ASIAN SCHOOL OF MANAGEMENT AND TECHNOLOGY

[Affiliated to Tribhuvan University]

ASSIGNMENT: KIT LAB REPORT OF MICROPROCESSOR

Submitted By

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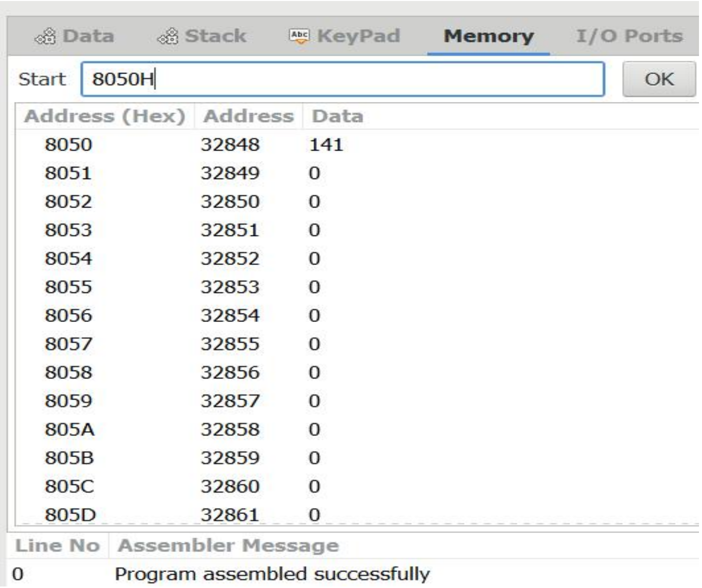
1.Write a program to add 56H and 37H and store the sum in memory address 8050H.

```
MVI A, 56H

ADI 37H

STA 8050H

HLT
```

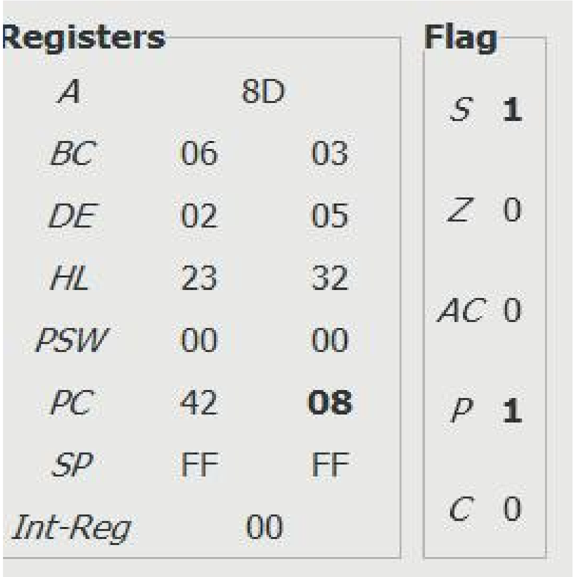
OUTPUT:



Start 8050H

Address (Hex)	Address	Data
8050	32848	141
8051	32849	0
8052	32850	0
8053	32851	0
8054	32852	0
8055	32853	0
8056	32854	0
8057	32855	0
8058	32856	0
8059	32857	0
805A	32858	0
805B	32859	0
805C	32860	0
805D	32861	0

Line No	Assembler Message
0	Program assembled successfully



Registers

A	8D	
BC	06	03
DE	02	05
HL	23	32
PSW	00	00
PC	42	08
SP	FF	FF
Int-Reg	00	

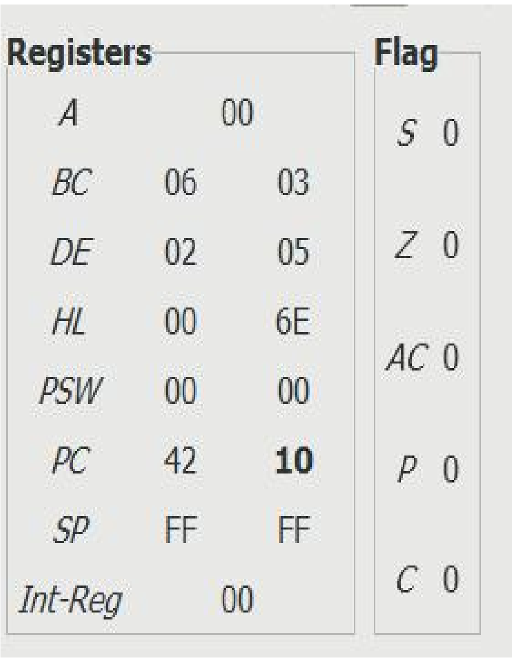
Flag

S	1
Z	0
AC	0
P	1
C	0

2.Write a program to add two number store in 8050H and 8051H and store the sum in 8052H.

```
LDA 8050H

MOV H, A

LDA 8051H

ADD H

MOV L, A

MVI A, 00

MOV H, A

SHLD 8052H

HLT
```

OUTPUT:

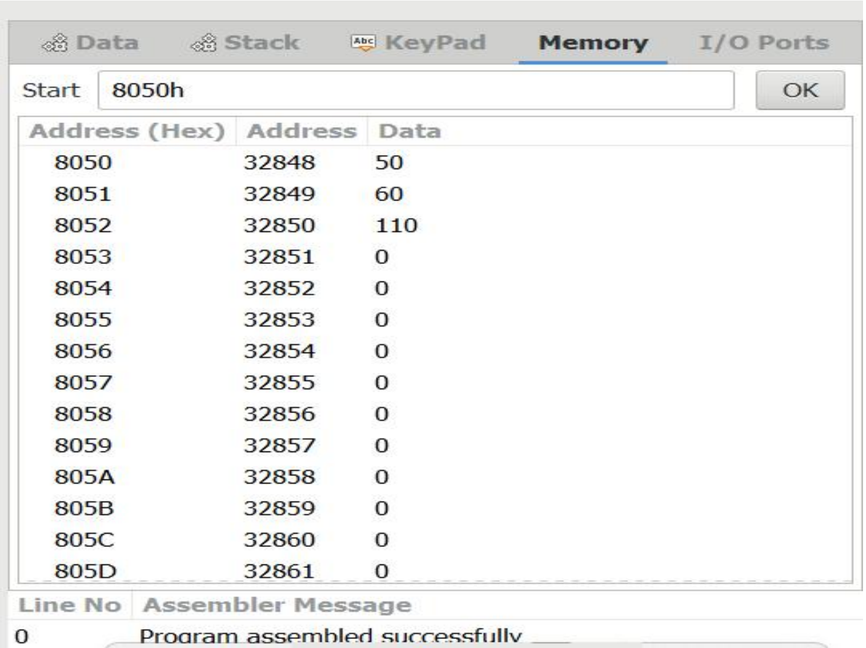


Registers

A	00	
BC	06	03
DE	02	05
HL	00	6E
PSW	00	00
PC	42	**10**
SP	FF	FF
Int-Reg	00	

Flag

S	0
Z	0
AC	0
P	0
C	0



Start 8050h

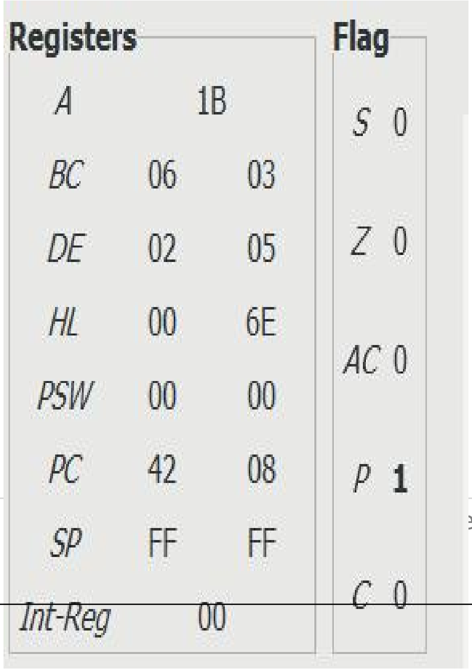
Address (Hex)	Address	Data
8050	32848	50
8051	32849	60
8052	32850	110
8053	32851	0
8054	32852	0
8055	32853	0
8056	32854	0
8057	32855	0
8058	32856	0
8059	32857	0
805A	32858	0
805B	32859	0
805C	32860	0
805D	32861	0

Line No	Assembler Message
0	Program assembled successfully

3.Write a program to subtract 37H from 52H and store the difference in memory address 8050.

```
MVI A, 52H

SUI 37H

STA 8050

 HLT
```

OUTPUT:

