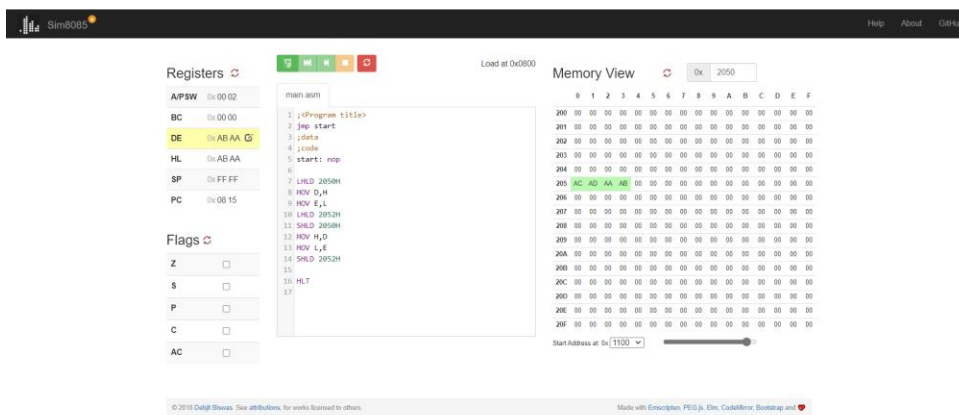


8085 Assembly Language Programs

(Assignment -06)

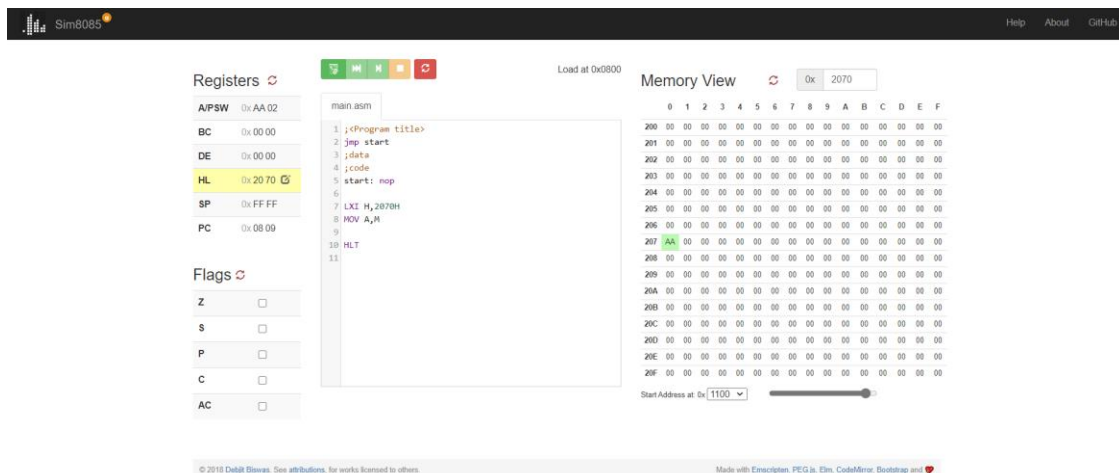
 **Design an 8085 Assembly Language Program for the following definitions:**

A) Write an 8085 Assembly language program to interchange 16-bit data stored in memory locations 2050, 2051, 2052, and 2053 without XCHG instruction.

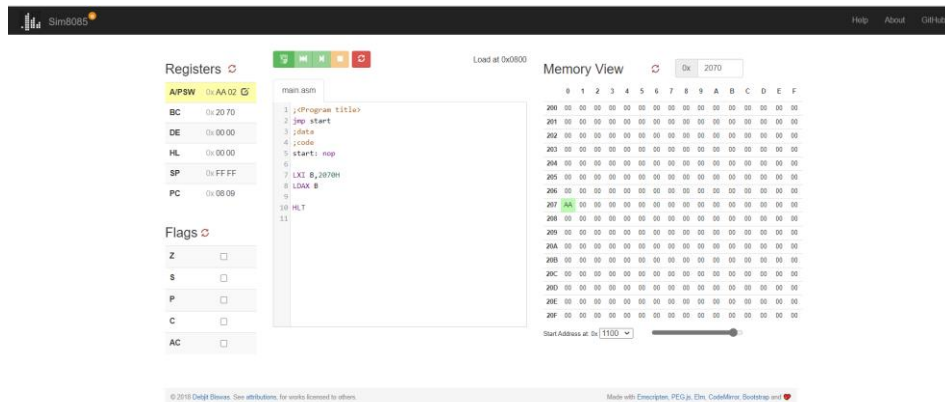


B) The memory location 2070H holds the data byte F2H. Write instructions to transfer the data byte to the accumulator using three different Opcode: MOV, LDAX, and LDA.

