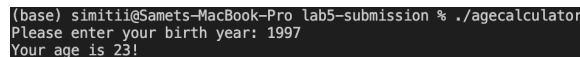# Lab Exercise 5

In this exercise, you are expected to write a C program that asks for the birth year of the user, then calculates the age from it and prints the age. In order for you to get used to Multi-file C Programs and Makefiles, you are required to follow the following steps:

1. Create a directory called "lab5-submission"

2. Create the following files (file names are given in **bold**):

   - **io.c** a source file that will include your implementation for the functions called "ask_birth_year" and "print_age"
   - **io.h** a header file that will include the function declarations for "ask_birth_year" and "print_age"
   - **age.c** a source file that will include your implementation for the function called "calculate_age"
   - **age.h** a header file that will include the function declaration for "calculate_age"
   - **main.c** a source file that will include the main function
   - **Makefile** the makefile for this exercise

3. Write the following function declarations in the corresponding header files (.h) and then implement the functions (including main) in the corresponding source files (.c):

   - **int ask_birth_year();** //asks for the age of the user and returns the birth year
   - **void print_age(int age);** //prints the age of the user
   - **int calculate_age(int birth_year);**//calculates the age (in 2020) from birth year and returns the age

Figure 1: A screenshot showing the working program

4. Write a makefile that includes following target rules (rule names are given in **bold**):

   - **all** compiles everything by depending on "install" target rule (below) and runs the program
   - **install** compiles everything by depending on "agecalculator" target rule (below)
   - **clean** removes the object files (.o) and agecalculator executable
   - **agecalculator** links the object files generated by main.o, io.o and age.o target rules (below) to generate an executable called "agecalculator"
   - **main.o** compiles main.c to generate object file main.o
   - **io.o** compiles io.c to generate object file io.o
   - **age.o** compiles age.c to generate object file age.o

   Note: You are expected to write dependencies between target rules correctly so that make program can run the target rules in the correct order.

5. In the end, please compress (zip) the "lab5-submission" and submit the zip file to the Blackboard.