

1 Introduction to Git and GitHub

Arni Magnusson



SPC Git/GitHub Workshop
Nouméa, 12 November 2025

Overview

Examples *SPC software/analyses/information
fisheries software, open data, personal notes*

Benefits *track changes, backups, collaboration, dissemination*

Git concepts *repositories, commits, tags, branches, gitignore*

GitHub features *releases, assets, forks, pull requests, issues,
browse, access control, authentication*

Level of Expertise

1. Have downloaded things from GitHub *for example, `install_github("somePackage")`*
2. Have a GitHub account and Git is installed on my computer
3. Have created my own repo *personal or within an organization*
4. Have forked a repo and submitted a pull request *contributing to a project*
5. Have helped a colleague with Git/GitHub and starred a repo
6. Have tagged a commit and created a GitHub release
7. Happy with my Git tools and configuration *edit, commit, browse, etc.*
8. Have worked across branches and solved a merge conflict
9. Could give a one-day workshop on using Git and Github 😊

Installing Git

Google git windows

All Videos Images News Books More Tools

About 454,000,000 results (0.35 seconds)

<https://git-scm.com> > downloads ⋮ 6

Downloads - Git SCM

Downloads · macOS · Windows · Linux/Unix · Older releases are available and the **Git** source repository is on GitHub.

[macOS](#) · [Download for Linux and Unix](#) · [GUI Clients](#) · [Logos](#)

<https://git-scm.com> > download > win ⋮ 6

Downloading Package - Git SCM

Download for **Windows**. Click here to download the latest (2.35.1) 32-bit version of **Git** for **Windows**. This is the most recent maintained build.

Default Editor



Git 2.35.1.2 Setup

Choosing the default editor used by Git

Which editor would you like Git to use?

Use Vim (the ubiquitous text editor) as Git's default editor

The [Vim editor](#), while powerful, [can be hard to use](#). Its user interface is unintuitive and its key bindings are awkward.

Note: Vim is the default editor of Git for Windows only for historical reasons, and it is highly recommended to switch to a modern GUI editor instead.

Note: This will leave the 'core.editor' option unset, which will make Git fall back to the 'EDITOR' environment variable. The default editor is Vim - but you may set it to some other editor of your choice.

<https://gitforwindows.org/>

Back Next Cancel

Git 2.35.1.2 Setup

Choosing the default editor used by Git

Which editor would you like Git to use?

Use the Nano editor by default

[GNU nano](#) is a small and friendly text editor running in the console window.

This is the recommended option for end users if no GUI editors are installed.

<https://gitforwindows.org/>

Back Next Cancel



GitHub Examples



Search or jump to...

Pull requests Issues Marketplace Explore



Pacific Community (SPC)

Pacific Community (SPC) Official GitHub Organization

New Caledonia <http://www.spc.int/> hostmaster@spc.int[Follow](#)[Overview](#) [Repositories 198](#) [Packages](#) [People 67](#) [Teams 21](#) [Projects](#)

Repositories

 Find a repository...[Type](#)[Language](#)[Sort](#)[New](#)

ofp-sam-yft-review Public

Yellowfin tuna assessment review

0 ⭐ 0 0 ⚡ 0 0 Updated 3 hours ago

OFP-Ikamoana Private

0 Jupyter Notebook 1 ⭐ 1 1 ⚡ 0 Updated 8 hours ago

OPF-FEMA-BioDaSys Private

Local front-end for the Biological Database System (Tissue Bank)

0 C# 0 ⭐ 0 0 ⚡ 6 Updated 11 hours ago

tuf_common Private

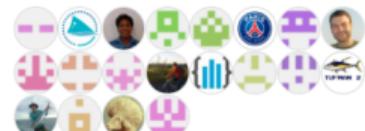
Common Tuf code shared between Tuf instances like Tufman2

0 C# 0 ⭐ 0 0 ⚡ 0 Updated 15 hours ago

tufman2 Private

0 C# 0 ⭐ 0 1 ⚡ 11 (1 issue needs help) Updated 16 hours ago

People

[View all](#)

Top languages

● R ● C# ● JavaScript ● HTML● TypeScript

Repositories

| | |
|---------------------------|--|
| SPC software | TUFMAN2, MD2, MULTIFAN-CL, SEAPODYM, FLR4MFCL |
| SPC analyses | Swordfish 2025 CPUE analysis, Oceanic whitetip shark 2025 assessment |
| SPC information | Yellowfin review, Condor tutorial, Git/GitHub workshop, TAF demo |
| Fisheries software | TMB, sdmTMB, SAM, Gadget, CASAL, Stock Synthesis, TAF |
| Open data | US West Coast fisheries, Global fisheries, Covid data |
| Personal notes | Covid analysis, Computer settings |

Benefits of Using Git and GitHub

Benefits

Track changes Who changed what, when, and why

Backups Online

Restore previous state

Collaboration Local, regional, international

Software development, analyses, other projects

Dissemination Software

Open science, data hub

Products



Git Concepts

Git and GitHub

Git

A program *that you can install*

Version control software *tracking changes*

Load and save project snapshots *clone, commit*

Free software *created by Linus Torvalds in 2005*

GitHub

A website *open 'github.com' in a browser*

Service for Git projects *pull requests, issues*

Browse online *view changes, download*

Basic functionality is free *created 2008, owned by Microsoft since 2018*

Popular in fisheries science since around 2015, taking over from previous (similar) technologies

Git Concepts

Repository Project folder with tracked changes *a sequence of commits*

Commit Saved snapshot *example: bc4b374*

Tag Nickname for a significant commit *example: 2.0.0*

Branch Parallel sequence of commits *can be merged later with the main branch*

Gitignore List of local files that should be ignored *not uploaded to remote repo*



GitHub Features



GitHub Features

Release GitHub page pointing to a tag *guaranteed to work, human-readable history*

Assets Downloadable files for a given release *installer.exe, everything.zip, poster.pdf*

Fork Personal copy of a collaborative project repo *edit things, add features*

Pull request Request project owner to consider your additions *from your fork to main repo*

Issue Discussion related to project *question, bug, idea*



GitHub Features (cont)

- Browse** Organization/user *repos (pinned/starred/search), people, teams*
- Repo *activity, releases, contributors, files, issues, pull requests, review comment*
- Commits *history, log entries, changed files, changed lines*
- Access control** public, private *read/write/admin, teams*
- Authentication** login, clone, push *password, windows credentials, ssh keys*

Summary

Examples *SPC software/analyses/information*
fisheries software, open data, personal notes

Benefits *track changes, backups, collaboration, dissemination*

Git concepts *repositories, commits, tags, branches, gitignore*

GitHub features *releases, assets, forks, pull requests, issues,*
browse, access control, authentication