

# CIS 251 • C++ Programming

## Project 2: File Input and Output

A local real estate agency wants a program that will assist new residents in locating agents for various types of insurance. The agency maintains a list of insurance agents in the file `agents.txt`. There are six values for each insurance agent, all on the same line of text in the file: the agent's last name and first name (each a single word), the company (a single "word" which may be multiple words joined by underscores), the type of insurance provided (a single word), the zip code (first five digits only), and the phone number (ten digits only). The following is an example of how a typical insurance agent entry appears in the file:

```
Andrews Jim PEICO Auto 53224 4145552023
```

Your program should prompt the user for the type of insurance coverage the resident wants and the zip code to which they are moving. It should then read the entry for every agent in `agents.txt` and generate an output file named `localAgents.txt` containing the last name, first name, company, and telephone number for each insurance agent for which the type of insurance and zip code entered by the user match those values for the agent. The first line of the text file should serve as a heading for the file, similar to the following:

```
Auto Agents in Zip Code 53224
```

The line representing the insurance agent mentioned above would be written as follows:

```
Andrews, Jim PEICO 4145552023
```

Separate the last name from the first name with a comma and a space. Separate the first name from the company and the company from the phone number with at least two spaces. The program should replace the file `localAgents.txt` if it already exists; do not append to the file.

### POINTS: 75

**BONUS (5 points each, 10 points total):** There's no guarantee that every value in the file will be correct. If the zip code for an agent is not a positive five-digit number beginning with 53, the program should write all six values for that agent (separated by spaces) to the file `badZip.txt`. If the telephone number for an agent is not a positive ten-digit number beginning with 414, the program should not write that agent's information to the output file (regardless of whether or not the brand and zip code match the user's input); instead, it should write all six values for that agent (separated by spaces) to the file `badPhone.txt` (unless it has already been written to `badZip.txt`; do not write an agent's information to both error files).

**BONUS (5 points):** The combination of an agent's last name and first name (with comma and space added) is no more than 25 characters, the company is no more than 15 characters, and the phone number is exactly ten characters. In the output file, write the names, companies, and phone numbers in such a way that they line up in left-aligned columns.

**No bonus credit will be given unless the standard requirements of the assignment are met! Make sure that you have the basic functionality working regardless of whether or not you are able to complete the bonus portion successfully!**

Your code should include comments at the top listing your name, the course, the project number, and a brief description of the program. It should also include **at least five inline comments** in your code explaining what your code is doing at that given point.

The deadline is posted on Blackboard. **No late work will be accepted! The deadline will be strictly enforced by Blackboard!**

You must use the syntax and structures covered in the lectures and chapters covered thus far in the textbook unless you receive prior authorization from your instructor. **Any attempt to use syntax beyond the scope of the course may result in significantly reduced credit, even if your solution is fully functional.**

If you need assistance with your project code, e-mail your instructor **at least one day in advance** of the deadline. E-mail messages sent too close to the deadline may not receive a response in adequate time to make corrections to the project.

You may discuss general details of the project with your classmates, but **do not look at or borrow another student's project code!** In addition, **do not post the details of the project or ask for assistance with specifics of this project on any public discussion board, forum, or newsgroup!**