

# CS116 - Intro to Programming, C++

Summer 1998

## Homework 3

Due in class Wednesday 8/12/98

### To get started

- In your home directory, create a new directory for this assignment.
- Make sure your programs are correct by testing them extensively. If you can't get a program fully to work, make sure you know on what kind of input it works and on what kind of input it fails.
- Use meaningful and descriptive variable and function names and put plenty of comments in your code.
- Create a writeup file called **README**, containing:
  - A *brief* overview of the design of your programs.
  - An explanation of which programs work correctly.
  - An explanation of which programs do not work correctly (if any), what specifically are the problems, and what you think causes the problems.

To turn in an online copy of your assignment, from within the assignment directory do:

```
> submit hw3
```

In addition to the online submission, turn in a hardcopy of all your source files together with your **README** in class. You can print a file on the Maclab A laser printer via the command

```
> enscript -2r -PMacLabA filename
```

**Problem 1 [ 10 pts ]**

Redo the “150 bulbs” problem of HW 2, except this time use the class `LightBulb` defined in class. This means that you will have an array of 150 `LightBulb` objects, and you will only interact with them through their public interface. Your interaction with a `LightBulb` will consist of flipping its switch and asking it for its state (which will be either `On` or `Off`).

**Problem 2 [ 10 pts ]**

**Note:** You don’t need to turn in any code for this problem. Simply include your answer in your `README` file.

Think of three object types, and for each one describe the public interface you would provide for it. Also, describe what internal data you would need to keep track of in order to make the public interface possible. Your objects might be video game monsters, cars, bank statements, music bands, clouds, or anything else you can think of.