Homework #4 – Zeller’s Algorithm

Zeller’s algorithm computes the day of the week on which a given date will fall (or fell). In this exercise, you will write a program to run Zeller’s algorithm on a specific date. You will need to create a new file for this program, **Homework #4**. The program should use the algorithm outlined below to compute the day of the week on which the user’s birthday fell in the year you were born and print the result to the screen.

Start with the program in Homework #1, exercise 1.5, but ask for the month as a number between 1-12 where March is 1 and February is 12. If born in Jan or Feb, enter previous year (see the notes below). In the end, print out the name of the user and on what day of the week they were born.

Zeller’s algorithm is defined as follows:

Let A, B, C, D denote integer variables that have the following values:

A = the month of the year, with March having the value 1, April the value 2, . . ., December the value 10, and January and February being counted as months 11 and 12 of the preceding year (in which case, subtract 1 from C)

B = the day of the month (1, 2, 3, . . . , 30, 31)

C = the year of the century (e.g. C = 89 for the year 1989)

D = the century (e.g. D = 20 for the year 2010)

Note: if the month is January or February, then the preceding year is used for computation. This is because there was a period in history when March 1st, not January 1st, was the beginning of the year.

Let W, X, Y, Z, R also denote integer variables. Compute their values in the following order using integer arithmetic:

W = (13\*A -1) / 5

X=C/4

Y=D /4

Z = W + X + Y + B + C -2\*D

R = the remainder when Z is divided by 7

The value of R is the day of the week, where 0 represents Sunday, 1 is Monday, . . ., 6 is Saturday. If the computed value of R is a negative number, add 7 to get a non negative number between 0 and 6 (you don’t need to do this in the code). Print out R. You can check to be sure your code is working by looking at http://www.timeanddate.com/calendar/.

Run some test cases-try today’s date, your birth date, and whatever else interests you!