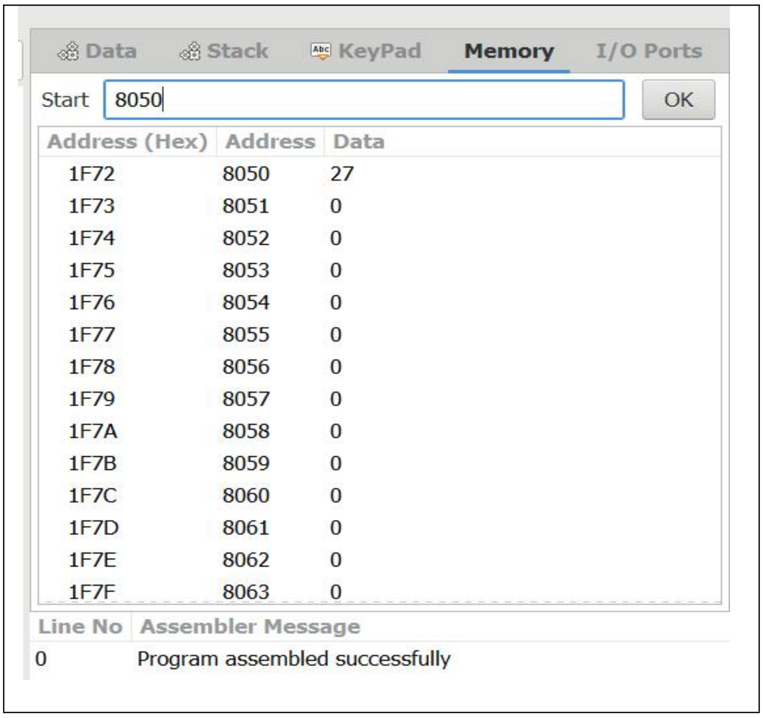


Registers

A	1B	
BC	06	03
DE	02	05
HL	00	6E
PSW	00	00
PC	42	08
SP	FF	FF
Int-Reg	00	

Flag

S	0
Z	0
AC	0
P	1
C	0



Start 8050

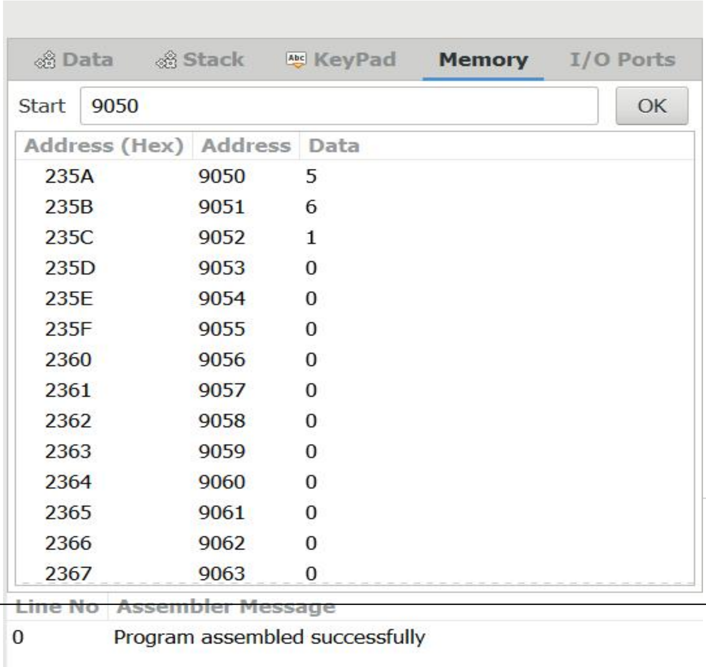
Address (Hex)	Address	Data
1F72	8050	27
1F73	8051	0
1F74	8052	0
1F75	8053	0
1F76	8054	0
1F77	8055	0
1F78	8056	0
1F79	8057	0
1F7A	8058	0
1F7B	8059	0
1F7C	8060	0
1F7D	8061	0
1F7E	8062	0
1F7F	8063	0

Line No	Assembler Message
0	Program assembled successfully

4.Write a program to find the difference of number stored in location 9050 and 9051 and stored the difference in 9052.

```
LDA 9050

M0V B, A

LDA 9051

SUB B

STA 9052

HLT
```

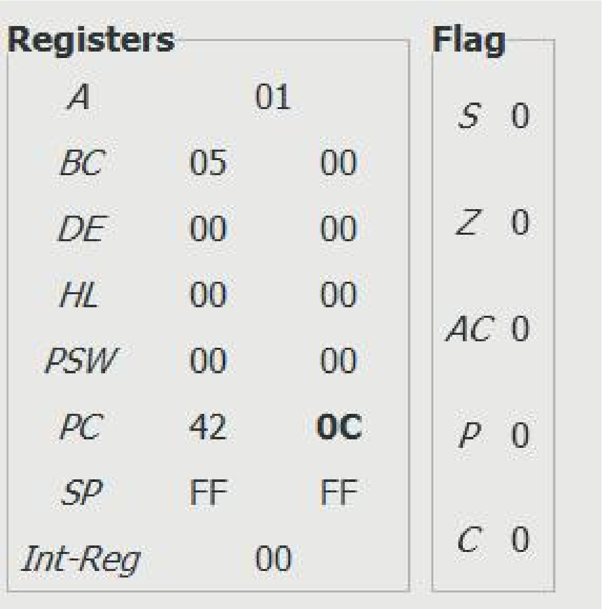
OUTPUT:



Start 9050

Address (Hex)	Address	Data
235A	9050	5
235B	9051	6
235C	9052	1
235D	9053	0
235E	9054	0
235F	9055	0
2360	9056	0
2361	9057	0
2362	9058	0
2363	9059	0
2364	9060	0
2365	9061	0
2366	9062	0
2367	9063	0

Line No	Assembler Message
0	Program assembled successfully



Registers

A	01	
BC	05	00
DE	00	00
HL	00	00
PSW	00	00
PC	42	**0C**
SP	FF	FF
Int-Reg	00	

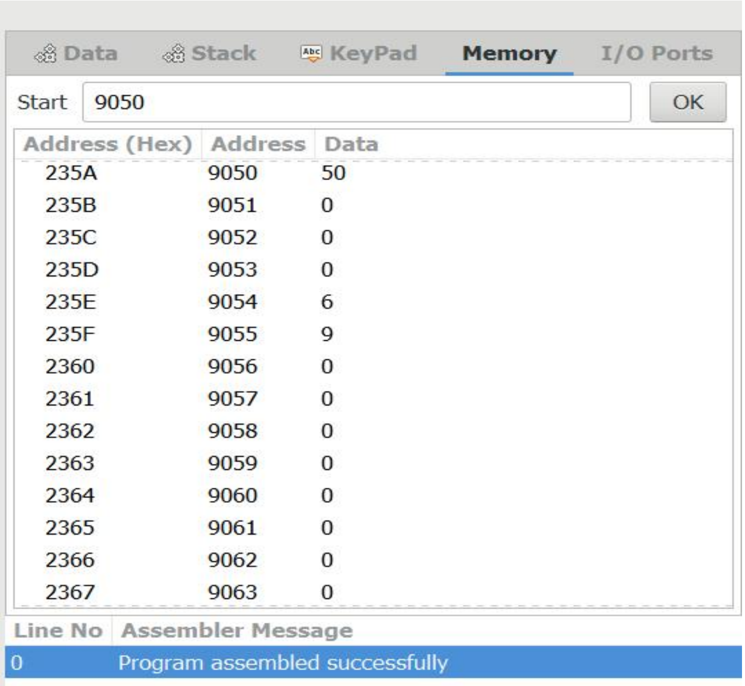
Flag

S	0
Z	0
AC	0
P	0
C	0

5.Write a program to find greater number between two number stored in location 8050H and 8051H and stored the bigger number in memory address 9050H.

```
LDA 8050H

MOV B, A

LDA 8051

CMP B

JNC GREATER

MOV A, B

GREATER: STA 9050

HLD
```

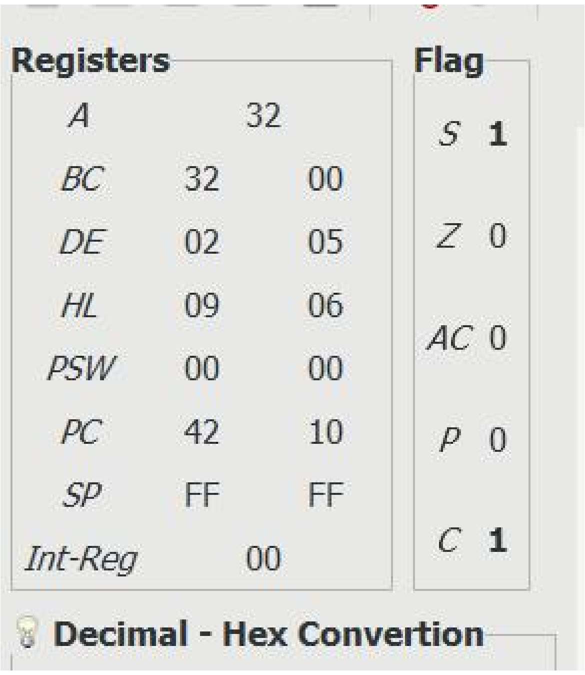
OUTPUT:



Start 9050

Address (Hex)	Address	Data
235A	9050	50
235B	9051	0
235C	9052	0
235D	9053	0
235E	9054	6
235F	9055	9
2360	9056	0
2361	9057	0
2362	9058	0
2363	9059	0
2364	9060	0
2365	9061	0
2366	9062	0
2367	9063	0

Line No	Assembler Message
0	Program assembled successfully



Registers

A	32	
BC	32	00
DE	02	05
HL	09	06
PSW	00	00
PC	42	10
SP	FF	FF
Int-Reg	00	

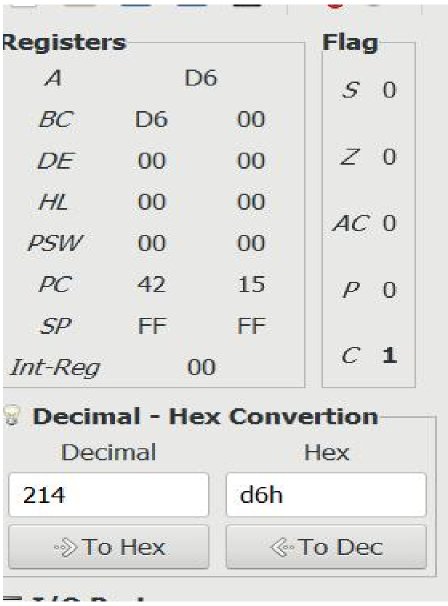
Flag

S	1
Z	0
AC	0
P	0
C	1

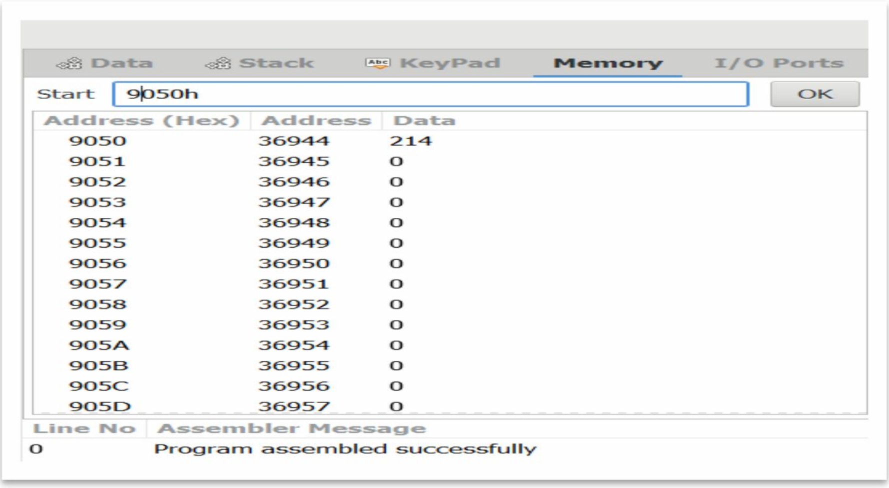
6. Write a program to find a given number is positive or negative and if positive store in location 8050 if negative store in 8051.

```
LDA 9050H

MOV B, A

RAL

JC NEGATIVE

MVI A,00H

RAR

MOV A, B

STA 8050H

NEGATIVE: MOV A, B

STA 8051H

HLT
```

