Alexandria University
Faculty of Engineering

Computer Organization
Fall 2023
Assigned: 2/12/2023
Due: 9/12/2023

Lab 1

1. Development Environment Setup

For WINDOWS:

1. Download DosBox: http://www.dosbox.com/
2. Download debug.exe: http://www.mediafire.com/download/5tgh2i2etzguvv2/debug.exe
3. Use DosBox to open the debug.exe program: https://www.youtube.com/watch?v=wSvE3Uo6_DU
4. Open the debug window by executing: debug.exe in the DosBox command line.

For MAC: https://www.youtube.com/watch?v=9EMs3x-LJvs
DEBUG Commands: http://thestarman.pcministry.com/asm/debug/debug2.htm

2. Problem One

Execute the assembly code below in the debug window:

```
E 300 05 00
A 100
MOV AX, 1
MOV CX, [300]
MUL CX
LOOP 107
INT 3
```

Trace this code to specify its functionality and explain the values existing in the registers upon execution.

3. Problem Two

Execute the assembly code below in the debug window:

```
E 400 0A 00
A 100
MOV AX, 0
MOV BX, [400]
CMP CX,BX
JA 112
ADD AX,CX
ADD CX, 2
JMP 107
INT 3

A 200
MOV CX, 1
JMP 100

A 300
MOV CX, 0
JMP 100
```

Trace this code to specify its functionality and explain the values existing in the registers upon execution. Execute using g = 200 and g = 300.

4. Problem Three

Write and execute an assembly program that sums two numbers each of 10 bytes and puts them in a memory location. Make sure to store the last carry. Assume the two numbers are stored in memory locations 300 and 400 respectively. Store the result in memory location 500

Example:

```
   CF BD 22 0F 82 46 4E 47 96 C7
 + 40 00 6B 1E 7C BA 6D 07 EF 0D
= 1 0F BD 8D 2D FF 00 BB 4F 85 D4
```

You should submit a detailed report with screenshots and codes

You should work individually