in Git.
Remote	A remote is a named reference to another Git repository.
Commands, subcommands, and options	Git operations are performed by using commands like git push and git pull. git is the command, and push or pull is the subcommand. The subcommand specifies the operation you want Git to perform. Commands frequently are accompanied by options, which use hyphens (-) or double hyphens (--). For example, git reset --hard.



The Git command line

The Git command line is a tool that allows users to interact with a Git repository using a command-line interface.

Sample Git Commands

Command	Operation
git --version	Checks the version of Git currently installed on your system.
git config --global user.name <USER_NAME>	Sets user's name
git config --global user.email <USER_EMAIL>	Sets user's email
git config –list	Lists global configurations such as name and email
git init/git init –initial-branch='main'	Initializes a new Git repository in the current directory.
git clone <repository>	Create a copy of an existing Git repository on your local machine.
git add	Add a file to the staging area/tells Git to start keeping track of changes in certain files.
git commit -m <message>	Saves changes to the repository with a brief message describing the changes.
git status	Checks the status of the working tree.

Command	Operation
git diff	Views the differences between the working directory and the last committed version of the code.
git log	Views the commit history of the repository
git branch	Views the branches in the repository
git checkout –b <branch>	Used to switch to a different branch
git init/git init –initial–branch='main'	Initializes a new Git repository in the current directory.
git merge <branch>	Used to merge changes from one branch into another
git pull	Used to download the latest changes from a remote repository and merge them into the local repository.
git push	Used to upload local changes to a remote repository
git fork	Used to create a personal copy of a repository on GitHub.
git rm <file>	Used to remove a file from the repository and delete it from the file system.
git revert	Used to undo the previous commit.
git reset	Used to undo commits by discarding commits from the current branch.
git clean	Used to remove untracked files from the working tree.
git stash	This command temporarily saves changes that are not committed yet

Git and GitHub

Git is a distributed version control system (DVCS) that multiple developers and other contributors can use to work on a project. It provides a way to work with one or more local branches and then push them to a remote repository.

GitHub is a cloud platform that uses Git as its core technology. GitHub simplifies the process of collaborating on projects and provides a website, more command-line tools, and overall flow that developers and users can use to work together. GitHub acts as the remote repository mentioned earlier.

Key features provided by GitHub include:

- Issues.
- Discussions.
- Pull requests.
- Notifications.
- Labels.
- Actions.
- Forks.
- Projects

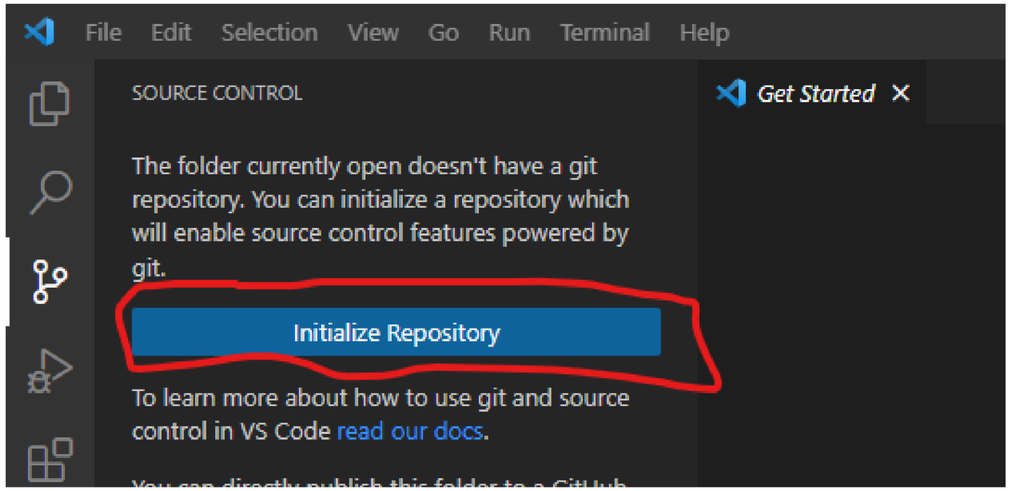
To learn more about GitHub, see the Introduction to GitHub Microsoft Learn module or the Getting started with GitHub help documentation.

