Install and Build Software on Unix (Linux) Machines
Linux Distributions (and packet manager commands)

Debain (apt-get)

Fedora (yum or dnf)

Arch Linux (pacman)

openSUSE (zypper)
Package Managers

A collection of software tools that automates the process of installing, upgrading, configuring, and removing computer programs for a computer’s operating system in a consistent manner.
Ubuntu (Debain)

- `sudo apt-get install <package name>`
- `sudo apt-get remove --purge <package name>`
- `dpkg-query --list`
- `apt-cache search <query>`
Fedora

```
sudo yum install <package name>
sudo yum remove <package name>
yum list installed
yum search <package name>
```
Software from Source

- If there is no package to use
- If you need the latest developer version
Most software goes through 3 steps

● \texttt{/configure} - runs the 'configure' script that is present in the current directory. This script checks your system for 'dependencies' or missing libraries, and creates the 'Makefiles'. You may need to specify various flags during 'configure', such as where to install the final binaries (\texttt{--prefix})

● \texttt{make} - calls "make all". Compiles and builds all binaries, may perform tests.

● \texttt{make install} - put the binaries in the 'install' directory. The 'configure' script may have a default install directory (like /usr). If you do not have root privileges, then you will need to change the install directory using the \texttt{--prefix} flag during the configure step.
Tips for installing from source

- create three directories, 'src', 'build', and 'install'.
- download your source code (tarball) into the 'src' directory.
- cd to the 'build' directory and then issue the 'configure' command (eg.,
  ../src/configure --prefix=<path>/install)
- the software will be installed in the 'install' directory.
Project

Project is to install the fftw library (or some other Linux package, check https://www.archlinux.org/packages/ for other options).

Make sure you can show me it works.