

## CS 7A Lab 4

1. Write a program that prompts the user to enter their birthday and then computes their age in
  - a. Weeks.
  - b. Days.
  - c. Hours.
  - d. Minutes.
  - e. Seconds.

Submit your code as <your\_initials>lab4.cpp

Note that your results need only be approximate and need only be good for a day of when you wrote the code. To be more robust, you'd need to include the `ctime` library and consider the quirkiness of leap days and if you knew the exact hour/minute/second of birth, you may need to subtract 1 for the leap second that occurred in 2012.

Here is what I came up with for this, but there are many different ways to approach this problem. You could use more variables, give more precise values, etc. Here I made several simplifying assumptions: (1) no leap years, (2) every month has 30 days.

```
// G. Hagopian
// How old is the user?

#include <iostream>
using namespace std;

int main()
{
    //establish today's date
    const int year = 2013, month = 2, day = 20;
    //get user's birthday
    int userBirthYear, userBirthMonth, userBirthDay;
    cout << "\nWhat year were you born? Enter a four digit number: ";
    cin >> userBirthYear;
    cout << "\nWhat month were you born? Enter a number (January=1): ";
    cin >> userBirthMonth;
    cout << "\nWhat day of the month? ";
    cin >> userBirthDay;
    // compute age in days:
    int ageInDays;
    ageInDays = 365*(year - userBirthYear); // ignoring leap days
    ageInDays += 30*(month - userBirthMonth); // all months have 30 days
    ageInDays += day - userBirthDay;
    cout << "\nYou are " << ageInDays << " days old.";
    cout << "\nThis is " << ageInDays/7 << " weeks, "
        << 24*ageInDays << " hours, " << 24*60*ageInDays
        << " minutes, and " << 24*60*60*ageInDays << " seconds." << endl;
}
```

To check that it's working, you might try to get the age of a day-old person, a month old person and a year-old person:

```
What year were you born? Enter a four digit number: 2013
What month were you born? Enter a number (January=1): 2
What day of the month? 19
You are 1 days old.
This is 0 weeks, 24 hours, 1440 minutes, and 86400 seconds.
Press any key to continue . . .
```

```
What year were you born? Enter a four digit number:2012
What month were you born? Enter a number (January=1): 2
What day of the month? 20
You are 365 days old.
This is 52 weeks, 8760 hours, 525600 minutes, and 31536000 seconds.
Press any key to continue . . .
```

```
What year were you born? Enter a four digit number: 1914
What month were you born? Enter a number (January=1): 3
What day of the month? 21
You are 36104 days old.
This is 5157 weeks, 866496 hours, 51989760 minutes, and -1175581696 seconds.
Press any key to continue . . .
```

January 10, 1938 (age 75 years)  
Donald Knuth, Date of birth

<http://recursed.blogspot.com/2008/01/happy-birthday-donald-knuth.html>

```
What year were you born? Enter a four digit number: 1938
What month were you born? Enter a number (January=1): 1
What day of the month? 10
You are 27415 days old.
This is 3916 weeks, 657960 hours, 39477600 minutes, and -1926311296 seconds.
```

Well, that's too many seconds!

<http://www.onlineconversion.com/howold.htm>