

Registers

A	09	S	0
BC	00 00	Z	1
DE	00 00	AC	0
HL	09 03	P	1
PSW	00 00	C	0
PC	42 15		
SP	FF FF		
Int-Reg	00		

Decimal - Hex Conversion

Decimal

Hex

0

0

To Hex

To Dec

I/O Ports

0

-

+

00

Update Port Value

Memory

2057

-

+

00

Update Memory

Load me at:

1 LDI R<sub>4</sub>, 2050

2 MOV C, M

3 DCR C

4 INR H

5 MOV A, M

6 JUMP1: INR H

7 CMP M

8 JNC LOOP

9 MOV A, M

10 JNEP DCR C

11 JNC LOOP1

12 STA 2055

13 HLT

14

Data

Stack

Keypad

Memory

I/O Ports

Start 2050

OK

Address (Hex)	Address	Data
000A	2050	9
000B	2059	0
000C	2060	0
000D	2061	0
000E	2062	0
000F	2063	0
0010	2064	0
0011	2065	0
0012	2066	0
0013	2067	0
0014	2068	0
0015	2069	0
0016	2070	0
0017	2071	0

Line No: Assembler Message

0 Program assembled successfully

Registers

A	07	S	0
BC	07 08	Z	0
DE	00 00	AC	0
HL	00 00	P	0
PSW	00 00	C	0
PC	42 10		
SP	FF FF		
Int-Reg	00		

Decimal - Hex Conversion

Decimal

Hex

0

0

To Hex

To Dec

I/O Ports

0

-

+

00

Update Port Value

Memory

2002

-

+

00

Update Memory

Load me at:

1 LDI R<sub>4</sub>, 2000

2 MOV A, A

3 LDI 2002

4 MOV C, A

5 STA 2003

6 MOV A, B

7 STA 2004

8 HLT

9

Data

Stack

Keypad

Memory

I/O Ports

Start 2003

OK

Address (Hex)	Address	Data
0703	2003	8
0704	2004	7
0705	2005	0
0706	2006	0
0707	2007	0
0708	2008	0
0709	2009	0
070A	2010	0
070B	2011	0
070C	2012	0
070D	2013	0
070E	2014	0
070F	2015	0
0710	2016	0

Line No: Assembler Message

0 Program assembled successfully

Registers

A	00	S	0
BC	00 00	Z	0
DE	00 00	AC	0
HL	1F 41	P	0
PSW	00 00	C	0
PC	42 0F		
SP	FF FF		
Int-Reg	00		

Decimal - Hex Conversion

Decimal

Hex

0

0

To Hex

To Dec

I/O Ports

0

-

+

00

Update Port Value

Memory

8003

-

+

05

Update Memory

Load me at:

1 LDI R<sub>4</sub>, 8000

2 MOV R<sub>4</sub>, M

3 INR R<sub>4</sub>

4 MOV A, M

5 CMP R<sub>4</sub>

6 JC STORE

7 MOV A, R<sub>4</sub>

8 STORE: STA 8000

9 HLT

10

11

12

13

14

15

16

17

Data

Stack

Keypad

Memory

I/O Ports

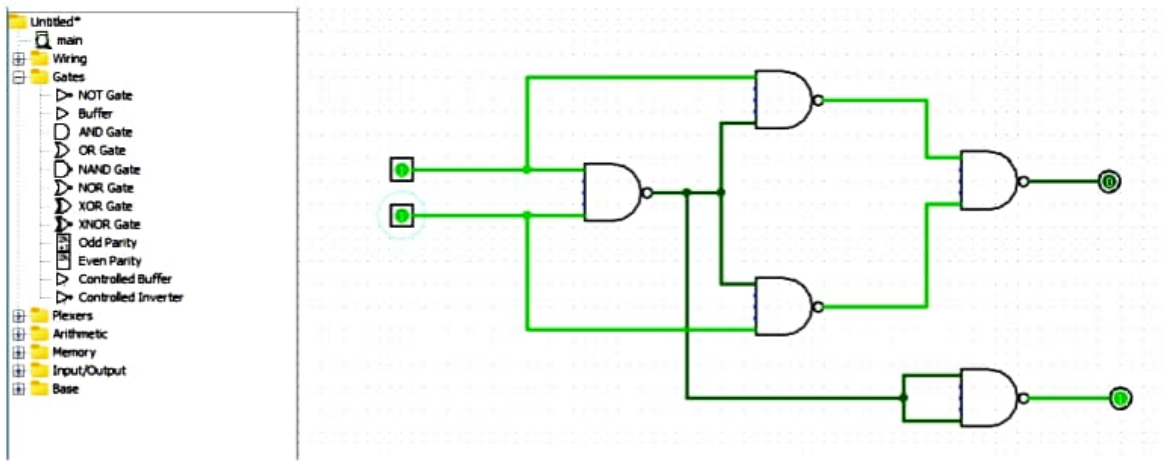
Start 8050

OK

Address (Hex)	Address	Data
1F72	8050	0
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



