Programming Project #5: An Employee Mini-Directory
Date Due: Wednesday 14 November 2018

(Loosely based on Exercises 10.2 and 10.3)

Let's build a mini-directory that allows us to look up employee information. Your program will first read this information from a data file, after which it will display all the data that was input. Next, your program will repeatedly query the user for a employee's name, display the each employee's information. To keep things simple, let's only track an employee's name, office, and phone extension.

To do this cleanly, let's use a `Minidir` datatype for mini-directories. This datatype should be designed as a `class` having the following member functions:

- `is_empty()`, whose value is true if the `Minidir` object is empty, and false otherwise.

- `find()`, which finds an employee with a particular name, that name being a `string` parameter.

The implementation data of a `Minidir` will be a `vector<Employee>`, called `data`. This data should be `private`, since we don't want a query program to change our database.

`Minidir` will also have two helper functions: an input operator and an output operator. These will be `friend`s of the `Minidir` class, meaning that they can access `data`, even they're not member functions.

Note that we have now introduced an `Employee` datatype. Let's implement this as a `struct` having data members named `name`, `office`, and `phone`, all of which should be `string`s. This datatype will also have an input operator and an output operator as helper functions. I found it helpful to also have a three-parameter constructor, the parameters being the name, office, and phone number.

Not surprisingly, the `Minidir` datatype will be given by two files:

- `Minidir.h`: the header file for the `Employee` and `Minidir` datatypes.

- `Minidir.cc`: the corresponding implementation file.

In addition, you'll need a file `proj5.cc`, whose main function reads a mini-directory from an input file, prints the whole directory on standard output, and then goes into a query/response loop allowing the user to look up employee information.

The project share directory `~agw/class/programming-c++/share/proj5` contains the following files:

- A header file `Minidir.h` for the class.

- A stub version `proj5-stub.cc` of `proj5.cc`.

- A working Linux executable `proj5-agw` that you can play around with.

- A `Makefile`, so that you can use `make` to build the program and `make clean` to clean up detritus.

Copy these to your working directory, as usual.

Your job is to flesh out the details of `proj5.cc` and to write the implementation file `Minidir.cc`. Please work incrementally.

Deliverables: A clean typescript, consisting of the following lines and their output:

```
cat Minidir.cc
cat proj5.cc
make clean
make
proj5 data0
proj5 data1
proj5 data2
```

Good luck!