# Introduction

This book is based on documentation I've been writing and sharing on Git for a past few years. Having been a long-time open source contributor and a daily GitHub user, I’m usually the most experienced person on my team when it comes to Git and GitHub, so it often falls to me to provide training and set standards. I’ve been carrying around some of this material for a while now.

In a way it's the book I wish I had when I started working with Git. Like many people I had experience with another Source Control Management (SCM) system, in my case Subversion, and I was thrust into the middle of a project that used Git for version control.

Like many of you in similar situations, I was thoroughly confused. Git shares common features with many other SCM systems so on the surface you might think that you can just dive in. This is especially true when using a tool like Tortoise Git as I did. It seemed like a natural bridge from the Subversion world- Tortoise SVN being a best of breed Subversion client. The thing is, while Git does share the basic features of any modern version control system, it does so from a very different, very specific foundation. What I learned, eventually, is that if you don't understand the foundation, you can't effectively use Git.

This book will teach Git from that foundation and will continueon on to teach you how to work with Git day-to-day and will also teach you how and why to execute many common, as well as a few not-so-ocommon commands to work through specific scenarios you might enocunter.

This book is also go into some details about working with GitHub. GitHub is the dominant Hosting platform for Git based projects and hosts most of the largest open source software projects in the world. Because it's so dominant it's, for many usrs, the only interface to Git that they know. I have been a daily GitHub user for many years and manage a large GitHub organization, h5bp, and actively manage two large (40,000+ stars) projects on GitHub, so I have some insight to share on best leveraging the features and functionality that GitHub builds on top of Git.

The book is split into three sections. The first section will introduce basic Git concepts and will introduce basic Git commands. The second section will introduce GitHub and will walk through workflows and tools that you can use to enhance your use of Git. The final section will introuduce some more advanced concepts- things you may only do once a year. While they're rare, even knowing that they're possible can help you out of a jam.

That's one of the things that's nice about Git is that there's \_usually\_ a way of every jam. This book will help you get to the point where you can fix those jams yourself.

## Who This Book Is For

This book is mostly written for sofrware developers looking for an in-depth introduction to Git or to expand their existing knowledge of Git beyond what they might have picked up in their day-to-day work with the system.

In addition to software developers, other members of a software development team including product managers, quality assurance engineers and designers would benefit since Git and the workflows associated with Git are so fundamental to the way that modern softwqre is developed.

## Prerequisites

Since this book is designed as an introduction, \_From the Ground Up\_ (as the title goes), bo previous experience with Git is required. That said, hopefully even if you do have some experience with Git this book will deepen your experience and will make you a more effective Git user.

The only real requirements are fluency with your file system of choice, some familiarity with executing commands on the command line and some experience as a software developer (or role on a software development team in a non-coding role.)

The only software you'll need, other htan Git itself, is a text editor. The examples will be executed in VS Code, but any text editor will do.

For the GitHub chapters a GitHub user account will be required if you would like to follow along with all of the examples.