**Registers**

Register	Value	Flag
A	19	S 0
BC	00 00	Z 1
DE	00 00	AC 0
HL	1F 40	P 1
PSW	00 00	C 0
PC	42 0E	
SP	FF FF	
Int-Reg	00	

**Decimal - Hex Conversion**

Decimal: 0      Hex: 0

To Hex      To Dec

**I/O Ports**

0 - + 00

Update Port Value

**Memory**

8000 - + 05

Update Memory

**Load me at**

```

1 LDI R, 0x00
2 RRA A
3 MOV R, W
4 LDD - ADD W
5 DCR B
6 JNZ LOOP
7 STA 0x00
8 HLT
9

```

**Memory**

Address (Hex)	Address	Data
1F41	8001	25
1F42	8002	0
1F43	8003	0
1F44	8004	0
1F45	8005	0
1F46	8006	0
1F47	8007	0
1F48	8008	0
1F49	8009	0
1F4A	8010	0
1F4B	8011	0
1F4C	8012	0
1F4D	8013	0
1F4E	8014	0

Line No: Assembly Message

0 Program assembled successfully

**Registers**

Register	Value	Flag
A	1B	S 1
BC	00 00	Z 0
DE	00 00	AC 0
HL	00 00	P 0
PSW	00 00	C 0
PC	42 00	
SP	FF FF	
Int-Reg	00	

**Decimal - Hex Conversion**

Decimal: 0      Hex: 0

To Hex      To Dec

**I/O Ports**

0 - + 00

Update Port Value

**Memory**

1000 - + 05

Update Memory

**Load me at**

```

1 LDA 0x00
2 ORA A
3 STA 0x00
4 ADI 1
5 STA 0x00
6 HLT
7

```

**Memory**

Address (Hex)	Address	Data
0000	3001	250
000A	3002	251
000B	3003	0
000C	3004	0
000D	3005	0
000E	3006	0
000F	3007	0
0010	3008	0
0011	3009	0
0012	3010	0
0013	3011	0
0014	3012	0
0015	3013	0
0016	3014	0

Line No: Assembly Message

0 Program assembled successfully

**File** **Reset** **Assembler** **Debug** **Help**

**Registers**

Register	Value	Flag
A	30	S 0
BC	04 00	Z 0
DE	00 00	AC 0
HL	00 00	P 0
PSW	00 00	C 0
PC	42 0A	
SP	FF FF	
Int-Reg	00	