OUTPUT:



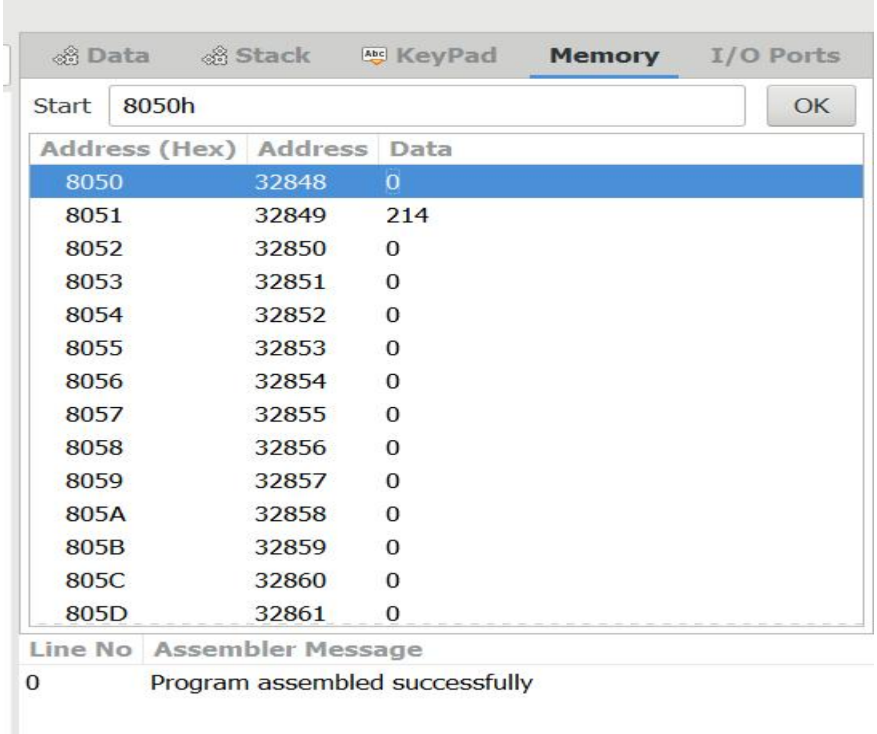
```
Registers                        Flag
  A            D6                  S   0
  BC      D6          00
  DE      00          00           Z   0
  HL      00          00
  PSW     00          00           AC  0
  PC      42          15
  SP      FF          FF           P   0
  Int-Reg      00                  C   1

Decimal - Hex Convertion
   Decimal              Hex
   214                  d6h
```



Start 9050h

Address (Hex)	Address	Data
9050	36944	214
9051	36945	0
9052	36946	0
9053	36947	0
9054	36948	0
9055	36949	0
9056	36950	0
9057	36951	0
9058	36952	0
9059	36953	0
905A	36954	0
905B	36955	0
905C	36956	0
905D	36957	0

Line No	Assembler Message
0	Program assembled successfully



Start 8050h

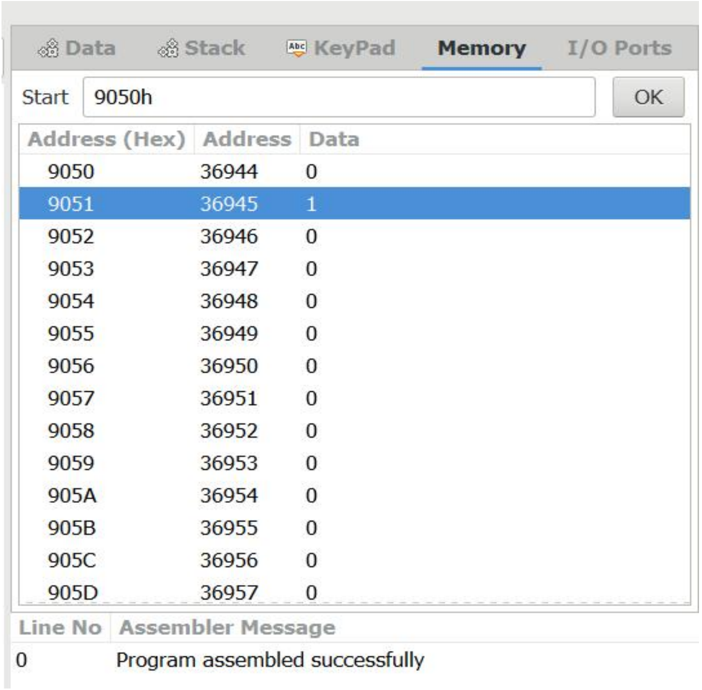
Address (Hex)	Address	Data
8050	32848	0
8051	32849	214
8052	32850	0
8053	32851	0
8054	32852	0
8055	32853	0
8056	32854	0
8057	32855	0
8058	32856	0
8059	32857	0
805A	32858	0
805B	32859	0
805C	32860	0
805D	32861	0

Line No	Assembler Message
0	Program assembled successfully

7.Write a program to find a given number is even or odd and if even stored in location 9050H and if odd stored in 9051H.

```
LDA 8050H

ANI 01H

JZ EVEN

MVI A, 01H

STA 9050H

EVEN: MVI A, 00H

STA 9050H

HLT
```

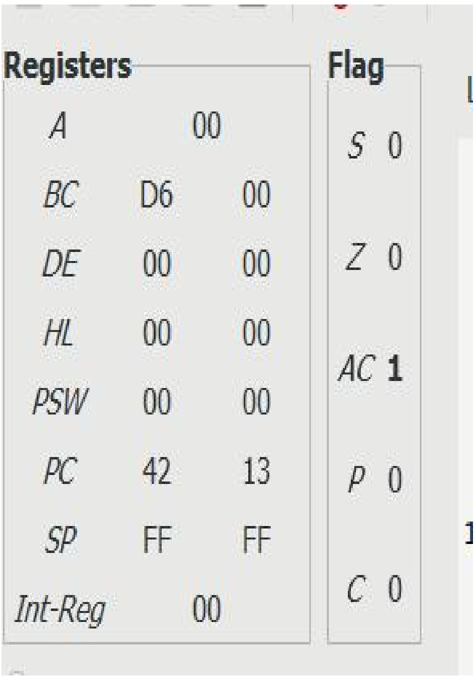
OUTPUT:



Start 9050h

Address (Hex)	Address	Data
9050	36944	0
9051	36945	1
9052	36946	0
9053	36947	0
9054	36948	0
9055	36949	0
9056	36950	0
9057	36951	0
9058	36952	0
9059	36953	0
905A	36954	0
905B	36955	0
905C	36956	0
905D	36957	0

