60-266 – Assignment #4

DUE DATE is: *Friday, March 16, 2018.* To be submitted via Blackboard by Midnight.

WARNINGS: You must only use instructions and directives discussed from Lecture 1 (Chapt_01) to Lecture 9 (Chapt_06).

Programming Exercise (40 points): [call it Ass4.asm]

1. (10 points) Write a procedure called HexOutput that displays the content of register EBX as a hexadecimal string. See the algorithm's pseudocode in Slide-51 of Chap_06 (Lecture-9). A full solution for the binary case (BinOutput) also appears in Slide-48 and Slide-49 of Lecture-9 (I have explained and traced this solution in classroom).

   For example: If EBX contains **1111 1110 0000 0001 1100 1000 0011 0111**, then the procedure HexOutput should display the hexadecimal **string** "**FE01C837h**"; *note: make sure that character **'h'** is displayed at the end.*

2. (10 points) Write a procedure called HexInput that loads the register EAX with the numerical value of the hexadecimal string entered at the keyboard. See the algorithm's pseudocode in Slide-52 of Chap_06 (Lecture-9). A full solution for the binary case (BinInput) also appears in Slide-50 of Lecture-9 (I have explained and traced this solution in classroom).

   For example: EAX is loaded with **1111 1110 0000 0001 1100 1000 0011 0111**, when the procedure HexInput reads the hexadecimal **string** "**FE01C837h**"; *note: make sure that character **'h'** is the last character read from keyboard.*

3. (20 points) To test these two procedures, above, your main program should first ask you "**What do you want to do?**".
   a. If you type the letter **W** (or **w**) then the main program reads an unsigned 32-bit decimal number from the keyboard, and loads the number into EBX, and then calls the procedure HexOutput (which displays a hexadecimal string).
   b. If you type the letter **R** (or **r**) then the main program calls the procedure HexInput (which reads a string from the keyboard, then loads it into EAX), and then displays the binary content of register EAX.
   c. It exits with the message "**Get Lost Sweetey Honey Bun**" if you type anything else ☺. In a and b, above, the main program exits with "**Thank you Sweetey Honey Bun**".