

COSC1410
Spring 2016

Assignment 2: Flow Control

[1] **Objective:** Testing your knowledge of if, if-else, while loop, and loop with sentinel.

[2] **Description:** Write a C++ program that will allow you to enter a valid year and then a valid month until the user chooses to stop. After entering a year, you should check if the year is a positive integer. If yes, the program allows to enter a month. After entering a month, you should check if the month is within the range of 1 to 12 inclusively, and if it is then you will display number of days of that month. If the number is not valid, you will display a proper error message. After you finish entering all the year/month, you will show the total number of valid entries in that session.

Note:

1. **Must** use “**else if**” when applicable (Do NOT use if only without the **if else and else** when needed).
2. **Must** use loop to enter more than one year/month until the user chooses to stop.
3. **Must** allow the user to enter **at least ONE valid year/month** before allowing them to exit the program.
4. Year must be a positive integer number. Month must be an integer **from 1 to 12**.
5. **Must** display error message when **INVALID** year/month is entered.
6. **Must** display correct number of valid attempts.
7. The program should recognize both **lowercase** and **uppercase** “yes” and “no” input answers. (Y/y and N/n as input)
8. **Must** use meaningful variables.
Example: int y; should be int year;
9. **Must** use proper indentation.
10. You can use the following **algorithm** for your leap year **calculation**.

```
IF year MODULER 400 IS 0
THEN leap_year
ELSE IF year MODULER 100 IS 0
    THEN not_leap_year
    ELSE IF year MODULER 4 IS 0
        THEN leap_year
        ELSE not_leap_year
```

[3] **Input:** Interactively test your program multiple times.

[4] **Output:** See the example below.

[5] **Deadline:** Due Date: February 17, 2016 (Wednesday)

```
Enter a year (Must be a positive integer): 2016
Enter a month (Must be a between 1 and 12): 2
The month has 29 days.

Do you wish to enter another year? (Y/N): y

Enter a year (Must be a positive integer): 2016
Enter a month (Must be a between 1 and 12): 12
The month has 31 days.

Do you wish to enter another year? (Y/N): y

Enter a year (Must be a positive integer): 2000
Enter a month (Must be a between 1 and 12): 2
The month has 29 days.

Do you wish to enter another year? (Y/N): y

Enter a year (Must be a positive integer): 1960
Enter a month (Must be a between 1 and 12): 13
**** ERROR: **** '13' is an INVALID month. Month must be between 1 and 12

Do you wish to enter another year? (Y/N): y

Enter a year (Must be a positive integer): 1960
Enter a month (Must be a between 1 and 12): 3
The month has 31 days.

Do you wish to enter another year? (Y/N): n

Number of valid entries: 4
Press any key to continue . . .
```

Remarks: Your code may be over 50 lines.