Guide to BOOK Chapter 4 Examples:
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Introduction to Program Design

Waveform

This is the program discussed as an example in the text. Its source files are: *rd.c*, *out.c* and *main.c*. It also depends on the *portsf* library, whose sources are also here: *portsf.c* and *ieee80.c*.

Building the Programming Example

These examples will build on most systems without the requirement of extra software or dependencies. Open a terminal/command-line and, at the sources directory, just type ($ is the prompt)

```
$ make
```

The waveform examples (as well as the portsf library) will be built. The waveform program can then be run as:

```
$ ./waveform  ...
```

where "`...`" stands for the program options as discussed in the chapter. Some examples:

```
./waveform -o xxx.wav -f sine -s 10

./waveform -o xxx.wav -f cosine -s 2 -t 1
```

Tcl/Tk GUI

The Tcl/TK user interface is found in the script *interface.tcl*. Once you have the waveform program ready, you can run it using the '**wish**' interpreter (you will need to have *Tcl/Tk* installed, and this is present by default on most systems, except MS-Windows). Open a terminal/command-line and, at the sources directory, just type ($ is the prompt):

```
$ wish interface.tcl
```

You should get a dialog box interface. Just fill in the relevant fields and press OK. If successful, a message box will let you know the output file was created. Otherwise an error message will be displayed.

create_test.c

This simple example implements the creation of a 1024 point sine-wave table as a text file, that can then be used in the waveform program:

```
cc -o sine1024 create_test.c
./sine1024
./sine1024 > sine1024.txt
./waveform -o xxx.wav -w sine1024.txt -s 4 -t 2
./waveform -o xxx.wav -w sine1024.txt -s 440 -t 2
```