Git Well Soon: a crash course in version control

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Ciaran has a set of SAR tools he is maintaining using a Github source code repository; [LINK] Heres how you can get that code for your own use, make any changes you feel are needed and share it with anyone else who would require it.

What is Git?

Git is a way of managing and keeping track of a piece of softwares history who made what change when. It is also a way combining code from multiple developers together into a single piece of software, while still keeping track of who did what.

Installing Git

If you're on Windows, then you can install Git for Windows via the Universitys Program Installer. If you're on an Ubuntu or other Linux machine, then Git is usually pre-installed. If not, then you can install it with

```
$ sudo apt-get install git-all
```

on the command line.

> From here out, its assuming that you are using a standard Bash terminal for navigation. If you are on Windows, a good enough emulation comes with Git for Windows; just type Git Bash into the search bar.

Getting the code

First, navigate to a convenient directory using cd and mkdir, as appropriate. Once there:

```
$git clone [LINK]
```

> If youre not familiar with using a terminal to navigate, all you need for this session are the following commands: `$cd [folder]` will move you into [folder]; `$cd ..` will move you up to the parent folder; `$ls` will show files in the current folder; and `mkdir [name]` will create a new directory called [name].

This is now the **root** of your local repository as far as Git is concerned, everything is relative to this point.

diagram of clone
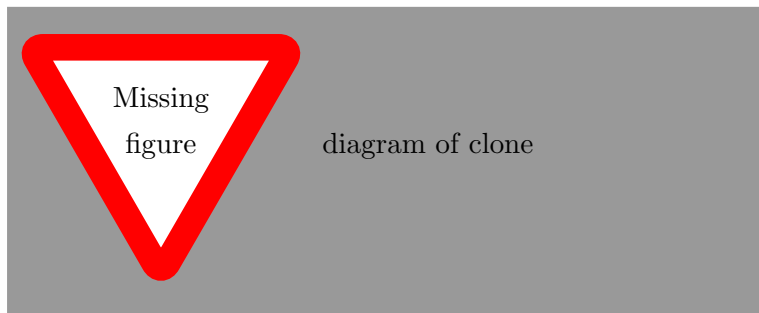
What is happening here

This will copy all of Ciarans code from Github to your machine into a **local repository**, complete with the history and branches [see later] of his project right to the beginning you can view this with the command `$ git log`. Press q to exit the log viewer.

Why do this?

As well as getting the entire projects codebase, when you cloned the repository with `$ git clone`, you also cloned its history and configuration. This means that you can:

- Keep it up to date with any revisions Ciaran might make in the future

- Review any changes he might have made in the past, and understand why he made those changes.

- If you make a huge, unfixable mistake, or if the code was working last Tuesday and isnt now, you can roll the entire project back to a point where everything was working

- Fix any bugs or glitches you might find

- Add any further features that you think the code might need, and share those features with anyone else.