

CS 12 - Assignment 1

Due Friday, April 18

In this assignment you will be working with data files. You will write a program that uses both input files and output files. A data file will be used as a way to save data between runs of a program.

Write a program for a large company that keeps track of who works in what department. You will keep track of three pieces of information, the department code, the employee id number, and the employee's last name. This information will be stored in a file called *names.dat*. Here is an example of what the file may look like:

```
1000 765 Hernandez
2000 453 Smith
1000 126 Brown
3000 288 Cronin
3000 111 Nicholson
```

where the first column is the department code in which the employee works, the second column is the employee id (it should be unique for each employee), and the third column is the last name of the employee. The first time this program is run, this file will not exist.

Try and use functions for this assignment. For example, the main of the program should display the menu of choices and read in the user's choice. Each choice should then call a separate function. Start with writing only one choice and thus one function at a time. This helps you find your bugs quicker and fix them before they cause larger problems as the program grows.

You will give the user the following choices upon the start of the program:

- Have the user add a name to the company list. This should prompt the user for the name, id, and department code for an employee. This information should then be added to the file *names.dat*. Thus, *names.dat* should be an output file in this function. In order to add information to a file without destroying any information that may already be in the file, you should open the output file in *append* mode. Always be sure you close the file.
- Add more names to the company list by reading from a file. This function should ask the user for the name of the file to be read from, which should be opened as an input file. (Note: this is essentially adding the information in one file onto the end of the file *names.dat*) Assume that the information is in the same format as that of *names.dat*. You should then continue to read a line of information from the specified file and output it to *names.dat* until all has been read. Thus, again *names.dat* should be an output file opened in *append* mode.

- Print out all the names and ids of the people who work in a particular department. This function should ask the user for the department code. Then you should go through the file *names.dat* and compare each department code to see if it matches the one the user has just specified. If it does, print out the employee name and id number to the screen. For example, if the user specified that they wanted to print out all those who work in department number 1000, then the following would be printed to the screen (given the example file above):

```
Department 1000 Employees:  
    765 Hernandez  
    126 Brown
```

Thus, for this function, *names.dat* should be opened as an input file. If no names have been placed in the company list (this may happen if this is the user's first menu choice the first time the program is run), a message saying the company list is empty should be printed to the screen.

The TA will go over how to turn in this assignment. Please feel free to ask any questions about this assignment.