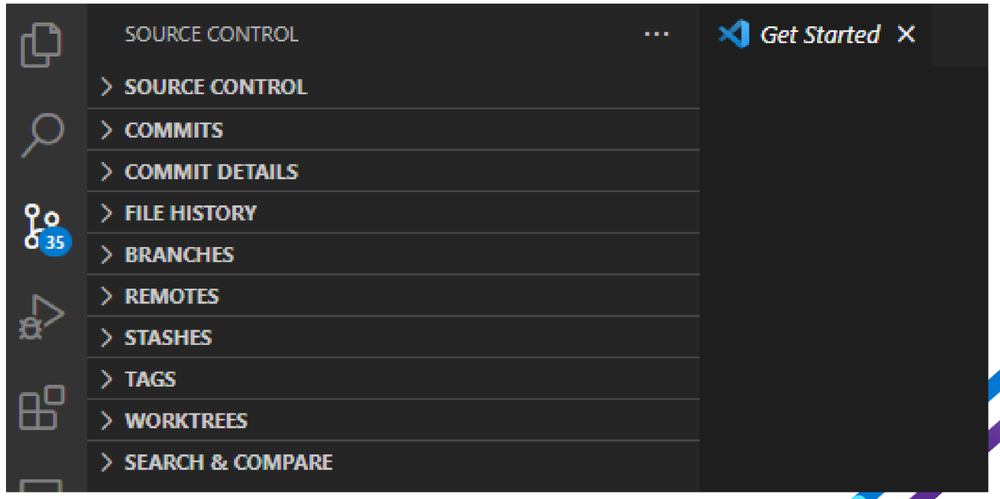
5. Using Git in VSCode

In this guide, we will cover how to use the Source Control inbuilt feature for Visual Studio Code (VSCode), including how to use Git commands, view changes in your code, and undo changes via GUI.

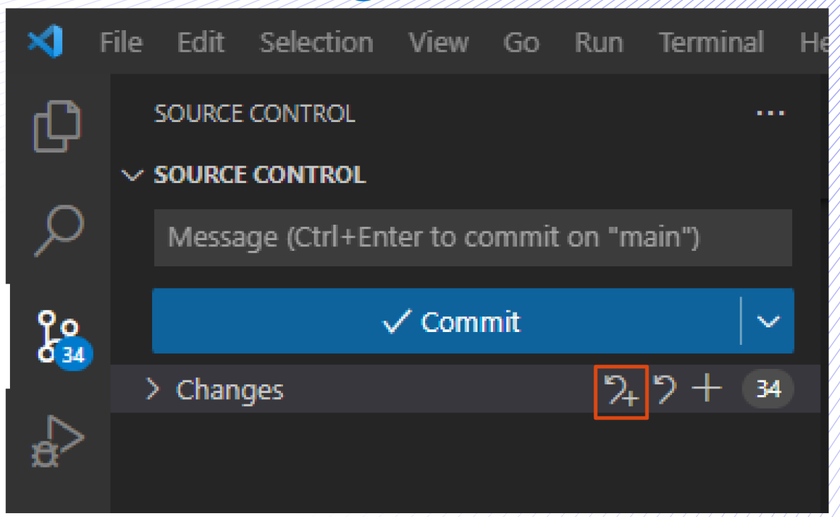
By the end of this guide, you will have a solid understanding of how to use Git within VSCode and be able to confidently manage your code revisions.

