Course Code: CSE 331L/EEE 332L/EEE453L/ETE332L

Course Title: Microprocessor Interfacing & Embedded System Lab

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Home Work 1: Problem Solving

Problem 1: A class teacher has the marks for 10 students. He wants to create a distribution based on the frequency of the marks obtained by the students. The exam was out of 5.

Example:

1	5	3	1	2	4	5	1	4	4	2	1

Marks	0	1	2	3	4	5
Frequency	0	4	2	1	3	1

Write a program that will count the frequency of the marks attained by the students. Create an array of size 6. Load the arrays with marks of your choice. Try to add some repetitions so that it simulates a real exam scenario. Create a second array. This array will contain the frequency of the marks. You may use the indices of the array to represent the mark. Study the example. You do not have to print anything.

Problem 2: Create a program to calculate the value of the formula-

$$(a + b)^2 = a^2 + 2ab + b^2$$

Take the value of a & b from user and store the result in memory using **AUX** operation.

Problem 3:

Write a program to calculate the number of ones in the binary string of a number. Use "Shift Left" instruction to do the task.

Problem 4:

Write a program, in assembly language, that will generate the first 10 Fibonacci Numbers. Assume that the first two numbers are included.

You do not have to print any numbers, demonstrate the output using the AUX options in EMU8086.