PROBLEM STATEMENT:

Design a class which will model the behavior of 4-bit binary numbers.
You must be able to add and multiply two 4-bit binary numbers

CODE:

The class is to be called binNum and must consist of a character array of size 4
(4 for the bits) - to hold the binary number, overloaded +, * operators and overloaded
insertion/extraction operators.
You might want to have a class member called aBit hold an individual bit of a binary number.
The user will be asked to enter 4-bit binary numbers.
store these as objects of BinNum type
Then they will be asked if they wish to add or multiply the numbers. The results are to be displayed in
both binary and base 10 form along with the user entered numbers.
        For example, if the user entered
        1101 and 0011
        the output should display(if addition chosen) as

                In binary form: 1001 + 1101 = 0110
                In base 10 form: 9 + 13   = 6

You must have a function called bin2Base10 – this function will convert any 4-bit binary number
and return its base 10 equivalent.
Excepting this function, bin2Base10, ***no integer addition permitted: a failing grade will be given*** if
integer addition appears anywhere in your code outside of this function.
The file containing main must be named project3_driver.cpp
The file for the class must be named binNum.h and binNum.cpp
You most likely will need another file for auxiliary functions (greet, menus, etc); call this file misc_ops.h
and misc_ops.cpp((no prototypes/implementations in main)
starting files bin_defs.h   binNum.h   bin_defs.cpp binNum.cpp   are provided. No changes permitted
to .h files
Write code for a copy constructor and the = operator.
Your program must, of course, run more than once: loop until the user wishes to quit

DELIVERABLES:

        hard :
                In a bound folder
                        1. documented source code
                        2. user and **class manuals**

        Due Date : 9:00am 18 December 2023

        soft:
                in a zipped file, called CS121_P3_yourLastName
                        1. all source code
                        2. release version executable. The .exe must be compiled and run on
                           windows (no exe, grade = 0]; would you ever ship a product without
                           the application exe for the user ?
                        3. user manual and class manual
                           Of course, documentation standards need to be followed
                        4. **Do NOT include any other files. Other files included will
                           receive an automatic 15 point deduction**

                        submitted to BrightSpace to CS121_P3_ANS

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