1. Initialize Repository

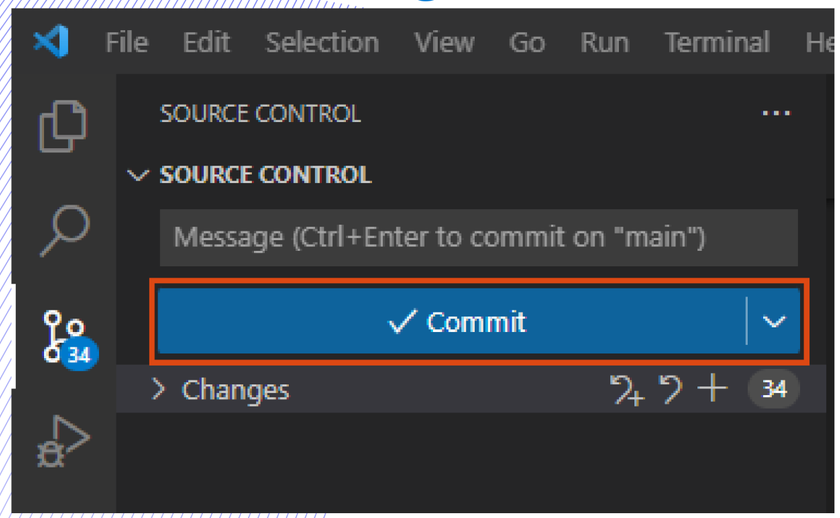




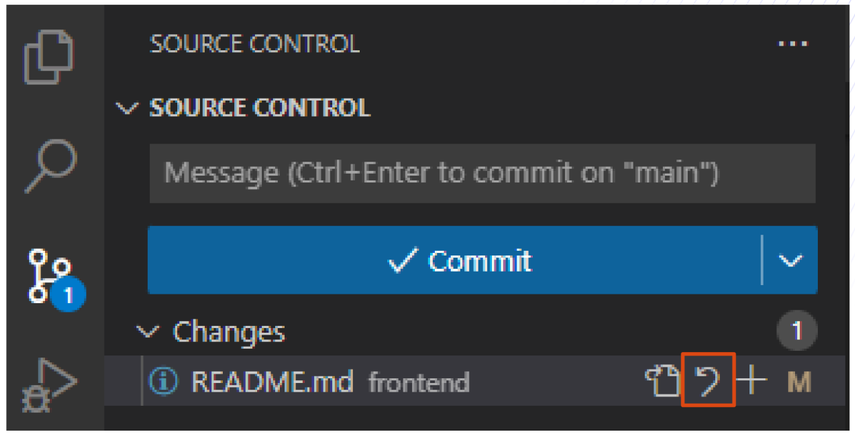
2. Stash Changes



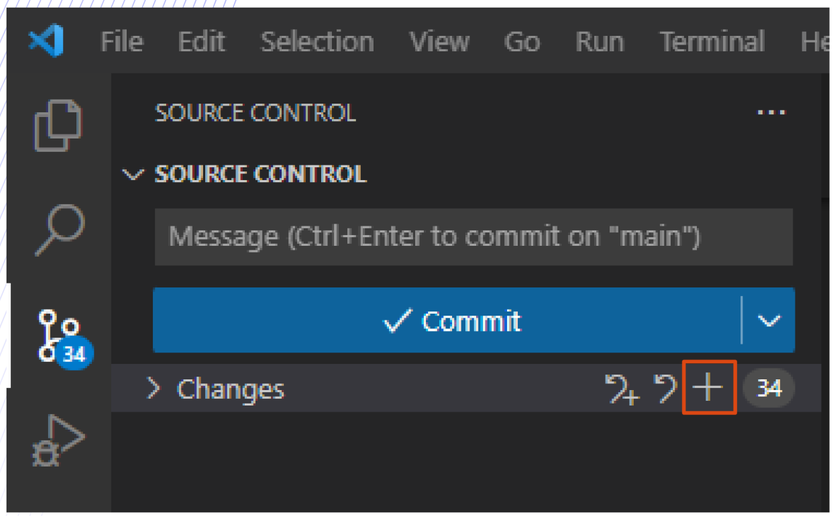
3. Commit Changes



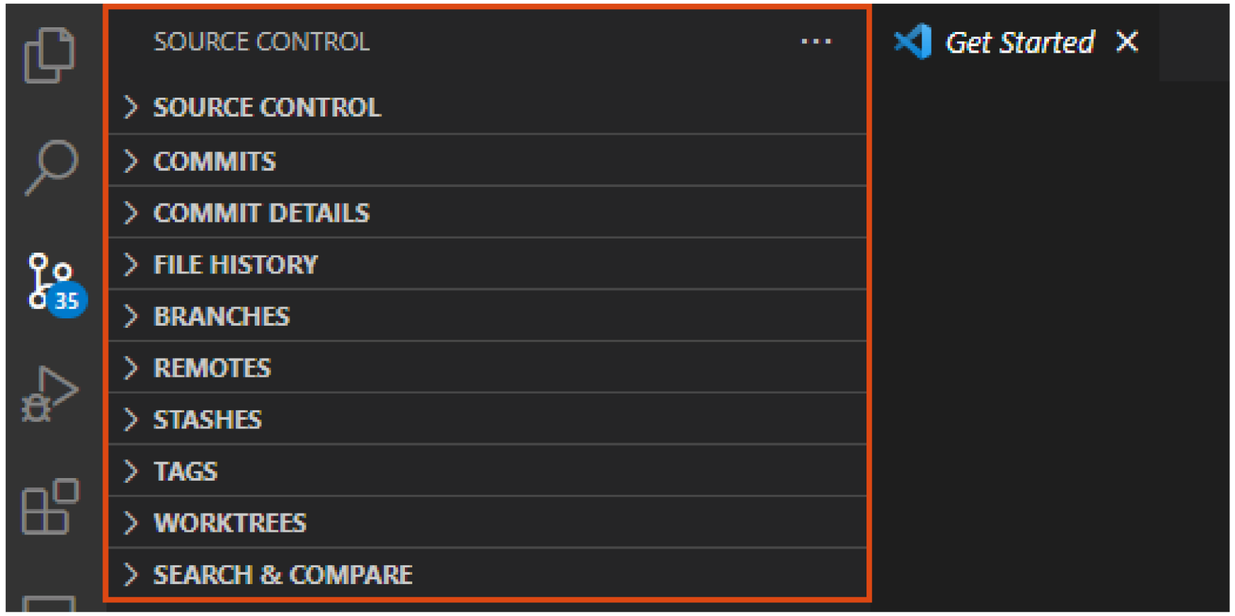
