Spring 2021

BONUS Credit- 10 points

Programming Assignment

(Hints: You may use instructions from Chapters 05/06)

Problem 1: **PIN Validation**[5 points]

Your task is to create a procedure named Validate_PIN that receives a pointer to an array of byte containing a 5-digit PIN. Declare two arrays to hold the minimum and maximum range values, and use these arrays to validate each digit of the PIN that was passed to the procedure. If any digit is found to be outside its valid range, immediately return the digit's position (between 1 and 5) in the EAX register. If the entire PIN is valid, return 0 in EAX. Preserve all other register values between calls to the procedure. Write a test program that calls Validate_PIN at least four times, using both valid and invalid byte arrays. By running the program in a debugger, verify that the return value in EAX after each procedure call is valid. Or, if you prefer to use the book's library, you can display "Valid" or "Invalid" on the console after each procedure call. Use this table to validate the ranges:

Digit Number	Range
1	5 to 9
2	2 to 5
3	4 to 8
4	1 to 4
5	3 to 6

Problem 2: **Fibonacci Generator**[5 points]

Write a procedure that produces **N** values in the Fibonacci number series and stores them in an array of *doubleword*. Input parameters of the procedure

should be a pointer to an array of *doubleword*, a counter of the number of values (N) to generate. Write a test program that calls your procedure, passing N = 47. The first value in the array will be 1, and the last value will be 2,971,215,073. Use the Visual Studio debugger to open and inspect the array contents.

Additional instructions:

- Create two separate files for the above problems:
LastName_FirstName_bonus_p1.asm and
LastName_FirstName_bonus_p2.asm.

- Submit the files via moodle through the submission link of this assignment.

- Due: 9 May 2021 Sunday 11:59pm.