50 pts

Name: _____

Class Day / Time: _____

Due Date: _____

Assignment #2 – Assembly - Multiplication

In this assignment you will write two x86-assembly programs to multiply two unsigned integer numbers. Each program will read two numbers from the console, calculate its product and output the result to the console.

The first program will calculate the result of the multiplication using multiple additions, using an assembly ADD and LOOP instructions. The second program will calculate the result of the multiplication using an assembly MUL instruction.

Instruction	**Comment**	**Code**	**Operation**
ADD	Add	ADD Dest, Source	Dest = Dest + Source
LOOP	Counting Loop	LOOP Dest	ECX = ECX – 1; If ECX != 0; jump Dest
MUL	Multiply (unsig.)	MUL Op (8-bits)	AX = AL*Op

Draw a flowchart and **write the corresponding assembly language program** in the flowchart for each program you are implementing. It is not necessary to indicate memory locations in the flowchart, but include all the variable declaration as part of the flow chart.

Implement the two programs; test each program a number of times with a different data. You may limit the result to one unsigned byte (< 256). You will need to turn in **three** test runs for each program:

a. using small numbers (result is **two** digits result)
b. using larger numbers (result is **three** or more digits results)
c. multiplying by zero (use one **three** digits number)

Turn in (STAPLED IN THIS ORDER)

1. The **FIRST PAGE** of this assignment as a coversheet
2. Include the **flowcharts** properly documented. The listing of **.asm source codes** properly documented and the listing of **.mak file**
3. The **three** output from each program, either pasted into .asm source code or using print screen