COSC 1P02 Assignment 4

Stand Up and be Counted

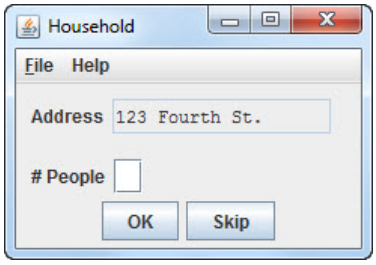
***Due: Nov. 26, 2012 @ 10:00am** (late date Nov. 29)*

In preparation for this assignment, create a folder called `Assign4` and create the DrJava project for this assignment in that folder. The data files for submission are found at URL: `http://www.cosc.brocku.ca/Offerings/1P02/A4Files.zip`. You should download and unzip this folder for use in preparing your submission of the assignment.

Census Data Collection

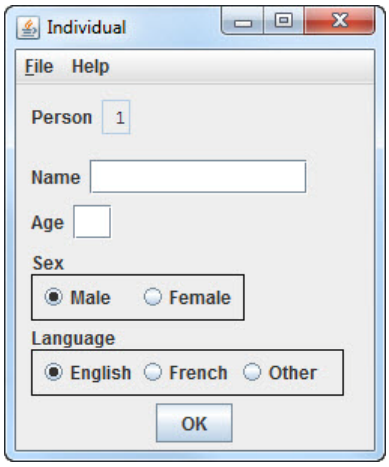
Every 5 years Statistics Canada completes a population census of the country. There are plans to have census takers go door-to-door to collect the census data. To facilitate this, the census takers will be supplied with a computer tablet to assist them in collecting and recording the data. You are to write the application program that will run on the tablet.

The program will be form based. The user (census taker) will launch the program and select a file of addresses that they will visit. The program will then present a form for each address in turn as the census taker walks from house to house. The `Household` form will look like:



The `Address` field is the address that the census taker should visit next. When the she is at that address, if no one is home, she presses the `Skip` button and will be presented with the next address. If someone is home, she fills in the number of people that reside in the home and presses `OK`.

When `OK` has been pressed, the program will present an `Individual` form for each of the people residing at the household such as:



The `Person` field is the number of the person residing at the household (increasing by one for each form presented at the household). The census taker fills in the name and age and selects the sex and language (first learned). Upon pressing `OK` the data is recorded and the form for the next person residing in the household is presented. When there are no more members in the household, the next

Household form is presented. When there are no more addresses in the address file, the program will terminate.

The program will produce a file (`ASCIIOutputFile`) of census data. This file will include one record (line) per individual at each household where someone was home. The record will include: address (`String`), person number (`int`, from `1` for household), name (`String`), age (`int`), sex (`int`: `0` for male, `1` for female) and language (`int`: `0` for English, `1` for French, `2` for Other).

```
123 Fourth St.  1       George  45      0       0
123 Fourth St.  2       Mabel   40      1       1
125 Fourth St.  1       Fred    33      0       2
125 Fourth St.  2       Betty   30      1       0
125 Fourth St.  3       Baby    2       1       0
```

The program will also produce a report such as:

```
                    Statistics Canada
                      Census Report

      Address        People Female  Male  English French   Other
123 Fourth St.            2      1      1       1       1       0
125 Fourth St.            3      2      1       2       0       1
Total                     5      3      2       3       1       1
```

The report will include one detail line per household where someone was home. The detail line will include the address, number of residents, number of female residents, number of male residents, number of English residents, number of French residents and number of non-English, non-French residents. At the end of the report, a summary line should include the total number of residents in the households visited and the breakdown by sex and language.

Submission:

Details regarding preparation and submission of assignments in COSC 1P02 are found on the COSC 1P02 website at URL: `http://www.cosc.brocku.ca/Offerings/1P02/AssignGuide.pdf`. This document includes a discussion of assignment preparation, programming standards, evaluation criteria and academic conduct (including styles for citation) in addition to the detailed assignment submission process copied below. **Part of the marks for the assignment will be awarded for programming standards.**

To prepare and submit the assignment electronically from the lab, follow the procedure below:

1. Ensure your folder (say `Assign4`) for the assignment is stored on your `Z:` drive.
2. Using DrJava, print (to `PDFCreator`) the `.java` file of your assignment using the name *`ClassName`*`.pdf` where *`ClassName`* is the class name (i.e. same name as the `.java` file) and save the `.pdf` file at the **top level** of the project folder (i.e. directly within `Assign4`).
3. Run your program for the assignment using the data files (from the `A4Files` folder) `addresses.txt` for the addresses and the file `Script.pdf` as the script for your interaction with the forms presented by the program. Save the census data file produced as `censusData.txt` and the report as `report.pdf`, both at the **top level** (i.e. in the `Assign4` folder). Open the `censusData.txt` file in `Notepad` (or similar) and print it to `PDFCreator` as `censusData.pdf`, again at the top level (in `Assign4`).

4. Run PuTTY by selecting `PuTTY` under `All Programs` in the `Start` menu.
5. Double-click `sandcastle` in the `Load, save …` entry.
6. Enter your Brock userid and press the `Enter` key.
7. Once you have the `sandcastle%` prompt, navigate to your project directory for your assignment (say `Assign4`).
   Here are a few useful commands (press `Enter` after typing the command):

`ls –l`	- list files in current directory
`cd <directory name>`	- changes to the specified subdirectory (note, do not include the <>) e.g. `cd Assign4`
`cd ..`	- go up 1 directory level

   Note: If your file or folder names include spaces or special characters, you have to enclose the name in quotes, e.g. `cd "COSC 1P02"`.
8. Once you have confirmed you are in the correct project directory, type the command `submit1p02` and follow the instructions. It is important to note that the script will copy everything from the current directory and its subfolders to the 1P02 electronic drop box. It is important you are in the correct directory when you run the script. The script will confirm what you have submitted.
9. Log off sandcastle by typing `logout`.

For help in submitting an assignment from home see the COSC Help Center at URL: `http://www.cosc.brocku.ca/help/esubmit`.

DrJava

The folder from which you do the electronic submission should contain the project folder, including all files relevant to the project—the `.java` and `.class` files for the assignment and `.pdf` files for program listings and output.

Other platforms

If you are using an IDE other than DrJava to prepare your assignment at home, you must copy your code into DrJava to create new project(s) and then compile and run and prepare the submission as above. Your electronic submission must only include DrJava project folders and the `.pdf` files as described.