ECE 242 – Programming Assignment #1 **Spring 2021**

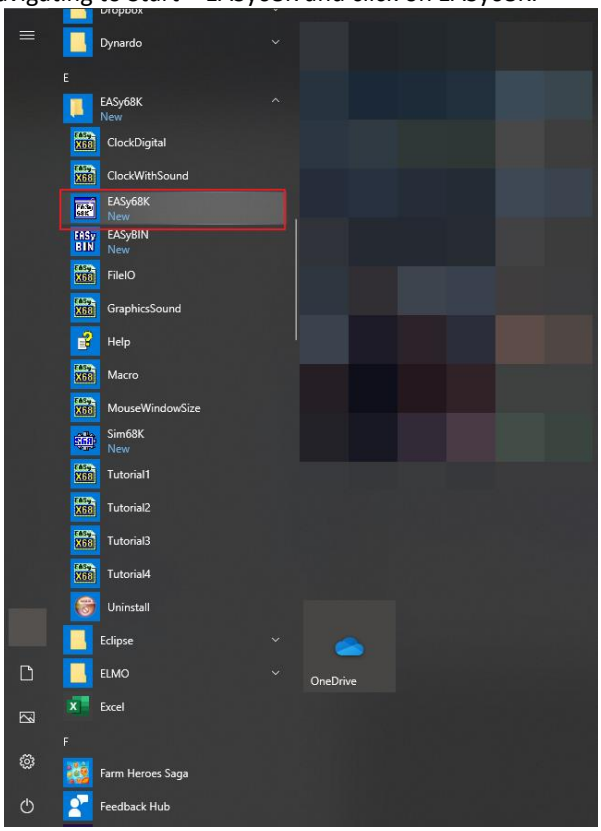
Due Date: Tuesday, February 23rd 2021, 11:59PM

This course will require the use of Windows based computer with Internet access and e-mail capability. The first assignment is very simple. Its purpose is to assure that the computer that you are using meets these criteria and that you are using it properly.

1. Watch Easy68K Presentation and Demo Video on the Blackboard by TA

2. Download and install EASy68K
   a. Go to the sharable link below:
   b. https://drive.google.com/drive/folders/19DCzMZIOCVsC1uuFwQRTrGevO-7-Yyfr
   c. Download SetupEASy68K.exe
   d. Run the setup file and follow the instructions

3. Run EASy68k by navigating to Start > EASy68K and click on EASy68K.



4. In the comment header at the top of the editor window, enter the appropriate information as shown:

```
*-----------------------------------------------------------------------------
* Program       : First_Program
* Written by    : First name Last name
* Date          : mm/dd/yyyy
* Description   : The first program for the ECE 242 course
*-----------------------------------------------------------------------------------------------------
```

5. In the main body of the program code, enter the following comments:

```
            ORG     $1000
START:                          ; first instruction of program

            * Bit is one binary digit. This is in fact the smallest unit of information.
            * Nibble equals four bits and a Byte equals eight bits.
            * I am a real expert with these terms.
            * A word refers to the number of bits (data) the CPU handles as one unit.
            * For our case, it is 16 bits.
            * A longword is double the size of the word.
            * Memory is measured in Bytes.
            * It is in K's, where 1K = 1,024 Bytes.

            MOVE.B  #9,D0
            TRAP    #15             ; halt simulator
```

6. Save this new file with its name equal to your last name (or its first seven letters if longer) followed by "_PA1-1" (example: DOE_PA1-1.X68). Also, take a screenshot of this code.

7. Then make the following changes:
    a. In line 1, change "one" to "is equal to"
    b. In line 2, after "and", add "surely"
    c. Delete line 3
    d. Insert the following line at the top: Some computer terms are described below.
    e. Insert this line at the bottom: This was a piece of cake

8. Save this new file with its name equal to your last name (or its first seven letters if longer) followed by "_PA1-2" (example: DOE_PA1-2.X68). Do not destroy your original file. Also, take a screenshot of this code.

9. Submit a report explaining the following, along with the two screenshots taken from above:
    a. What do symbols "*" and ";" mean in the code?
    b. What does the "START" label indicate in the code?
    c. What do you think ORG means in the code?
    d. What do you think the instruction "MOVE.B #9,D0" mean?
    e. Indentation is important when programming Assembly language.

10. Submit the two files from Step 6 and 8, and the report from Step 9 to the Blackboard.