
CSC 1300 LAB 7

Fall 2024

Note: This is to be an individual assignment. No paired programming for this lab.

Learning Objectives

- Debugging someone else's code
- Writing functions with reference variables
- Validating user input (advanced)

Part 1: Future Predictor Program



STEP ONE:

You are given a program that plays the game of predicting a person's future.

Download the given zip file from ilearn, which contains the following files:

- Lab7_given.cpp
- CARS.txt
- DWELLINGS.txt
- LOCATIONS.txt
- PEOPLE.txt

Note that the text files that you are given have Windows EOL (CRLF) and so if you are using a Mac or Linux, you will need to change the EOL.

You may change the text in the text files if you want to. However, the text you write must contain the same type of data. For example, the PEOPLE.txt file should contain people (either real or imaginary).

STEP TWO:

Get the lab7_given.cpp source file to compile and then run it to make sure it works. You will need to create a function named `generateRandomInt()` in order to accomplish this and make sure you are including the appropriate C++ header files.

STEP THREE:

Create two additional functions – one named `getNumChildren()` and the other named `getSalary()`.

In the `getNumChildren()` function, you will cut the code from the main function that gets the three integers (number of children) and validates the integers and then move the code to the `getNumChildren()` function. You will also add more logic when validating the input so that if the user enters a string or character instead of an integer, your program will not mess up or crash but will force the user to enter in a valid number in the valid range. Refer to the sample output snippet below to see what the program should be able to handle.

```
Enter a number between 1 and 100: ace
The number you entered was invalid.
Enter a number between 1 and 100: 394
The number you entered was invalid.
Enter a number between 1 and 100: 2
```

```
Enter another number between 1 and 100: 93
```

```
Enter another number between 1 and 100: ace
The number you entered was invalid.
Enter a number between 1 and 100: 94
```

Do the same thing for `getSalary()` – move the code from the main function to this function and add better validation logic.

```
Enter a number between 10,000 and 500,000: what
The number you entered was invalid.
Enter a number between 10,000 and 500,000: 29,203
The number you entered was invalid.
Enter a number between 10,000 and 500,000: 29203
```

```
Enter another number between 10,000 and 500,000: 94349
```

```
Enter another number between 10,000 and 500,000: 257304
```

STEP FOUR:

Separate this program out into three files instead of a single source file:

- `lab7_header.h` – contains the include guard, `#includes` for the C++ libraries, using namespace `std`, and the function prototypes,
- `lab7_driver.cpp` – contains the main function, and
- `lab7_functions.cpp` – contains the three programmer-defined functions

Part 2: Fill Out the Lab Report

You will fill out this lab report for every lab and it is part of your grade. To get credit, you must upload a screenshot of the confirmation page to this lab assignment. Name your screenshot `lab7ReportProof`.

Lab Report Link: https://tnitech.co1.qualtrics.com/jfe/form/SV_d6BGc6kzQdSvBmS

Sample Output

User input is highlighted in `yellow`.

```
I will predict your future!
First, I need just a little information.
```

```
Enter a number between 1 and 100: ace
The number you entered was invalid.
```

Enter a number between 1 and 100: 394
The number you entered was invalid.
Enter a number between 1 and 100: 2

Enter another number between 1 and 100: 93

Enter another number between 1 and 100: ace
The number you entered was invalid.
Enter a number between 1 and 100: 94

Enter in an awesome job title: Computer Science Professor
Enter in another awesome job title: Toy Tester
Enter in the worst job title ever: Bathroom Cleaner

Enter a company, organization, or restaurant you like: Google
Enter another company, organization, or restaurant you like: Knighthood Games
Enter a company, organization, or restaurant you hate: McDonalds

Enter a number between 10,000 and 500,000: what
The number you entered was invalid.
Enter a number between 10,000 and 500,000: 29,203
The number you entered was invalid.
Enter a number between 10,000 and 500,000: 29203

Enter another number between 10,000 and 500,000: 94349

Enter another number between 10,000 and 500,000: 257304

***** YOUR FUTURE *****

You and your spouse, Megan Thee Stallion will live in a House in 13 Rue Darnel, 62100 Calais, France and drive a Silver 2010 Lincoln MKT.
You and your spouse will have 94 children.
You will work at McDonalds as a Bathroom Cleaner making \$29203 a year.

Would you like to play Future Predictor again? (y/n) **y**

I will predict your future!
First, I need just a little information.

Enter a number between 1 and 100: **ace**
The number you entered was invalid.
Enter a number between 1 and 100: **394**
The number you entered was invalid.
Enter a number between 1 and 100: **2**

Enter another number between 1 and 100: **93**

Enter another number between 1 and 100: **ace**
The number you entered was invalid.
Enter a number between 1 and 100: **94**

Enter in an awesome job title: **Computer Science Professor**
Enter in another awesome job title: **Toy Tester**
Enter in the worst job title ever: **Bathroom Cleaner**

Enter a company, organization, or restaurant you like: **Ravensburger**
Enter another company, organization, or restaurant you like: **Flying Frog Productions**
Enter a company, organization, or restaurant you hate: **Mrs. Winner's**

Enter a number between 10,000 and 500,000: **what**
The number you entered was invalid.
Enter a number between 10,000 and 500,000: **29,203**

The number you entered was invalid.

Enter a number between 10,000 and 500,000: 29203

Enter another number between 10,000 and 500,000: 94349

Enter another number between 10,000 and 500,000: 257304

***** YOUR FUTURE *****

You and your spouse, Marilyn Vos Savant will live in a Mansion in Skwer 1 Dywizji Pancernej WP, 00-221 Warszawa, Poland and drive a Maroon 2010 Nissan Cube.

You and your spouse will have 94 children.

You will work at Mrs. Winner's as a Bathroom Cleaner making \$29203 a year.

Would you like to play M.A.S.H. again? (y/n)n

Goodbye!

What to Turn In

Create a zip file named **TTUsername_lab7** containing the following files and upload it to ilearn. Example: **jdean42_lab7.zip**

- lab7_header.h
- lab7_driver.cpp
- lab7_functions.cpp
- CARS.txt
- DWELLINGS.txt
- LOCATIONS.txt
- PEOPLE.txt
- Lab7ReportProof

Make sure your text files are included too!