CS322- Lab 2

Assembly language Programming

Task 1:

For each of 10 problems that you have selected in Lab 1, split the components as shown in table. (submit **hand written** scan copy (a single pdf)). State clearly the problem followed by table and results/observation (if any). Problems selected from examples that are given in the simulator will not be given points . Preferably you can take from the exercises given in the books
https://u.pcloud.link/publink/show?code=kZXIm0XZjadstSonCeSMYtYyjJD07B7kFGny

(10x6=60)

PROGRAM:

ADDRESS	OPCODE	LABEL	MNEMONICS	OPERAND	COMMENT
6100	0E	START	MVI	C, 00	Clear C reg.
6101	00				
6102	21		LXI	H, 6500	Initialize HL reg. to 6500

OBSERVATION:

INPUT		OUTPUT	
6500		6502	
6501		6503	

Example:

```
                    ;PROGRAM TO SORT AN ARRAY OF DATA IN DESCENDING ORDER

4100                    ORG  4100H     ;specify program starting address.

4100  3A 00 42            LDA  4200H     ;Load the count value in A-register.
4103  47                  MOV  B,A       ;Set counter for N-1 repetitions
4104  05                  DCR  B         ;of N-1 comparisons.
4105  21 00 42    LOOP2: LXI  H,4200H   ;Set pointer for array.
4108  4E                  MOV  C,M       ;Set count for N-1 comparisons.
4109  0D                  DCR  C
410A  23                  INX  H         ;Increment the pointer.
410B  7E            LOOP1: MOV  A,M       ;Get one data of array in A.
410C  23                  INX  H         ;Compare the next data of array with
410D  BE                  CMP  M         ;the content of A-register.
410E  D2 16 41            JNC  AHEAD     ;If content of A is greater than content
                                         ;of memory addressed by HL pair,
                                         ;then go to AHEAD.
4111  56                  MOV  D,M       ;If the content of A is less than content
4112  77                  MOV  M,A       ;of memory addressed by HL pair,
4113  2B                  DCX  H         ;then exchange content of memory pointed
4114  72                  MOV  M,D       ;by HL and previous memory location.
4115  23                  INX  H
4116  0D            AHEAD: DCR  C
4117  C2 0B 41            JNZ  LOOP1     ;Repeat comparisons until C count is zero.
411A  05                  DCR  B
411B  C2 05 41            JNZ  LOOP2     ;Repeat N-1 comparison until B count is zero.
411E  76                  HLT            ;Halt program execution.

411F                    END            ;Assembly end.
```

Input Data :

	Memory address	Content
07	4200	07
C4	4201	C4
84	4202	84
9A	4203	9A
7B	4204	7B
E2	4205	E2
F4	4206	F4
B2	4207	B2

(Before sorting)

Output Data :

	Memory address	Content
07	4200	07
F4	4201	F4
E2	4202	E2
C4	4203	C4
B2	4204	B2
9A	4205	9A
84	4206	84
7B	4207	7B

(After sorting)

Task 2

Draw Timing Diagram of 10 key instructions from task 1. (Hand drawn only)

It should be different instructions.

(10x4 = 40)

Your Lab 2 (100 points)
Submit here:

https://u.pcloud.com/#page=puplink&code=ffl7Z0u27aE64RvSiVxx3BOV8RYcFRr6y

. **Due on 7th Sept 8 AM**.