**Decimal - Hex Conversion**

Decimal: 0      Hex: 0

To Hex      To Dec

**I/O Ports**

0 - + 00

Update Port Value

**Memory**

0 - + 00

Update Memory

**Load me at**

```

1 MVI A, 05
2 RRC
3 RRC
4 RRC
5 RRC
6 STA 0x00
7 HLT
8
9

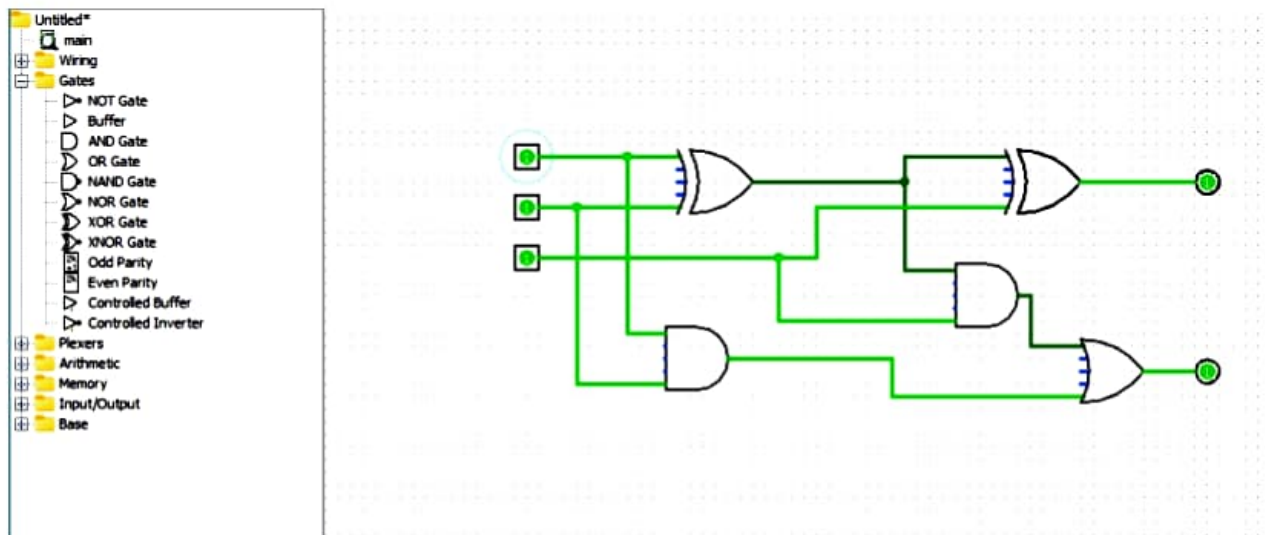
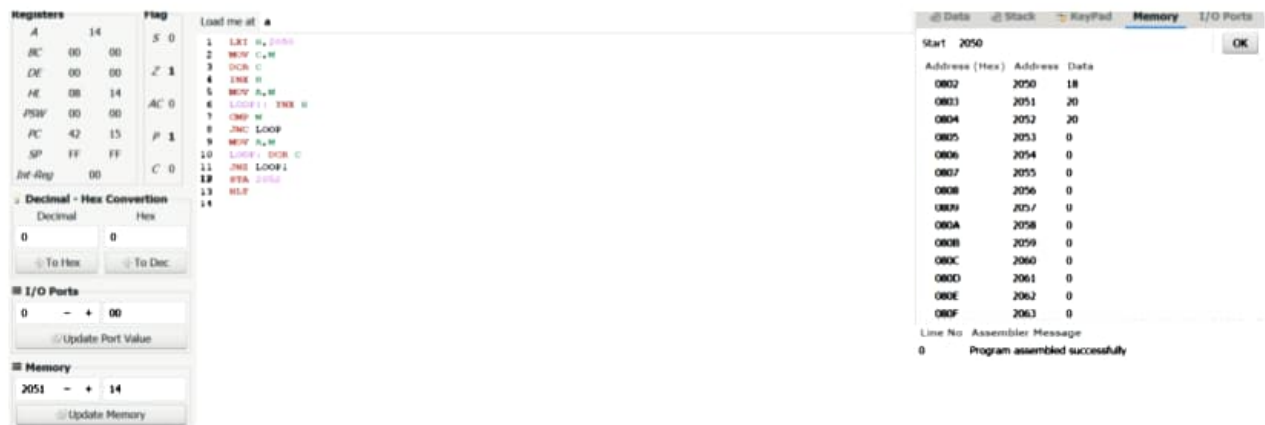
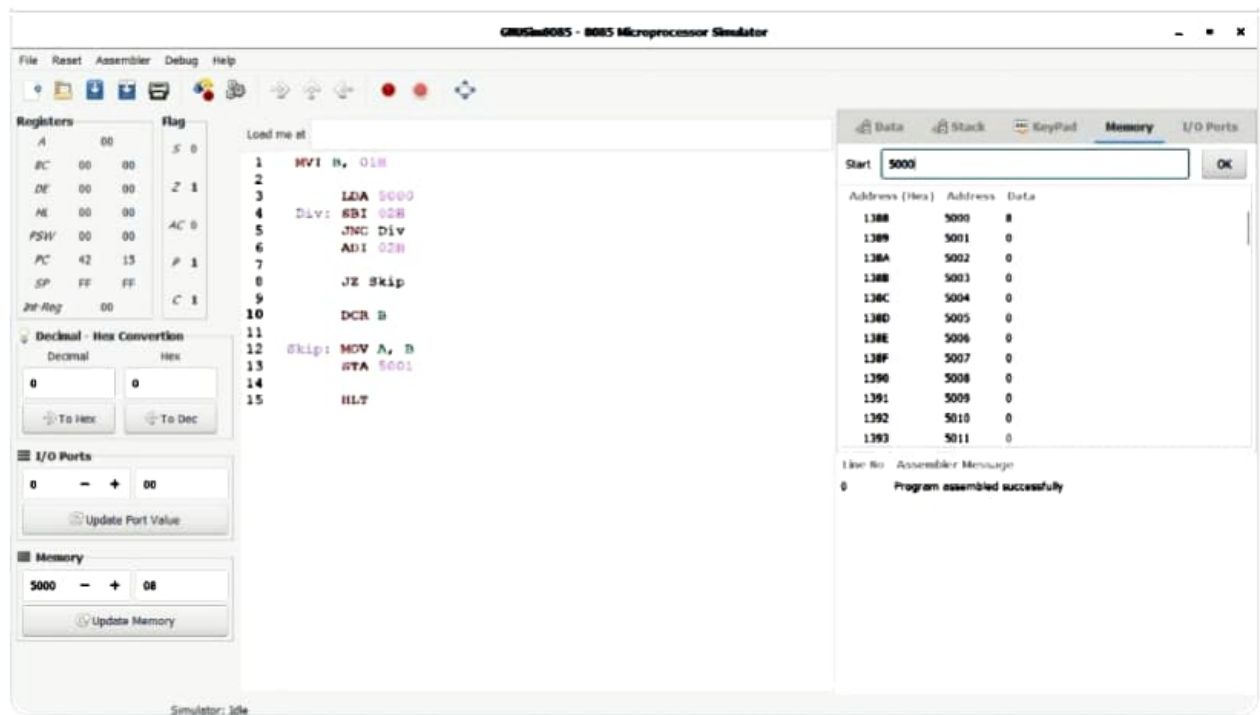
```