Line No	Assembler Message
0	Program assembled successfully

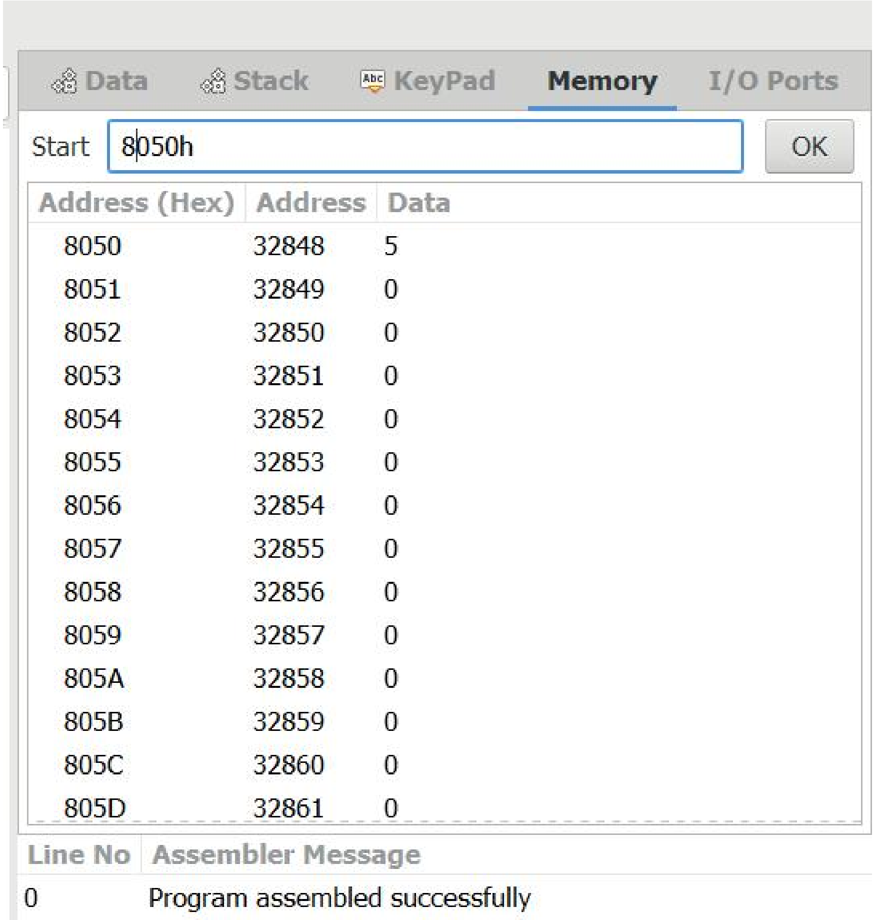


Registers

A	00	
BC	D6	00
DE	00	00
HL	00	00
PSW	00	00
PC	42	13
SP	FF	FF
Int-Reg	00	

Flag

S	0
Z	0
AC	1
P	0
C	0



Start 8050h

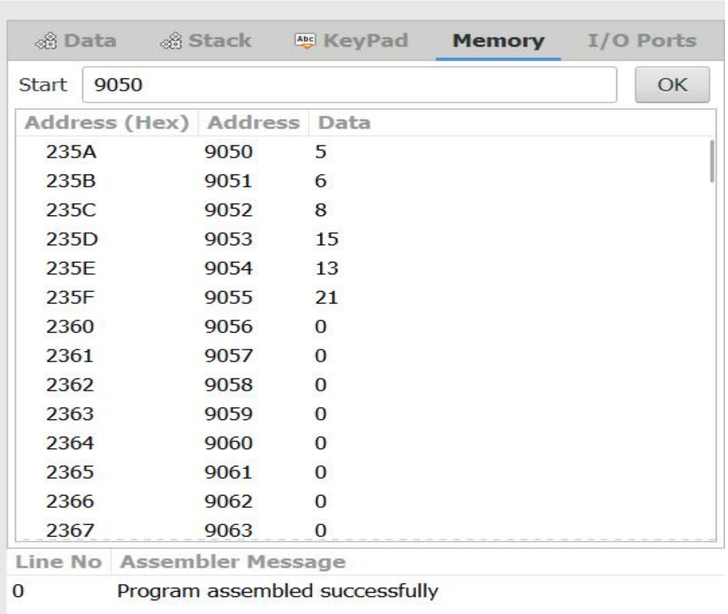
Address (Hex)	Address	Data
8050	32848	5
8051	32849	0
8052	32850	0
8053	32851	0
8054	32852	0
8055	32853	0
8056	32854	0
8057	32855	0
8058	32856	0
8059	32857	0
805A	32858	0
805B	32859	0
805C	32860	0
805D	32861	0

Line No	Assembler Message
0	Program assembled successfully

8.Write a program to add two 16 bits numbers stored in location 9050,9051 and 9052,9053 and then stored the sum in 9054 and 9055.

```
LHLD 9050

XCHG

LHLD 9052

DAD D

MVI C,00H

JNC LOOP

INR C

LOOP: SHLD 9054

MOV A, C

STA 9056

HLT
```

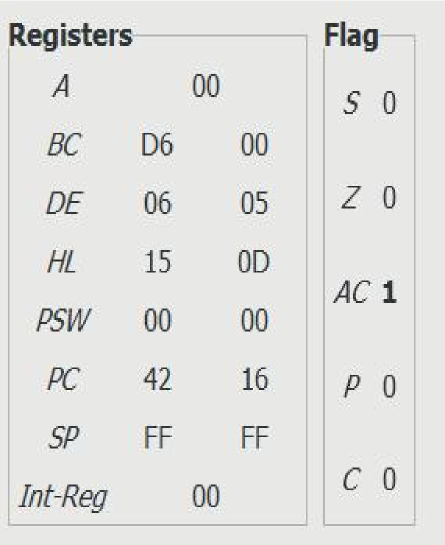
OUTPUT:



Start 9050

Address (Hex)	Address	Data
235A	9050	5
235B	9051	6
235C	9052	8
235D	9053	15
235E	9054	13
235F	9055	21
2360	9056	0
2361	9057	0
2362	9058	0
2363	9059	0
2364	9060	0
2365	9061	0
2366	9062	0
2367	9063	0

Line No	Assembler Message
0	Program assembled successfully



Registers

A	00	
BC	D6	00
DE	06	05
HL	15	0D
PSW	00	00
PC	42	16
SP	FF	FF
Int-Reg	00	

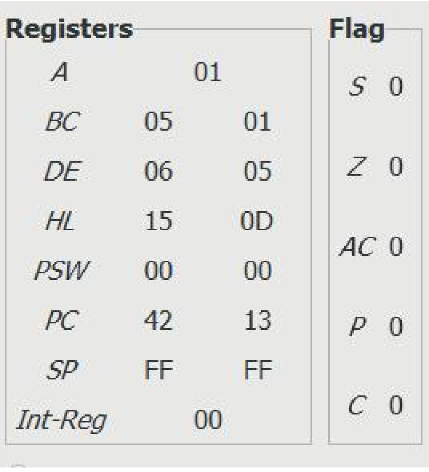
Flag

S	0
Z	0
AC	1
P	0
C	0

9.Write a program to add two number stored in location 8000 and 8001 store the sum of addition in 8003 and carry in 8002.

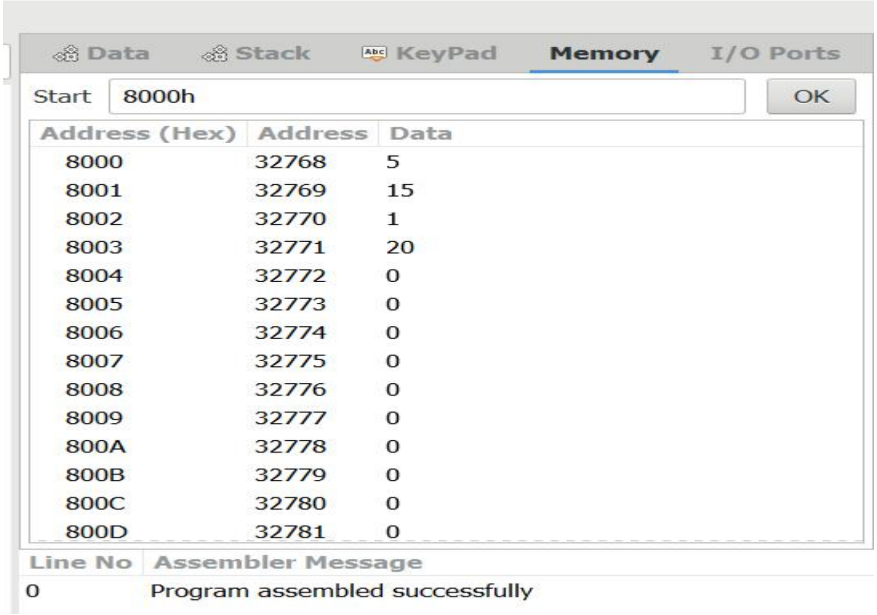
```
MVI C,00

LDA 8000H

MOV B, A

LDA 8001H

ADD B

STA 8003H

INR C

MOV A, C

STA 8002H

HLT
```

OUTPUT:



Registers		
A	01	
BC	05	01
DE	06	05
HL	15	0D
PSW	00	00
PC	42	13
SP	FF	FF
Int-Reg	00	

Flag	
S	0
Z	0
AC	0
P	0
C	0



Start 8000h

Address (Hex)	Address	Data
8000	32768	5
8001	32769	15
8002	32770	1
8003	32771	20
8004	32772	0
8005	32773	0
8006	32774	0
8007	32775	0
8008	32776	0
8009	32777	0
800A	32778	0
800B	32779	0
800C	32780	0
800D	32781	0

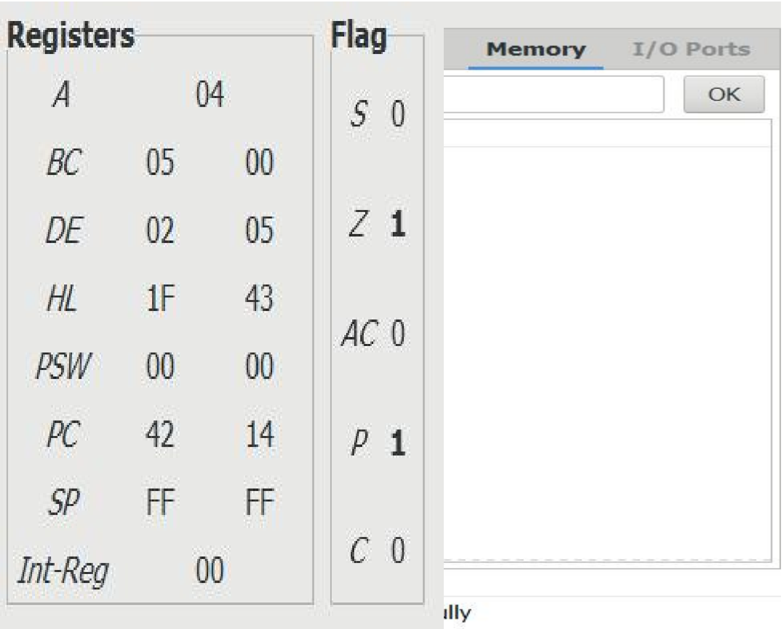
Line No	Assembler Message
0	Program assembled successfully

10. WAP to multiply two number stored in location 8002 and 8003 and stored the product in 8084.

```
LDA 8000

MOV D, A

LXI H, 8003
```

```
MOV C, M

BACK: DCR C

JZ SKIP

ADD D

JMP BACK

SKIP: STA 8004

HLT
```

OUTPUT:



Registers

A	04	
BC	05	00
DE	02	05
HL	1F	43
PSW	00	00
PC	42	14
SP	FF	FF
Int-Reg	00	

Flag

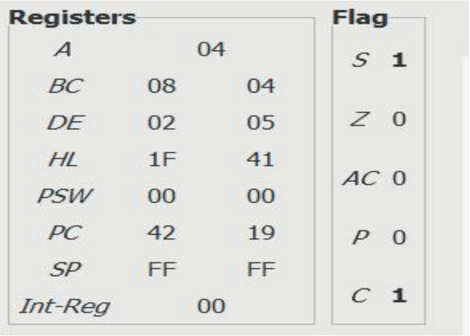
S	0
Z	1
AC	0
P	1
C	0

11.WAP to find quotient and remainder and store quotient at location 8050 and remainder at location 8051.