4. Discard Changes

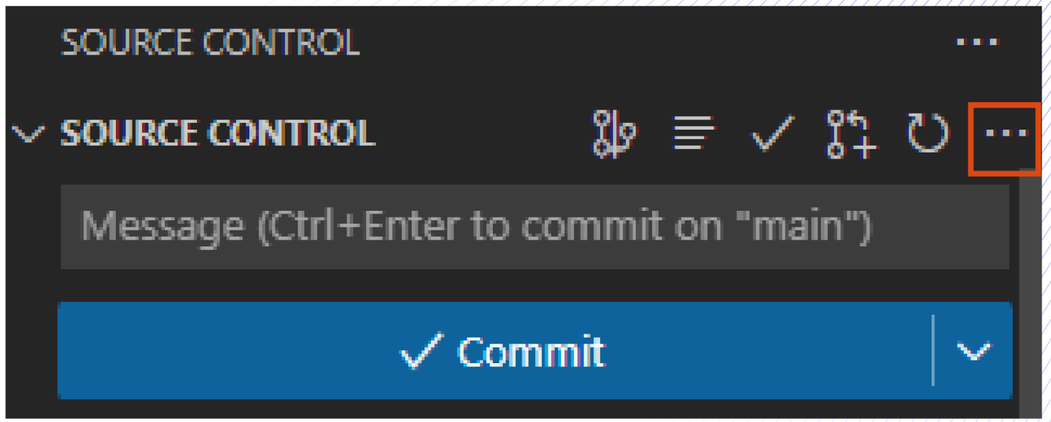


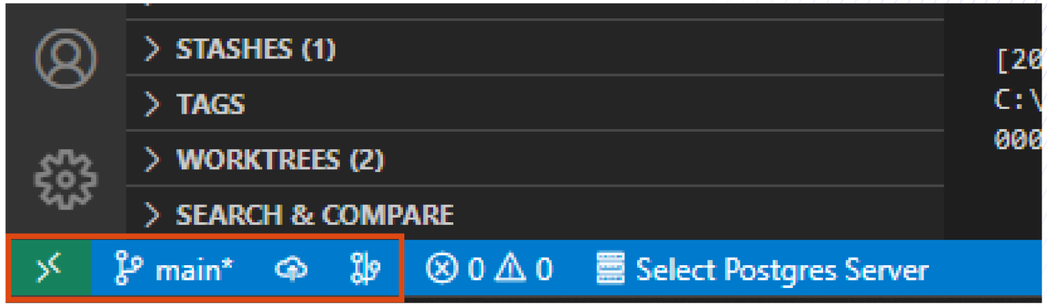
5. Add Files



Other Git Shortcuts







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