**Memory**

Address (Hex)	Address	Data
0FD0	2000	4B
0FD1	2001	0
0FD2	2002	0
0FD3	2003	0
0FD4	2004	0
0FD5	2005	0
0FD6	2006	0
0FD7	2007	0
0FD8	2008	0
0FD9	2009	0
0FDA	2010	0
0FDB	2011	0

Line No: Assembly Message

0 Program assembled successfully





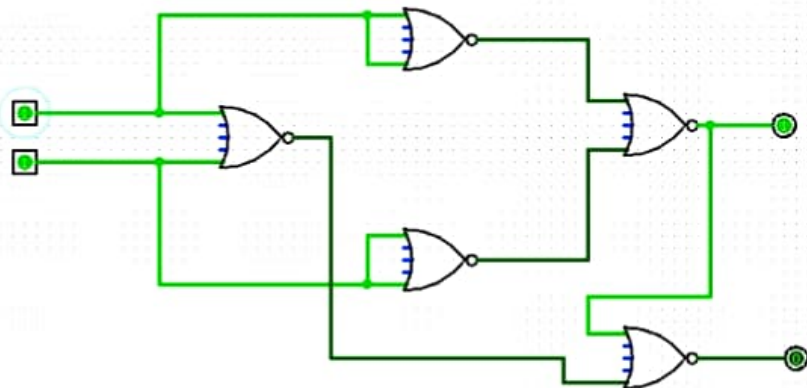
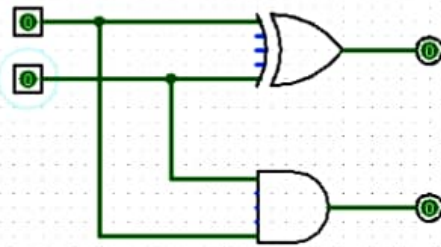
- Untitled\*
- main
- Wiring
- Gates
  - NOT Gate
  - Buffer
  - AND Gate
  - OR Gate
  - NAND Gate
  - NOR Gate
  - XOR Gate
  - XNOR Gate
  - Odd Parity
  - Even Parity
  - Controlled Buffer
  - Controlled Inverter
- Plexers
- Arithmetic
- Memory
- Input/Output
- Base

#### Pin

Facing	East
Output?	No
Data Bits	1
Three-state?	No
Pull Behavior	Unchanged
Label	

#### Label Location

- Untitled\*
- main
- Wiring
- Gates
  - NOT Gate
  - Buffer
  - AND Gate
  - OR Gate
  - NAND Gate
  - NOR Gate
  - XOR Gate
  - XNOR Gate
  - Odd Parity
  - Even Parity
  - Controlled Buffer
  - Controlled Inverter
- Plexers
- Arithmetic
- Memory
- Input/Output
- Base



File Reset Assembler Debug Help

Registers

Register	Value	Flag
A	20	S 0
BC	04 00	Z 0
DE	00 00	AC 0
HL	00 00	P 0
PSW	00 00	C 0
PC	42 0A	
SP	FF FF	
Int-Reg	00	

Load me at

```

1  MVI A, 02
2  RLC
3  RLC
4  RLC
5  RLC
6  STA 2000
7  HLT
8
9
10

```

Decimal - Hex Conversion

Decimal: 0 Hex: 0

To Hex To Dec

I/O Ports

0 - + 00

Update Port Value

Memory

0 - + 00

Update Memory

Simulator: Idle

Start: 2000 OK

Address (Hex)	Address	Data
07D0	2000	32
07D1	2001	0
07D2	2002	0
07D3	2003	0
07D4	2004	0
07D5	2005	0
07D6	2006	0
07D7	2007	0
07D8	2008	0
07D9	2009	0
07DA	2010	0
07DB	2011	0

Line No. Assembler Message

0 Program assembled successfully

GRUBSB0B5 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

Registers

Register	Value	Flag
A	04	S 0
BC	04 00	Z 1
DE	00 00	AC 0
HL	00 00	P 1
PSW	00 00	C 0
PC	42 20	
SP	FF FF	
Int-Reg	00	

Load me at

```

1  IN 00H
2  MOV B, H
3  IN 01H
4  OR B
5  JZ 02
6  JNC REC
7  MOV C, A
8  MOV A, B
9  MOV B, C
10 RLC: ROTL B
11 OR B
12 JZ 02
13 JNC REC
14 MOV C, A
15 MOV A, B
16 MOV B, C
17 JNC REC
18 CPI OUT: ROTL B
19 ROTL

```

Decimal - Hex Conversion

Decimal: 0 Hex: 0

To Hex To Dec

I/O Ports

2 - + 4

Update Port Value

Memory

65535 - + 00

Load me at

```

1  MVI A, 01
2  MVI B, 06
3  ORA B
4  STA 2000
5  HLT

```

Start: 02 OK

Address (Hex)	Address	Data
0002	2	0
0003	3	0
0004	4	0
0005	5	0
0006	6	0
0007	7	0
0008	8	0
0009	9	0
000A	10	0
000B	11	0
000C	12	0
000D	13	0
000E	14	0
000F	15	0