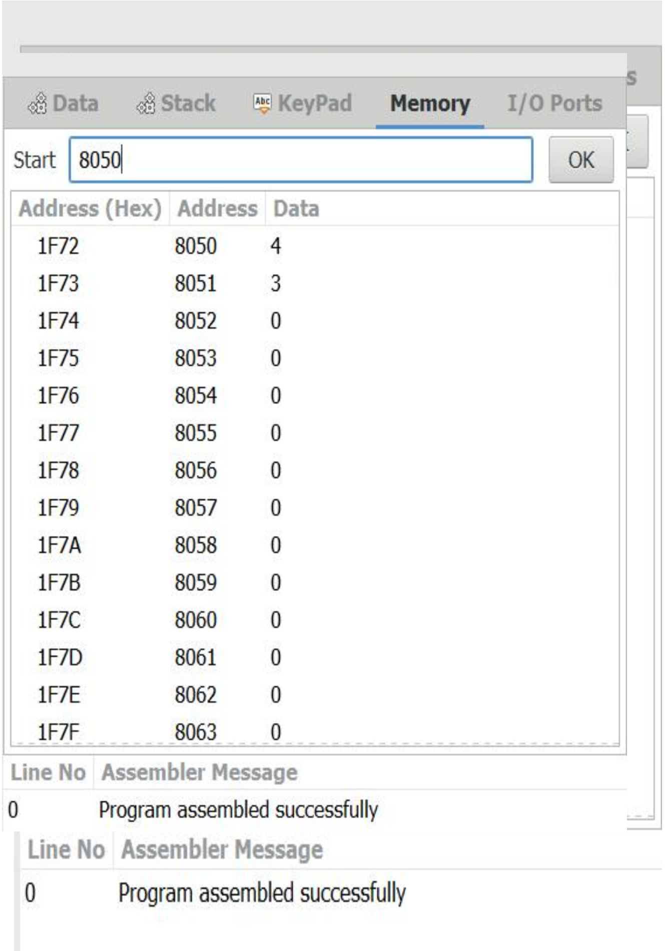
```
LXI H,8000

MOV B, M

MVI C,00

INX H
```

```
MOV A, M

NEXT: CMP B

JC LOOP

SUB B

INR C

JMP NEXT

LOOP: STA 8081

MOV A, C

STA 8050

HLT
```

OUTPUT:



```
Registers                         Flag
  A            04                  S  1
  BC      08        04
  DE      02        05             Z  0
  HL      1F        41
  PSW     00        00             AC 0
  PC      42        19
  SP      FF        FF             P  0
  Int-Reg      00
                                   C  1
```



Start 8050

Address (Hex)	Address	Data
1F72	8050	4
1F73	8051	3
1F74	8052	0
1F75	8053	0
1F76	8054	0
1F77	8055	0
1F78	8056	0
1F79	8057	0
1F7A	8058	0
1F7B	8059	0
1F7C	8060	0
1F7D	8061	0
1F7E	8062	0
1F7F	8063	0

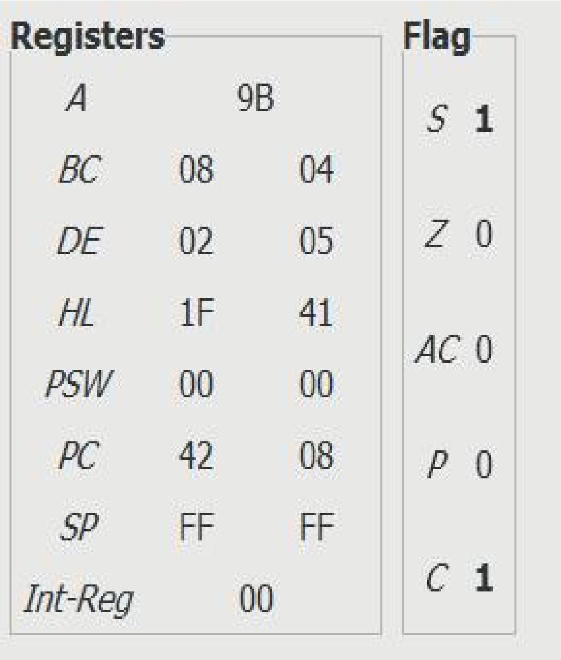
Line No	Assembler Message
0	Program assembled successfully

Line No	Assembler Message
0	Program assembled successfully

12. Find compliment of a number store in the location 9051and store its compliment in location 9052.

```
LDA 9051

CMA

STA 9052

HLT
```

OUTPUT:

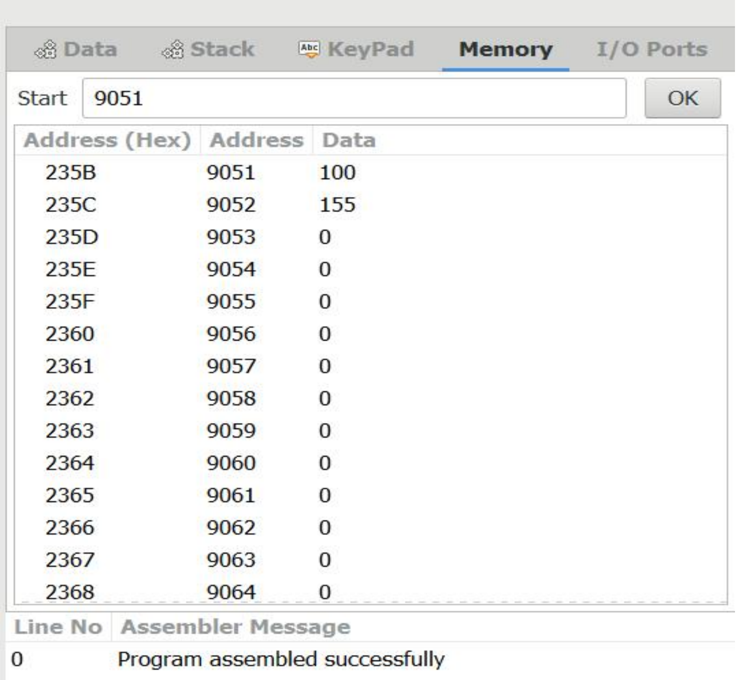


Registers

A	9B	
BC	08	04
DE	02	05
HL	1F	41
PSW	00	00
PC	42	08
SP	FF	FF
Int-Reg	00	

Flag

S	1
Z	0
AC	0
P	0
C	1



Start 9051

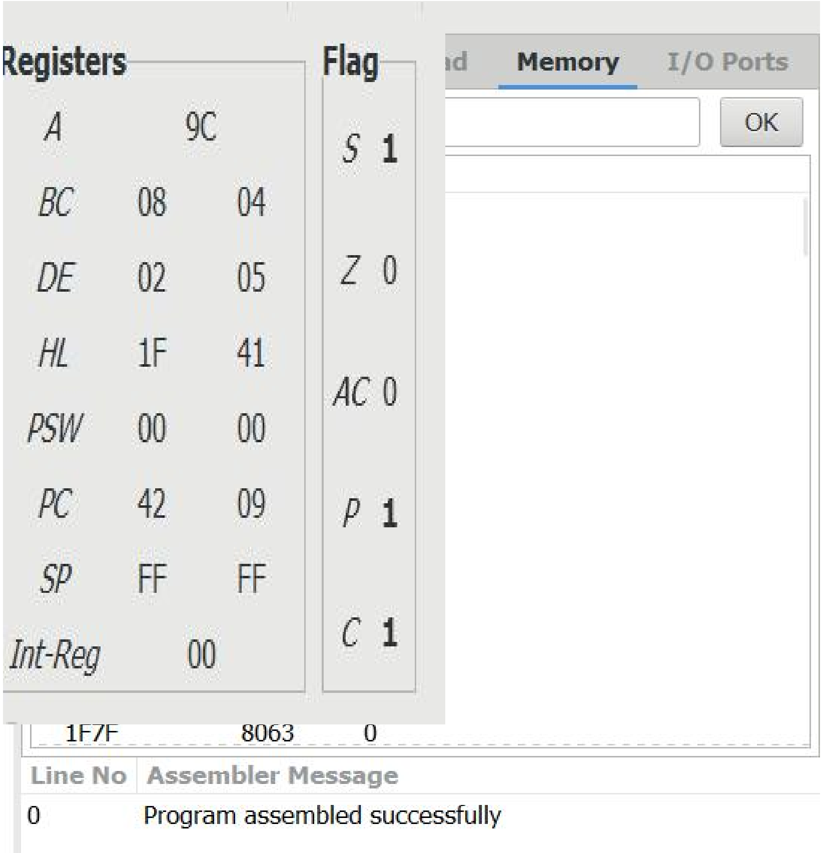
Address (Hex)	Address	Data
235B	9051	100
235C	9052	155
235D	9053	0
235E	9054	0
235F	9055	0
2360	9056	0
2361	9057	0
2362	9058	0
2363	9059	0
2364	9060	0
2365	9061	0
2366	9062	0
2367	9063	0
2368	9064	0

Line No	Assembler Message
0	Program assembled successfully

13. Find compliment 2's of a number stored in location 8050 and store its compliment at location.

```
LDA 8050

CMA

INR A

STA 8051

HLT
```

OUTPUT:



Registers

A	9C	
BC	08	04
DE	02	05
HL	1F	41
PSW	00	00
PC	42	09
SP	FF	FF
Int-Reg	00	

Flag

S	1
Z	0
AC	0
P	1
C	1

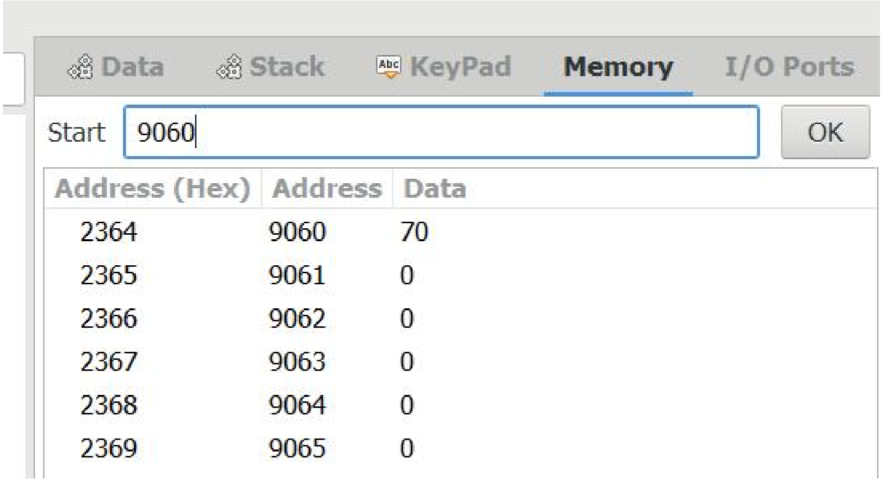
```
1F7F        8063     0
```

Line No	Assembler Message
0	Program assembled successfully

14. Find the greatest number out of 10 number stored from location 9010 and number stored the greatest number at location 9060.

