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System Programming -I

git

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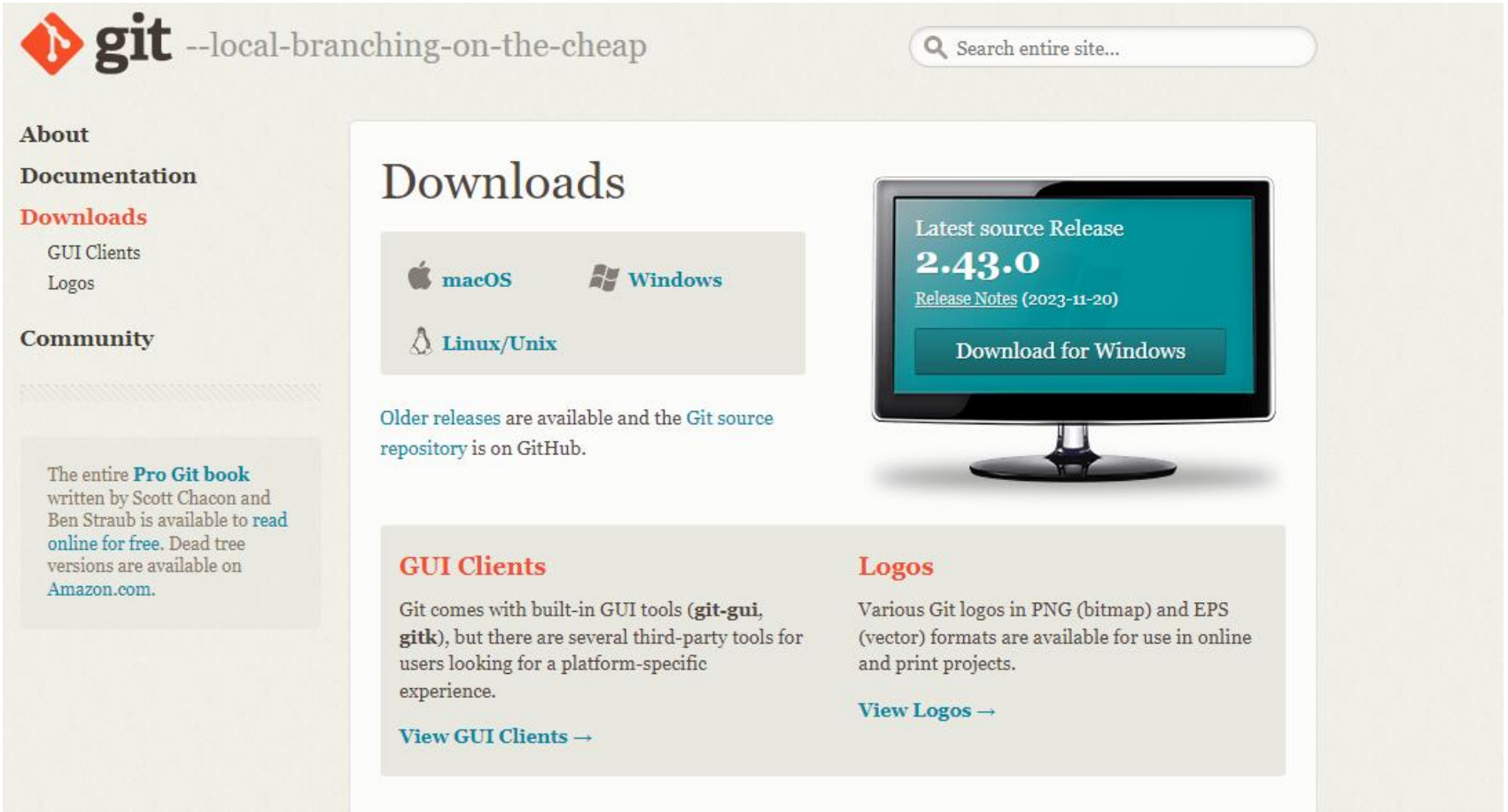
What is Version Control?

Version control is a **system that records changes to a file or set of files over time, so you can recall specific versions later**. It helps in coordinating work among multiple people, tracking changes, and organizing code.

What is Git?

Git is a **distributed version control system that allows multiple developers to collaborate on a project.** It tracks changes in source code during software development.

Navigate to https://git-scm.com/download



Key Concepts

1. Repository:

1. A directory that contains your project.
2. Can be local (on your machine) or remote (on a server).

2. Commit:

1. A snapshot of your repository at a specific point in time.
2. Represents a set of changes made.

3. Branch:

1. An independent line of development.
2. Useful for working on new features without affecting the main codebase.

4. Merge:

1. Combining changes from different branches.

5. Pull Request (PR):

1. A request to merge changes into the main branch.

6. Clone:

1. Copying a repository to your local machine.

Initializing a Repository

git init

Check Repository Status

- This will show you the status of your files - whether they are untracked, modified, or staged.

git status

Stage Changes

- Replace <filename> with the actual name of the file you want to stage. If you want to stage all changes, you can use **git add .** to stage all changes.

git add <filename>

Check Status Again

This will show you the changes that are staged and ready to be committed.

git status

Commit Changes

Replace "Your commit message" with a brief and meaningful message describing the changes you made.

git commit -m "Your commit message"

View Commit History

- This will display a log of all the commits in the repository, including the commit messages and unique identifiers.

git log

Pushing Changes to a Remote Repository

- If you haven't added a remote repository yet, you need to do this first. **Replace <remote-name> and <repository-url> with your chosen remote name (e.g., origin) and the URL of your remote repository**.

git remote add <remote-name> <repository-url>

Check Existing Remotes (Optional)

- This command will show you the existing remotes and their URLs.

git remote -v

Check existing branches

git branch --list

Push Changes to the Remote Repository

- If you're pushing to the main branch (e.g., master or main), use:

git push -u <remote-name> <branch-name>

You

Vs The guy she told you not to be worried about