Line No. Assembler Message

0 Program assembled successfully

Start: 2000 OK

Address (Hex)	Address	Data
07D0	2000	7
07D1	2001	0
07D2	2002	0
07D3	2003	0
07D4	2004	0
07D5	2005	0
07D6	2006	0
07D7	2007	0
07D8	2008	0
07D9	2009	0
07DA	2010	0
07DB	2011	0
07DC	2012	0
07DD	2013	0

Load me at:

```
1 MOV A, 07
2 MOV B, 06
3 XRA B
4 STA 2000
5 HLT
```

Data Stack KeyPad Memory I/O Ports

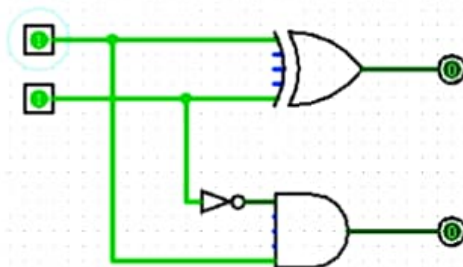
Start 2000

OK

Address (Hex)	Address	Data
07D0	2000	1
07D1	2001	0
07D2	2002	0
07D3	2003	0
07D4	2004	0
07D5	2005	0
07D6	2006	0
07D7	2007	0
07D8	2008	0
07D9	2009	0
07DA	2010	0
07DB	2011	0
07DC	2012	0
07DD	2013	0

Untitled\*

- main
- Wiring
- Gates
  - NOT Gate
  - Buffer
  - AND Gate
  - OR Gate
  - NAND Gate
  - NOR Gate
  - XOR Gate
  - XNOR Gate
  - Odd Parity
  - Even Parity
  - Controlled Buffer
  - Controlled Inverter
- Plexers
- Arithmetic
- Memory
- Input/Output
- Base



Register	Flag
BC 04 00	S 0
DE 00 00	Z 0
HL 00 00	AC 1
PSW 00 00	P 0
PC 42 09	C 0
SP FF FF	
Int-Reg 00	

Decimal - Hex Conversion

Decimal	Hex
0	0

To Hex To Dec

I/O Ports

1 - + 04

Update Port Value

Memory

0 - + 00

Update Memory

Load me at:

```
1 MOV A, 04
2 MOV B, 04
3 AND B
4 STA 2500
5 HLT
```

Data Stack KeyPad Memory I/O Ports

Start 2500

OK

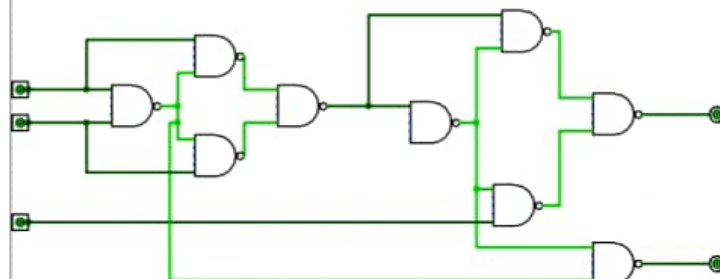
Address (Hex)	Address	Data
09C4	2500	4
09C5	2501	0
09C6	2502	0
09C7	2503	0
09C8	2504	0
09C9	2505	0
09CA	2506	0
09CB	2507	0
09CC	2508	0
09CD	2509	0
09CE	2510	0
09CF	2511	0
09D0	2512	0
09D1	2513	0

Line No: Assembler Message

Program assembled successfully

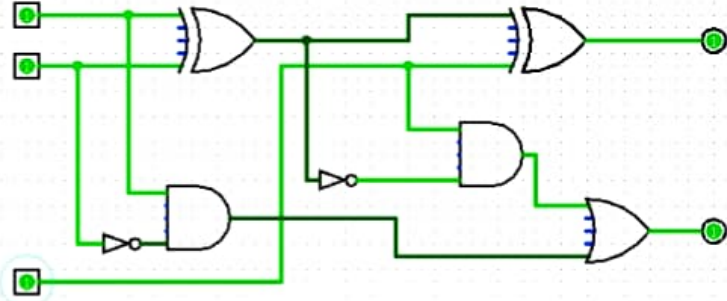
Untitled\*

- main
- Wiring
- Gates
  - NOT Gate
  - Buffer
  - AND Gate
  - OR Gate
  - NAND Gate
  - NOR Gate
  - XOR Gate
  - XNOR Gate
  - Odd Parity
  - Even Parity
  - Controlled Buffer
  - Controlled Inverter
- Plexers
- Arithmetic
- Memory
- Input/Output
- Base