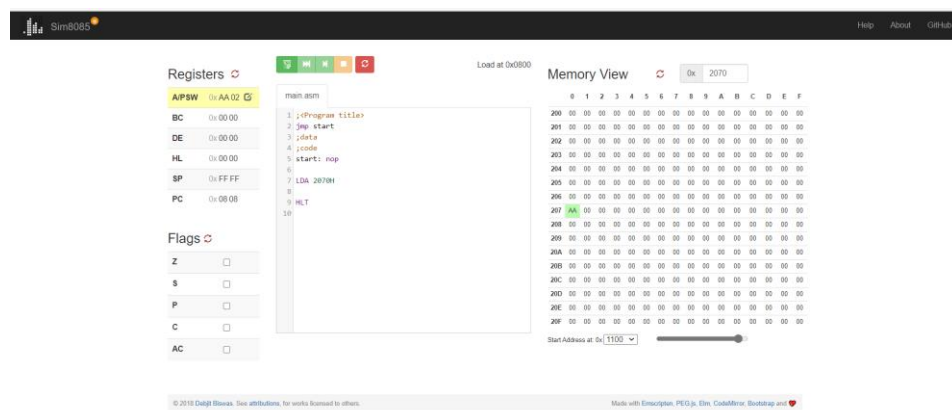
i. MOV:



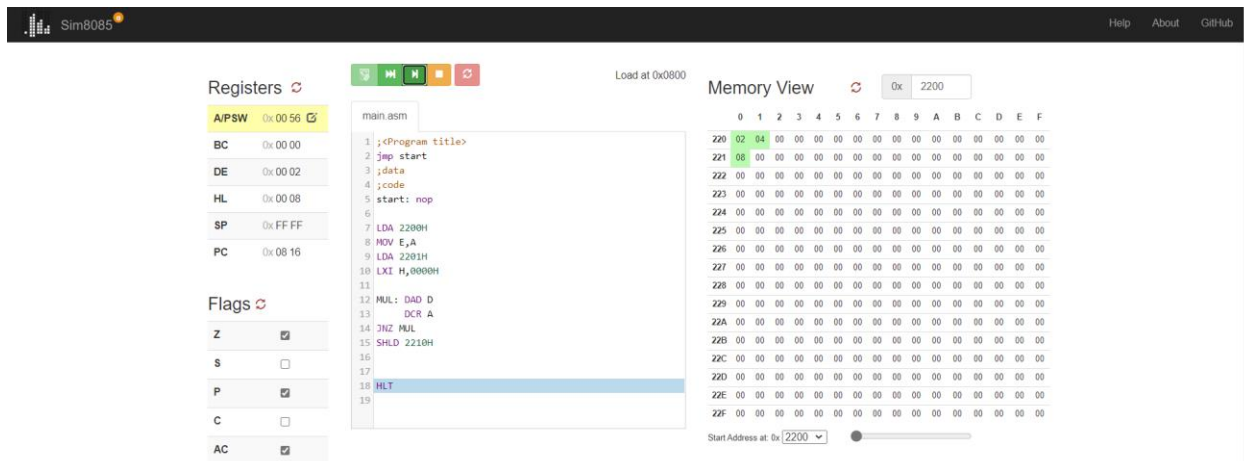
ii. LDAX:



iii. LDA:



C) Write assembly language program to do multiplication of two numbers. Specify the memory location of each and every instruction and also draw flowchart.



D) An array of twenty data bytes is stored on memory locations 2000H onwards. Write an 8085-assembly language program to count the number of zeros, odd numbers and even numbers and store them on memory locations 3000H, 3001H and 3002H, respectively.

Registers:

A/PSW	0x1456
BC	0x1400
DE	0x0000
HL	0x2014
SP	0xFF FF
PC	0x0845

Flags:

Z	<input checked="" type="checkbox"/>
S	<input type="checkbox"/>
P	<input checked="" type="checkbox"/>
C	<input type="checkbox"/>
AC	<input checked="" type="checkbox"/>

main.asm

```

1: <Program title>
2: jmp start
3: ;data
4: ;code
5: start: nop
6:
7: LXI H, 2000H
8: MVI C, 14H
9: Main: MOV A, H
10: CPI 00H
11: JZ Zero
12: ANI 01H
13: JZ Even
14: JNZ Odd
15: Even: INR B
16: JMP Prog
17: Odd: INR D
18: JMP Prog
19: ANI 01H
20: JZ Even
21: JNZ Odd

```

Memory View (Start Address: 0x1100):

Address	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
200	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
201	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
202	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
203	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
204	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
205	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
206	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
207	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
208	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
209	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
20A	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
20B	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
20C	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
20D	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
20E	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
20F	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Registers:

A/PSW	0x1456
BC	0x1400
DE	0x0000
HL	0x2014
SP	0xFF FF
PC	0x0845

Flags:

Z	<input checked="" type="checkbox"/>
S	<input type="checkbox"/>
P	<input checked="" type="checkbox"/>
C	<input type="checkbox"/>
AC	<input checked="" type="checkbox"/>

main.asm

```

21: JNZ Odd
22: Even: INR B
23: JMP Prog
24: Odd: INR D
25: JMP Prog
26: Zero: INR E
27: JMP Prog
28: Prog: INR L
29: DCR C
30: JNZ Main
31:
32: MOV A, E
33: STA 3000H
34: MOV A, D
35: STA 3001H
36: MOV A, B
37: STA 3002H
38:
39: HLT
40:
41:

```

Memory View (Start Address: 0x2200):

Address	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
300	00	00	14	00	00	00	00	00	00	00	00	00	00	00	00	00
301	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
302	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
303	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
304	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
305	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
306	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
307	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
308	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
309	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
30A	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
30B	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
30C	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
30D	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
30E	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
30F	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00