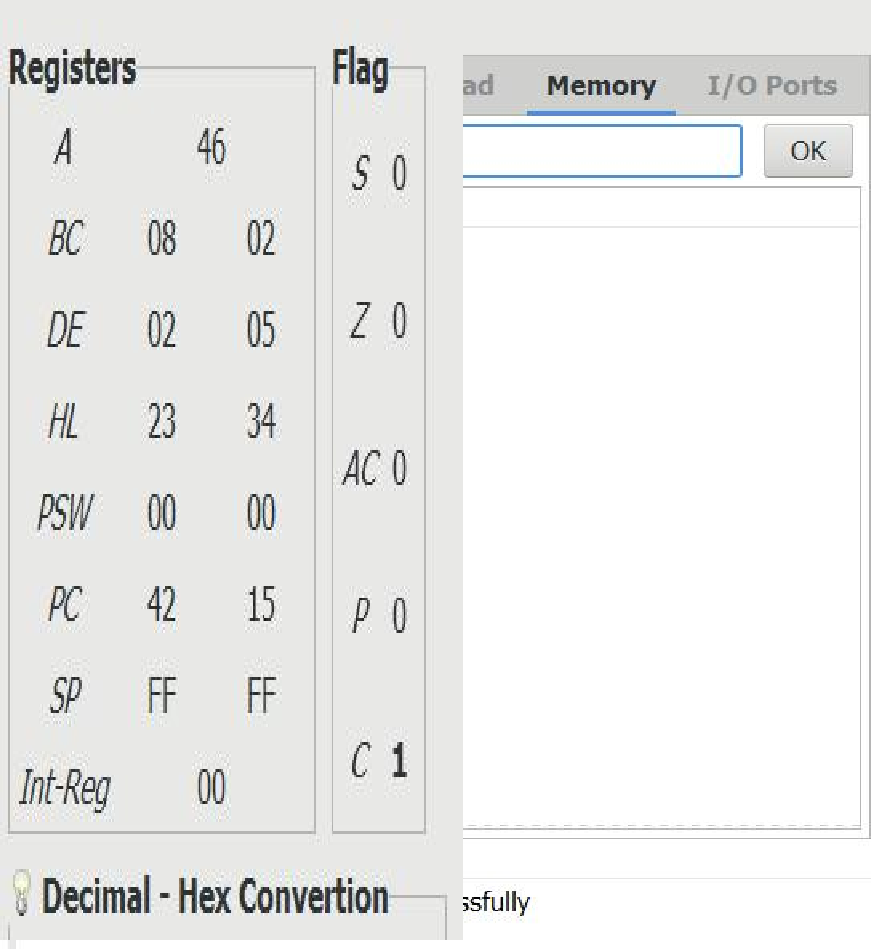
```
LXI H,9010

MOV C, M

INX H

DCR C

MOV A, M

Skip: INX H

CMP M

JNC LOOP

MOV A, M

LOOP:  DCR C

JNC Skip

STA 9060

HLT
```

OUTPUT:



Start 9060

Address (Hex)	Address	Data
2364	9060	70
2365	9061	0
2366	9062	0
2367	9063	0
2368	9064	0
2369	9065	0



Registers

A	46	
BC	08	02
DE	02	05
HL	23	34
PSW	00	00
PC	42	15
SP	FF	FF
Int-Reg	00	

Flag

S	0
Z	0
AC	0
P	0
C	1

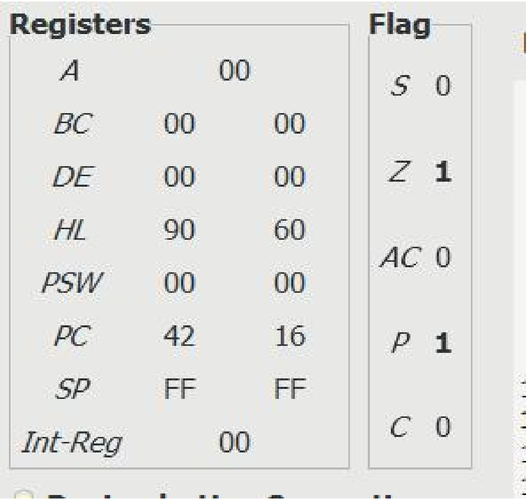
Decimal - Hex Convertion

ssfully

15.Find the smallest number out of 10 number stored from location 9010 and store the smallest at location 9060.

```
LXI H, 9010

MOV C, M

INX H

MOV B, M

DCR C

LOOP: INX H

MOV A, M

CMP B

JNC Skip

MOV B, A

Skip: DCR C

JNZ LOOP

LXI H,9060H

MOV M, B

HLT
```

OUTPUT:

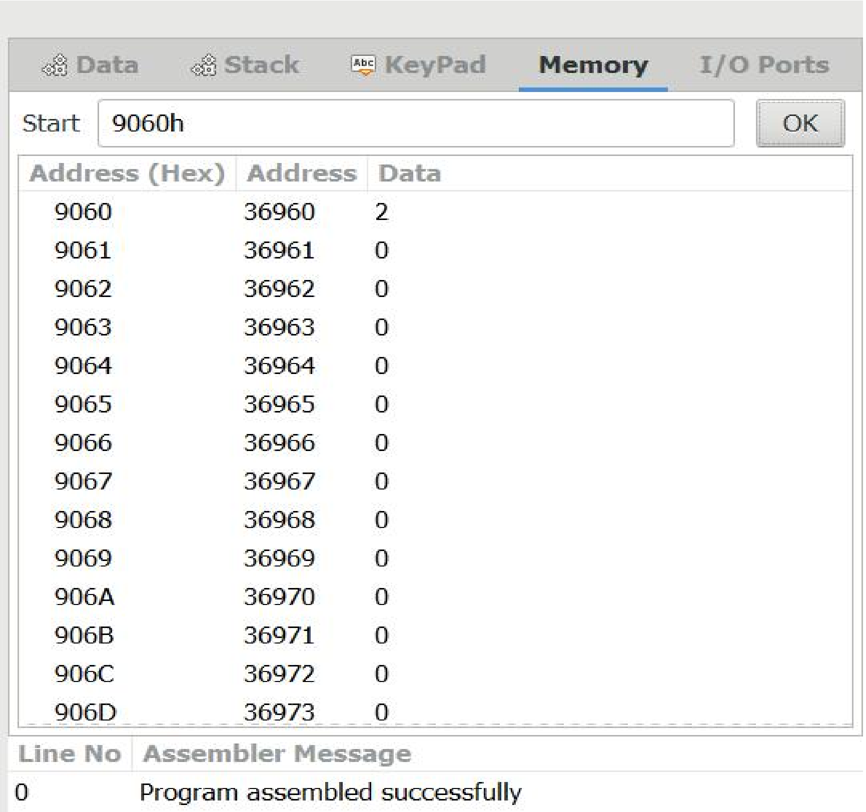


Registers

A	00	
BC	00	00
DE	00	00
HL	90	60
PSW	00	00
PC	42	16
SP	FF	FF
Int-Reg	00	

Flag

S	0
Z	1
AC	0
P	1
C	0



Start 9060h

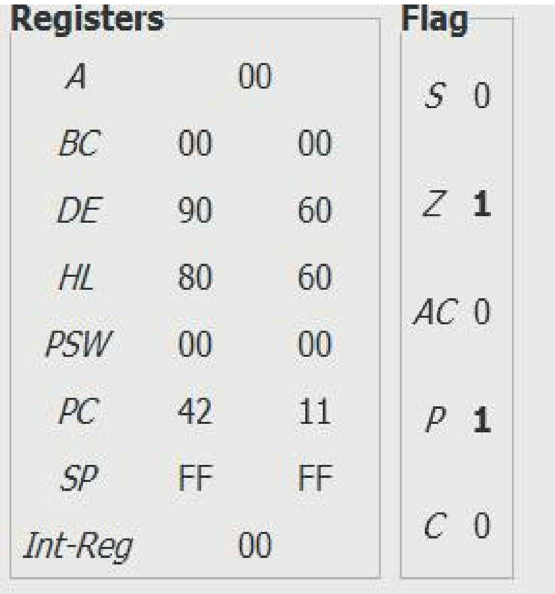
Address (Hex)	Address	Data
9060	36960	2
9061	36961	0
9062	36962	0
9063	36963	0
9064	36964	0
9065	36965	0
9066	36966	0
9067	36967	0
9068	36968	0
9069	36969	0
906A	36970	0
906B	36971	0
906C	36972	0
906D	36973	0

Line No	Assembler Message
0	Program assembled successfully

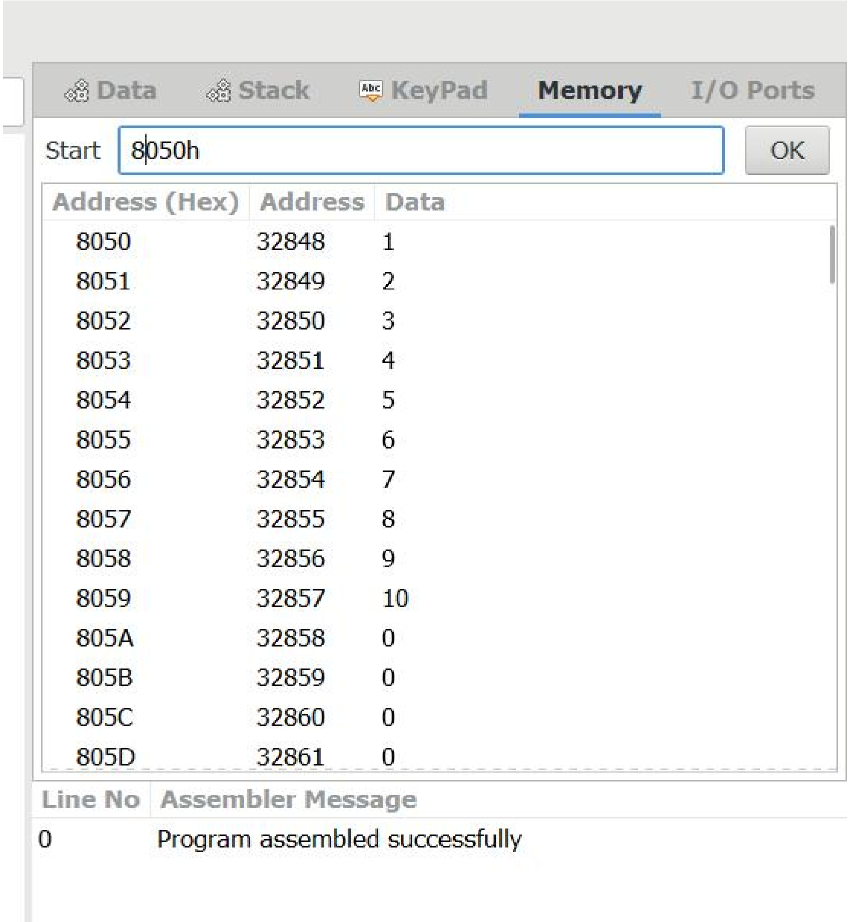
16. WAP to copy 10 data from memory location 8050 to new memory location 9050.

```
LXI H,8050H

LXI D,9050H

MVI B,10H

LOOP:MOV A, M

STAX D

INX H

INX D

DCR B

JNZ LOOP

HLT
```

