

# A Guide to Building with SCONS:

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The program **scons** is a utility that helps maintain software projects, allowing for easy building of source files. It is written in the **Python** language and uses that language to set up the build instructions. In general, there is no need to learn Python to use it, as it is based on a simple set of instructions to do the most common build tasks.

### Sconstruct

The build instructions are written in a file called *Sconstruct* that **scons** reads by default. Taking the SConstruct file for this project as an example, I'll show how it's done.

1. First thing is to set the environment for the build (we'll need the `os` module for this, which we get by doing **import os**):

```
env = Environment(ENV = {'PATH' : os.environ['PATH']})
```

2. Then we can add some options to the build for header and library paths, required libraries etc.:

```
env.Append(CPPPATH = '%s/include' % local_path)
env.Append(LIBPATH = '%s/lib' % local_path)
env.Append(LIBS = 'sndfile')
```

3. Once this is done, we can build (you'll notice the SConstruct file has some extra things to check for dependencies such as `libsndfile`, but that's just some added bonus). Use the 'Program' method for doing it, e.g.:

```
myprogram = env.Program('myprogram', 'mysource.c' )
```

4. You can add your own programs to the list at the end of the SConstruct file, using the same form as above, just be careful to line up (indent) your command with the lines above it (Python is fussy about indentation). This should be useful to build your own projects. One of the great things about programs like **scons** is that they will only build what needs to be built, i.e. if the source code has been modified, or if the executable is missing.

5. To build with **scons**, just type the following at the terminal/shell:

```
$ scons
```