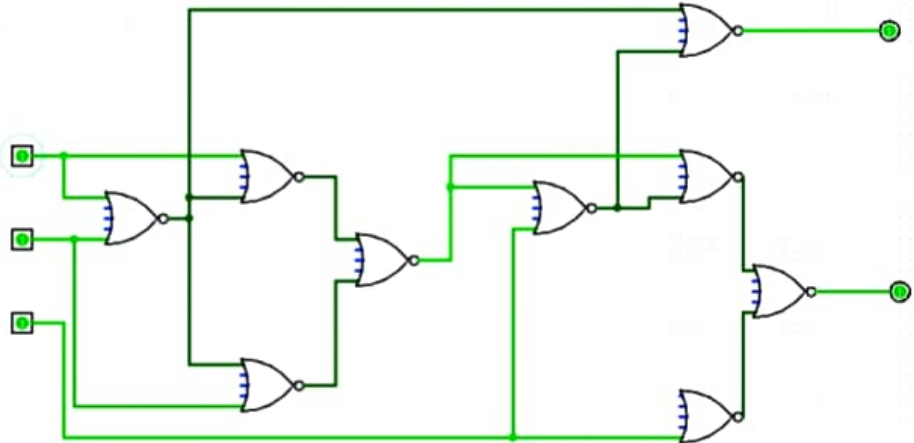




- Untitled\*
- main
- Wiring
- Gates
  - NOT Gate
  - Buffer
  - AND Gate
  - OR Gate
  - NAND Gate
  - NOR Gate
  - XOR Gate
  - XNOR Gate
  - Odd Parity
  - Even Parity
  - Controlled Buffer
  - Controlled Inverter
- Plexers
- Arithmetic
- Memory
- Input/Output
- Base



- Untitled\*
- main
- Wiring
- Gates
  - NOT Gate
  - Buffer
  - AND Gate
  - OR Gate
  - NAND Gate
  - NOR Gate
  - XOR Gate
  - XNOR Gate
  - Odd Parity
  - Even Parity
  - Controlled Buffer
  - Controlled Inverter
- Plexers
- Arithmetic
- Memory
- Input/Output
- Base



Registers	Flag	Load me at
A 18	S 0	1 LDA 2000
BC 00 05	Z 1	2 MOV B, A
DE 00 18	AC 0	3 MVI C, #01
HE 00 00	P 1	4 MVI D, #01
PSW 00 00	C 0	5 LOOP: MOV D, C
PC 42 18		6 MVI A, 2008
SP FF FF		7 LDI ADD B
Int-Reg 00		8 DCR B
		9 JNZ LP
		10 MOV D, A
		11 DCR C
		12 DCR B
		13 JNZ LOOP
		14 MOV A, E
		15 RLA 2000
		16 RLI
		17

Decimal - Hex Conversion

Decimal: 0    Hex: 0

I/O Ports

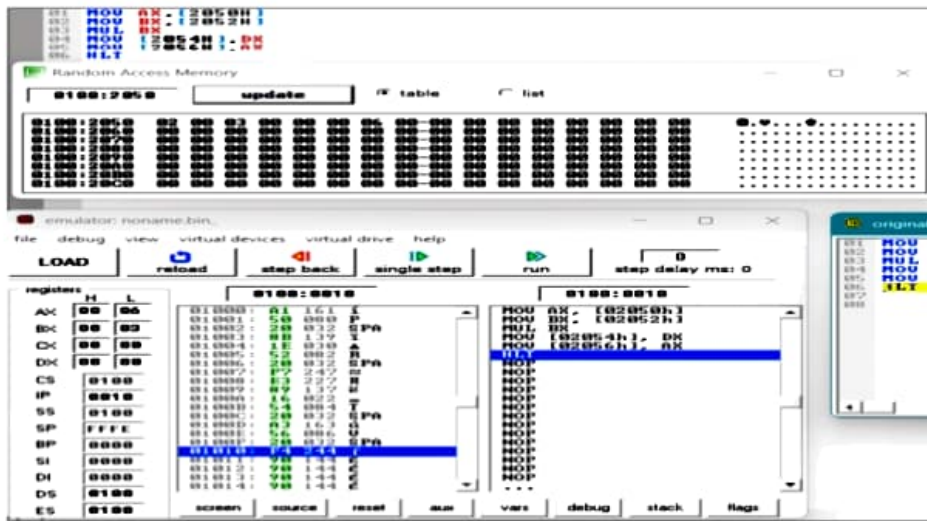
0    -    +    00

Memory

2001    -    +    04

Start	2018	OK
Address (Hex)	Address	Data
07DA	2010	24
07DB	2011	0
07DC	2012	0
07DD	2013	0
07DE	2014	0
07DF	2015	0
07E0	2016	0
07E1	2017	0
07E2	2018	0
07E3	2019	0
07E4	2020	0
07E5	2021	0
07E6	2022	0
07E7	2023	0