OUTPUT:



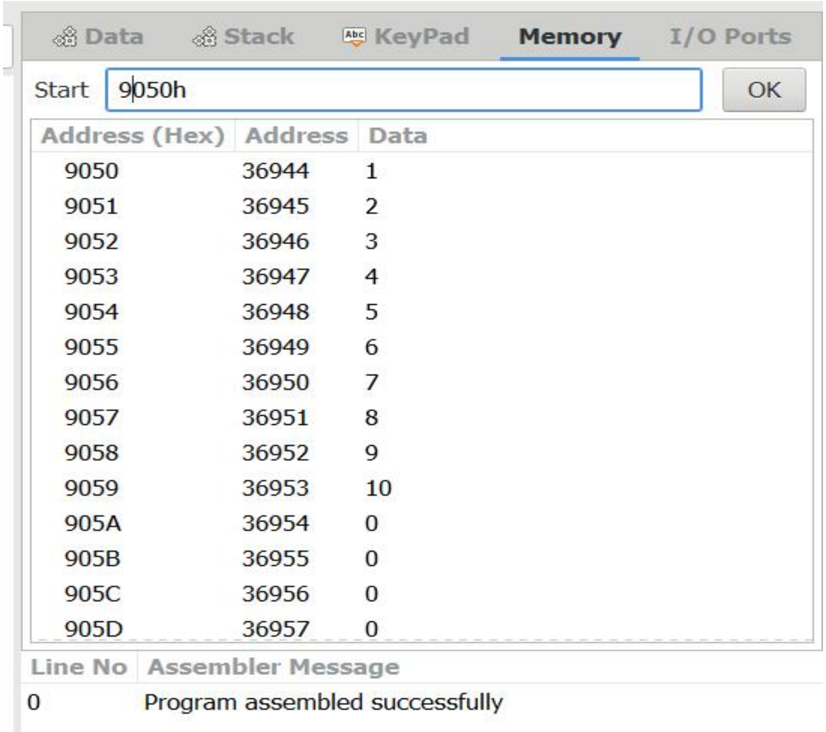
Registers			Flag	
A	00		S	0
BC	00	00	Z	1
DE	90	60	AC	0
HL	80	60	P	1
PSW	00	00	C	0
PC	42	11		
SP	FF	FF		
Int-Reg	00			



Start 8050h

Address (Hex)	Address	Data
8050	32848	1
8051	32849	2
8052	32850	3
8053	32851	4
8054	32852	5
8055	32853	6
8056	32854	7
8057	32855	8
8058	32856	9
8059	32857	10
805A	32858	0
805B	32859	0
805C	32860	0
805D	32861	0

Line No	Assembler Message
0	Program assembled successfully



Start 9050h

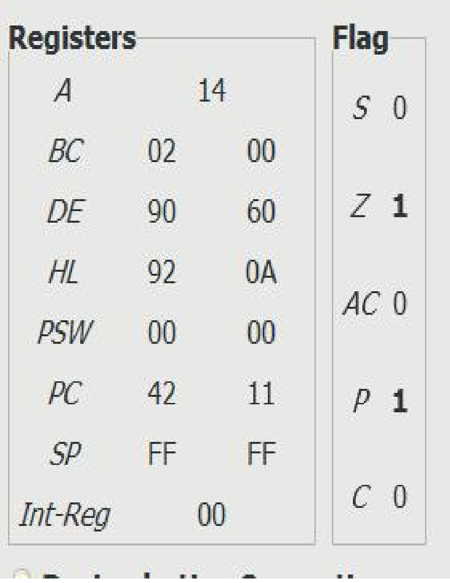
Address (Hex)	Address	Data
9050	36944	1
9051	36945	2
9052	36946	3
9053	36947	4
9054	36948	5
9055	36949	6
9056	36950	7
9057	36951	8
9058	36952	9
9059	36953	10
905A	36954	0
905B	36955	0
905C	36956	0
905D	36957	0

Line No	Assembler Message
0	Program assembled successfully

17. WAP to generate 10 even numbers.

```
MVI A,00H

MVI B,02H

MVI C, 0AH

LXI H,9200H

LOOP: ADDB

MOV M, A

INX H

DCR C

JNZ LOOP

HLT
```

OUTPUT:

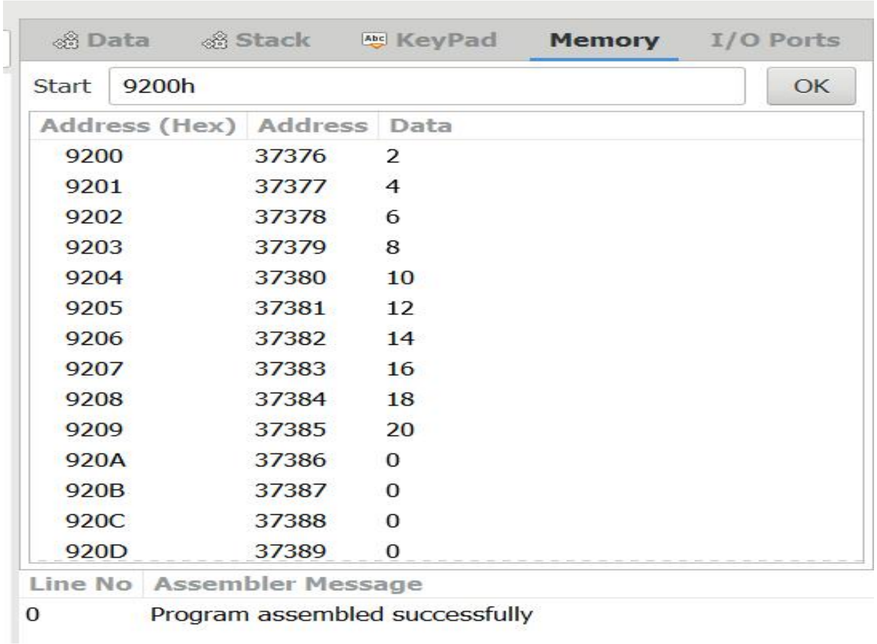


Registers

A	14	
BC	02	00
DE	90	60
HL	92	0A
PSW	00	00
PC	42	11
SP	FF	FF
Int-Reg	00	

Flag

S	0
Z	1
AC	0
P	1
C	0



Start 9200h

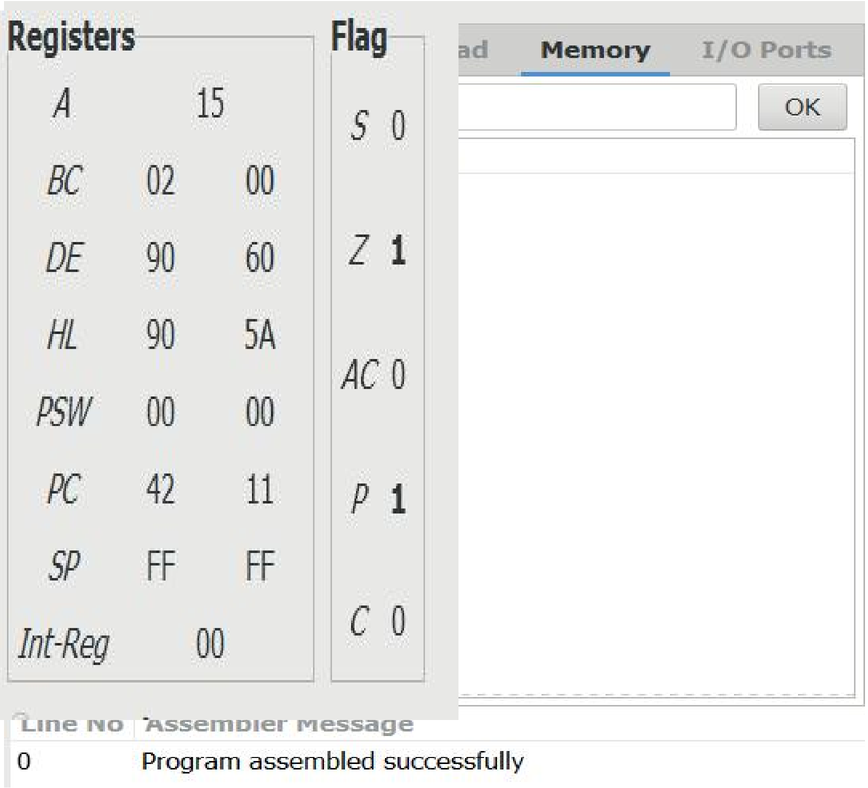
Address (Hex)	Address	Data
9200	37376	2
9201	37377	4
9202	37378	6
9203	37379	8
9204	37380	10
9205	37381	12
9206	37382	14
9207	37383	16
9208	37384	18
9209	37385	20
920A	37386	0
920B	37387	0
920C	37388	0
920D	37389	0

Line No	Assembler Message
0	Program assembled successfully

18. WAP to generate 10 odd number.

```
MVI A,01H

MVI B,02H

MVI C,0AH

LXI H, 9050H

LOOP: ADD B

MOV M, A

INX H

DCR C

HLT
```

OUTPUT:



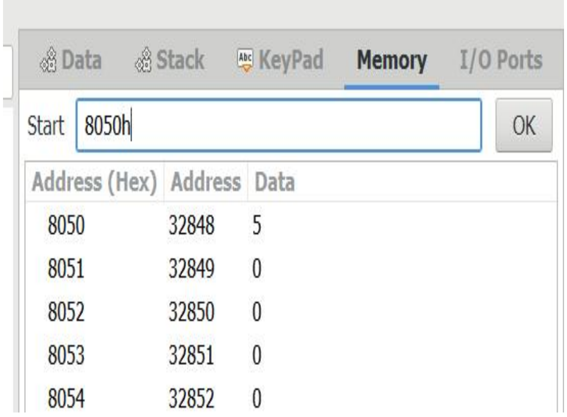
```
Registers                 Flag
A          15             S  0
BC     02      00         Z  1
DE     90      60         AC 0
HL     90      5A         P  1
PSW    00      00         C  0
PC     42      11
SP     FF      FF
Int-Reg    00
```

```
Line No   Assembler Message
0         Program assembled successfully
```

19.WAP to count even number or odd number out of 10 number and store even number in location 8050H and odd number in location 8060H.

