An-Najah National University
Department of Computer Engineering
Microprocessors (10636322)

Assignment # 1 (ILO 1)

Assuming 8088 based system, solve the following questions:

1- Write Assembly code to convert a packed BCD byte in AL to binary. Example: suppose Al = 35H which represents the decimal number 35. It should be converted to 00100011 = 23H = 2*16+3 =35d.

2- Given an array of 200 signed bytes stored at starting address Array.
   a. Declare the variable in Assembly
   b. Compute the Average of the array. Result should be in AL and AH.
      Hint: Make sure that you use 16bits for additions.

3- Given the following C code:

```
 short A[100], B[100], C[100];
// assume that arrays A and B are already filled with data
short i;
for( i=0;i<100;i++){
   C[i]= A[i]-B[i];
}
```

   a- Convert the code to assembly, using relative addressing
   b- Repeat the solution using indirect addressing

4- Given a 64-bit word stored at address N1
   a- Declare the variable
   b- Increment the value of N1
   c- Negate the value of N1
   d- Suppose it was 386 based system, repeat the previous parts
   e- Suppose it was Core i7 based system, repeat the previous parts

5- Given 2KB block of memory at address 1000:0200H
   a- Copy the block to physical address 2000:0100H
   b- Repeat the solution but without string instructions
   c- Move the block to physical address 1000:0300H

6- Write an inline assembly code that sorts an integer array in descending order. Declare the array and fill it using C instructions, the rest should be done in assembly.

Deadline: Sunday 05/04/2020

Good Luck