Line No: 0    Assembler Message: Program assembled successfully



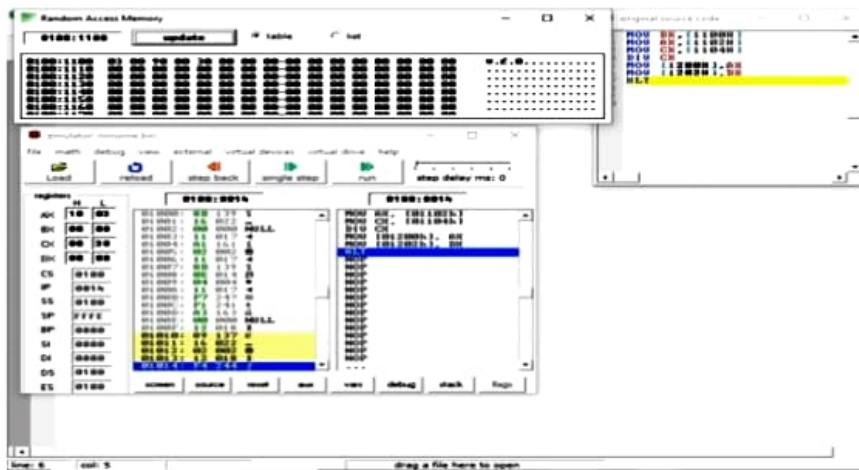
```

1 LOOP: LXI H, 3500
2 MVI D, 00
3 MVI C, 05
4 LOOP1: MOV A, M
5 INX H
6 CMP M
7 JC LOOP2
8 MOV B, M
9 MOV M, A
10 DCX H
11 MOV M, B
12 INX H
13 MVI D, 01
14 LOOP2: DCR C
15 JNZ LOOP1
16 MOV A, D
17 RUC
18 JC LOOP
19 HLT

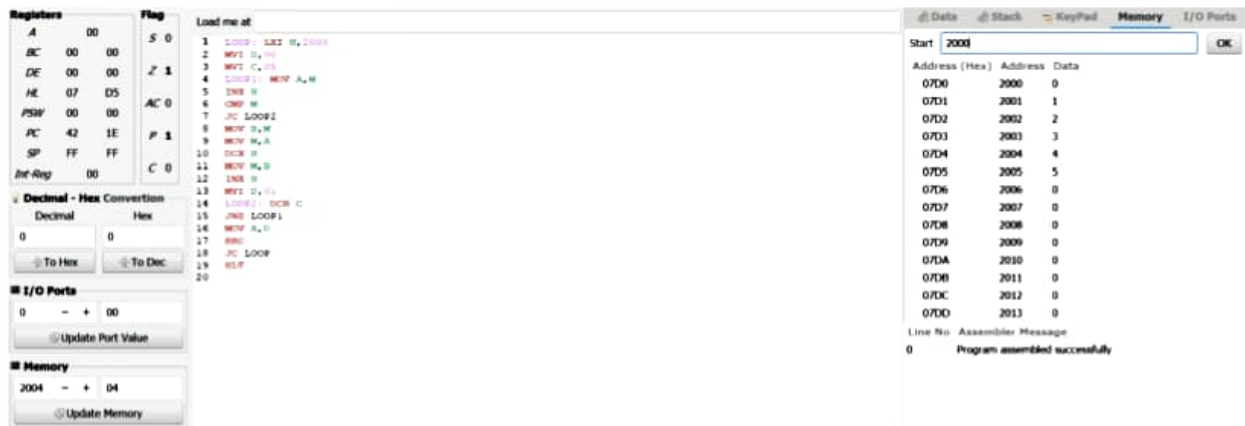
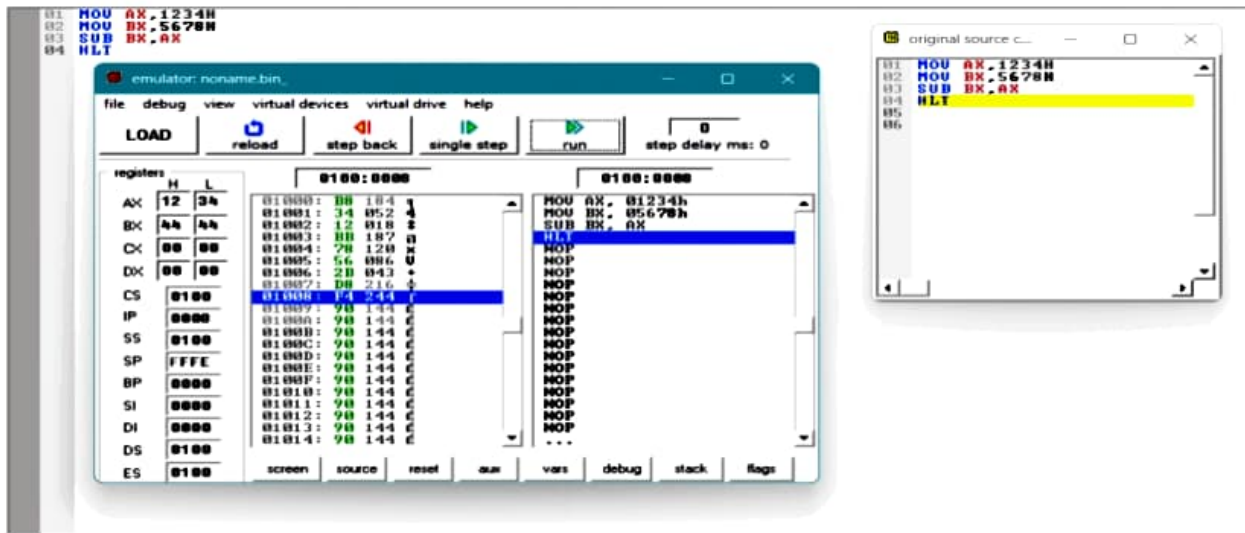
```

