

Pin-Lib

Due: March 14, 2007

1 Objective

In this assignment, you will create a library to facilitate your future coding with the pinball machine. From the library interface, you will be able to trigger any given solenoid or lamp.

2 Task

You are to write a library that can turn on any set of lamps or trigger any solenoid and that keeps track of what lamps are currently on and what solenoids are currently being triggered. The interface to the library should provide calls to turn a lamp on or off, trigger a solenoid, and to clear all the lamps. Once the library is complete, provide a test program for it.

This project, like all of them, will build on what you have already written. So, keep in mind that the basic structure of this project should be the event loop that you have been working with in the previous assignments. Hopefully, you made your event loop modular; this is not the last time you will be adding to it.

3 Background Information

Keep two things in mind as you write this:

First, if multiple solenoids are triggered at the same time, the solenoid fuse will likely blow. So, if one is triggered when another is already firing, make sure to delay the next solenoids firing until the first has finished. This is especially important when you take into account that any given solenoid needs to be held in a firing position for around 50ms (you should check this!) before it actually responds.

Second, in order for the lamps to work properly on the physical pinball machine, you should be strobing over only 3 or 4 of the columns at a time.

If you strobe over too many columns, the lamps will appear dim, and if you only use 1 or 2 columns, the lamps may be damaged.

4 Handing In

You should hand in:

1. The source code for your program.
2. A working binary version of the system (or a jar file if you are using java).

To hand these in, you should copy everything involved in this assignment into a single directory, and run:

```
$ /course/cs160/bin/cs160handin pinlib
```

Try to avoid handing in irrelevant files by cleaning up the directory before running the script.