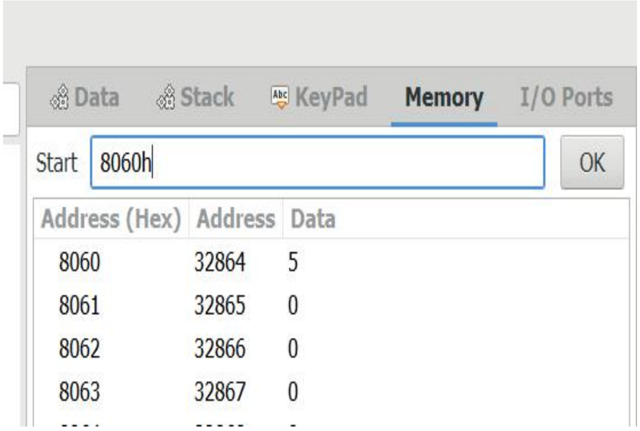
```
LXI H,8000H

MOV C, M

MVI B,00H

MVI D,00H

LOOP2: INX H

MOV A, M

RAR

JC LOOP1

INR B

JMP LOOP3

LOOP1: INR D

LOOP3: DCR C

JNZ LOOP2

MOV A, B

STA 8050h

MOV A, D

STA 8060h

HLT
```

OUTPUT:



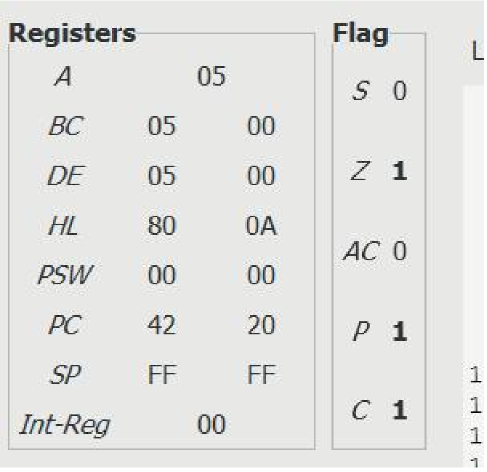
Start 8050h

Address (Hex)	Address	Data
8050	32848	5
8051	32849	0
8052	32850	0
8053	32851	0
8054	32852	0



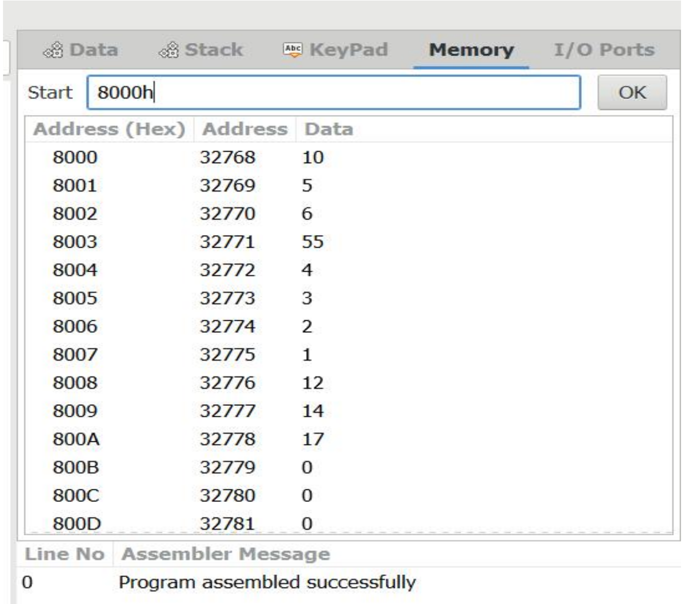
Start 8060h

Address (Hex)	Address	Data
8060	32864	5
8061	32865	0
8062	32866	0
8063	32867	0



Registers		
A	05	
BC	05	00
DE	05	00
HL	80	0A
PSW	00	00
PC	42	20
SP	FF	FF
Int-Reg	00	

Flag	
S	0
Z	1
AC	0
P	1
C	1



Start 8000h

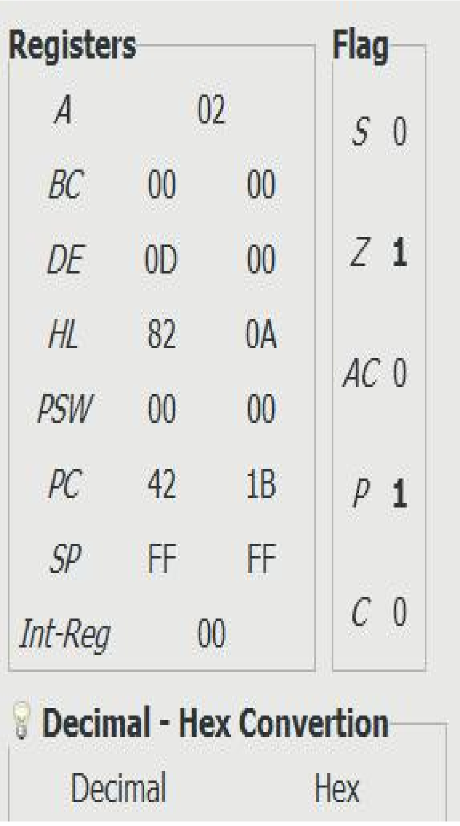
Address (Hex)	Address	Data
8000	32768	10
8001	32769	5
8002	32770	6
8003	32771	55
8004	32772	4
8005	32773	3
8006	32774	2
8007	32775	1
8008	32776	12
8009	32777	14
800A	32778	17
800B	32779	0
800C	32780	0
800D	32781	0

Line No	Assembler Message
0	Program assembled successfully

20.WAP to sort given 10 numbers from memory location 8200H in ascending order.

```
MVI B, 09
START: LXI H, 8200H
MVI C,0AH
BACK: MOV A, M
INX H
CMP M
JNC SKIP
MOV D, M
MOV M, A
DCX H
MOV M, D
INX H
SKIP: DCR C
JNZ BACK
DCR B
JNZ START
HLT
```

OUTPUT:



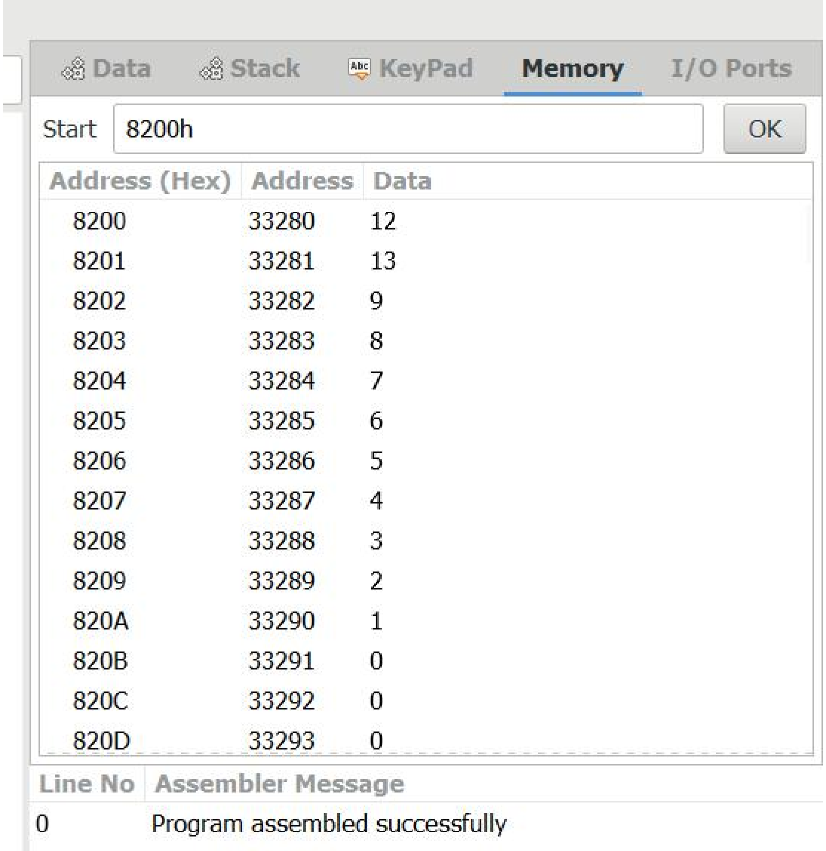
Registers

A	02	
BC	00	00
DE	0D	00
HL	82	0A
PSW	00	00
PC	42	1B
SP	FF	FF
Int-Reg	00	

Flag

S	0
Z	1
AC	0
P	1
C	0

Decimal - Hex Convertion



Start 8200h

Address (Hex)	Address	Data
8200	33280	12
8201	33281	13
8202	33282	9
8203	33283	8
8204	33284	7
8205	33285	6
8206	33286	5
8207	33287	4
8208	33288	3
8209	33289	2
820A	33290	1
820B	33291	0
820C	33292	0
820D	33293	0

Line No	Assembler Message
0	Program assembled successfully