Start	3500	OK
Address (Hex)	Address	Data
00AC	3500	2
00AD	3501	5
00AE	3502	9
00AF	3503	0
00B0	3504	0
00B1	3505	0
00B2	3506	0
00B3	3507	0
00B4	3508	0
00B5	3509	0
00B6	3510	0
00B7	3511	0

Line No. Assembler Message







BC	02	00	S	0
DE	00	00	Z	0
HL	00	00	AC	0
PSW	00	00		
PC	42	0C	P	1
SP	FF	FF	C	0
Int-Reg	00			

**Decimal - Hex Conversion**

Decimal	Hex
0	0

**I/O Ports**

0 - + 00

**Memory**

1501 - + 08

```

1 LDA 9500
2 MOV D, A
3 LDA 9501
4 ADD B
5 STA 9502
6 RST 1
7

```

Start	8502	
Address (Hex)	Address	Data
2136	8502	6
2137	8503	0
2138	8504	0
2139	8505	0
213A	8506	0
213B	8507	0
213C	8508	0
213D	8509	0
213E	8510	0
213F	8511	0
2140	8512	0
2141	8513	0
2142	8514	0
2143	8515	0

Line No Assembler Message  
0 Program assembled successfully

A	09	S	0
BC	08	00	
DE	00	00	Z 0
HL	00	00	AC 0
PSW	00	00	
PC	42	0C	P 1
SP	FF	FF	C 0
Int-Reg	00		

**Decimal - Hex Conversion**

Decimal	Hex
0	0

**I/O Ports**

0 - + 00

**Memory**

8501 - + 01

Load me at:

```

1 LDA 9500
2 MOV D, A
3 LDA 9501
4 ADD B
5 STA 9502
6 RST 1
7

```

Data	Stack	KeyPad	Memory	I/O Ports
Start 8502				OK
Address (Hex)	Address	Data		
2136	8502	9		
2137	8503	0		
2138	8504	0		
2139	8505	0		
213A	8506	0		
213B	8507	0		
213C	8508	0		
213D	8509	0		
213E	8510	0		
213F	8511	0		
2140	8512	0		
2141	8513	0		
2142	8514	0		
2143	8515	0		

Line No Assembler Message  
0 Program assembled successfully

A	05	S	1
BC	04	05	
DE	00	00	Z 0
HL	13	89	AC 0
PSW	00	00	
PC	42	19	P 1
SP	FF	FF	C 1
Int-Reg	00		

**Decimal - Hex Conversion**

Decimal	Hex
0	0

**I/O Ports**

0 - + 00

**Memory**

5001 - + 14

Load me at:

```

1 LIT H, 5000
2 MOV B, H
3 MOV C, 00
4 INR B
5 MOV A, H
6 NEXT: CMP B
7 JC LOOP
8 MOV B, H
9 INR C
10 JNC NEXT
11 LOOP: STA 5002
12 MOV A, C
13 STA 5003
14 HLT

```

Data	Stack	RayPad	<b>Memory</b>	I/O Ports
Star1 5002				OK
Address (Hex)	Address	Data		
138A	5002	0		
138B	5003	5		
138C	5004	0		
138D	5005	0		
138E	5006	0		
138F	5007	0		
1390	5008	0		
1391	5009	0		
1392	5010	0		
1393	5011	0		
1394	5012	0		
1395	5013	0		
1396	5014	0		
1397	5015	0		

Line No Assembler Message  
0 Program assembled successfully

A	06	S	0
BC	02	00	
DE	00	00	Z 1
HL	00	00	AC 0
PSW	00	00	
PC	42	1A	P 1
SP	FF	FF	C 0
Int-Reg	00		

**Decimal - Hex Conversion**

Decimal	Hex
0	0

**I/O Ports**

0 - + 00

**Memory**

8501 - + 03

Load me at:

```

1 LDA 9500
2 MOV B, A
3 LDA 9501
4 MOV C, A
5 CPI 00
6 JZ LOOP
7 XRA A
8 LOOP1: ADD B
9 DCR C
10 JZ LOOP
11 JMP LOOP1
12 LOOP: STA 9502
13 RST 1
14

```

Data		Stack		KeyPad	
Start	8502				
Address (Hex)		Address		Data	
2136		8502		6	
2137		8503		0	
2138		8504		0	
2139		8505		0	
213A		8506		0	
213B		8507		0	
213C		8508		0	
213D		8509		0	
213E		8510		0	
213F		8511		0	
2140		8512		0	
2141		8513		0	
2142		8514		0	
2143		8515		0	

Line No Assembler Message  
0 Program assembled successfully