CSC Assignment 2 – Due Thursday 1/25 at class time

Project name: hw2

File Name – hw2.cpp

make sure it is in your homework project in the repository

Write a program that will prompt the user for a valid date. You do not have to validate the month, day and year. Then using bitwise operators, combine the 3 values within a function to form a single integer date. **Then set the month, day and year variables to zero** and write a second function that will extract the month, day, and year from the integer date. Display the integer date and the extracted values in the main function, no output in the functions.

Your functions will look like the following calls. // make sure and set m,d,y to zero before function call. Otherwise you do not know if your extractDate function works.

date = compressDate( m, d, y);

m=0;

d=0;

y=0;

extractDate( date, m, d, y);

The masks you will need for the assignment are

int daymask = 63; // lower 6 bits set

int monthmask = 15; // lower 4 bits set

int yearmask = 4095; // lower 12 bits set

A sample run of you program will resemble the following. User input is bolded.

Enter a date (m d y): **1 25 2016**

The compressed date is: 2064473

The extracted date is: 1/25/2016

Watch the video in the “Gitlab Content” doing the next Homework Assignment.

3 pts for converting month, day and year into an integer date.

3 pts for converting an integer date back into the month, day and year. (make sure variables are zeroed before function call)

Make sure that you have this in your git repository and has the homework header.

Just below the homework header, create three test cases and verify you are getting the correct answer by hand. (use the calculator). Comment these testcases at the bottom of your code. No other format will be accepted. Line your bits for each number up with the combined date. This is a good visual test.

Example:

/\*

 \* Test Case 1:    1 25 2016

 \* Combined Date:  2064473      00000000 00011111 10000000 01011001

 \* Day  :    25                                        011001

 \* Month:          1                                    00 01

 \* Year :  2016                    011111 100000

 \*/

If I have questions on your code, I will check it out of your repository and run it.