# InstallFest!

Historically, [InstallFests](https://en.wikipedia.org/wiki/Linux_user_group#Installfests) were community events where computer enthusiasts would get together to install the Linux operating system. It wasn’t trivial to install Linux when it first started to get popular in the 1990s. So it was much easier if you had the help from others when you first tried to get it running. The term open source got popularized to mean really any kind of computing event where a group of people installed [open source](https://en.wikipedia.org/wiki/Open_source) software.

Today we’re going to have our own InstallFest to get set up with some of the tools that we’ll be using over the course of the semester. That’s right, all the tools we’ll be using are freely available and open source. It wasn’t that long ago when most people thought open source was a pipe dream that would never work. It has been wildly successful, to the point now where Linux is running on most of the world’s smartphones and webservers. However, the democratic or even socialist goals of the early free software and open source movement have been largely unrealized. Some think that open source software has led to even greater [concentrations of wealth](https://en.wikipedia.org/wiki/SCO%E2%80%93Linux_disputes#Microsoft_funding_of_SCO_controversy) and inequality in society.

Be that as it may, it is useful for us to a) not have to pay for the software and b) for it to work well. Fortunately those two things align in some open source software projects. Unlike in the early days of Linux you should find operating specific installers for all of the tools we’ll be installing today, which hould take care of most of the details. But expect some roadblocks as we discover some things.

## Python3

This is the big one since we’re going to be using the Python programming language to learn about object-oriented programming this semester. If you already have it on your computer from another class (e.g. INST126) it could still be useful to get the latest version v3.7.2. You may have used something like Jupyter Notebooks in your browser last year, which were running on a server somewhere else. This semester you will be running Python on your laptop.

You should find the Python3 download for your operating system when you visit this page:

https://www.python.org/downloads/

## Git

Git is the world’s most popular [version control system](https://en.wikipedia.org/wiki/Version_control). Version control systems allow you to manage the changes you make to the programs that you will be writing. It also allows you to share your code with other people, on sites like [GitHub](https://github.com) or [GitLab](https://about.gitlab.com/). As we’ll be discussing later in the semester the code that we’ll be writing will live in files on your computers, and as you change those files you may want to go back to a previous version, or share them with your classmates. Think of version control as something like the version history you can see in a Google Doc.

Select the Git appropriate installer for your operating system here:

https://git-scm.com/downloads

## Code

To write code you need an [text editor](https://en.wikipedia.org/wiki/Text_editor). Last semester many of you used [Jupyter Notebooks](https://jupyter.org/) which allowed you to write code in your browser. Jupyter Notebooks are great because you can simply point your browser at the notebok on the web,anddon’t need to install anything locally on your computer. They are also perfect for data science work where you want to share some analysis and data with the world in an interactive and dynamic format.

However when you are developing software applications as part of a team it’s often useful for you to be able to edit code in a [integrated development environment] (IDE) which helps you write and execute code, look at documentation, and your filesystem all in the same application.

If you already have a text editor that you like, and are comfortable opening a terminal window and typing commands there please feel free to use it. However I’ll be using [Visual Studio Code](https://code.visualstudio.com/) (otherwise known as VSCode or just Code) in class because it has nice Python and Git support. It is gaining quite a bit of popularity in programming circles at the moment, so you will be learning to use a relevant tool.

To install Code, download the installer for your operating system here:

https://code.visualstudio.com/

After you’ve installed Code, start it up and install the Python extension by going to *Preferences* -> *Extensions* and then search for “Python”. You should see the *Python Extension* from Microsoft which you can install. When it prompts you which Python to use select the version we just installed v3.7.2.

## Hello World

If you have time see if you can figure out how to create your first program in Code:

print("hello world")