



SIMATS
ENGINEERING



SIMATS
Soveetho Institute of Medical And Technical Sciences
(Declared as Deemed to be University under Section 3 of UGC Act 1956)

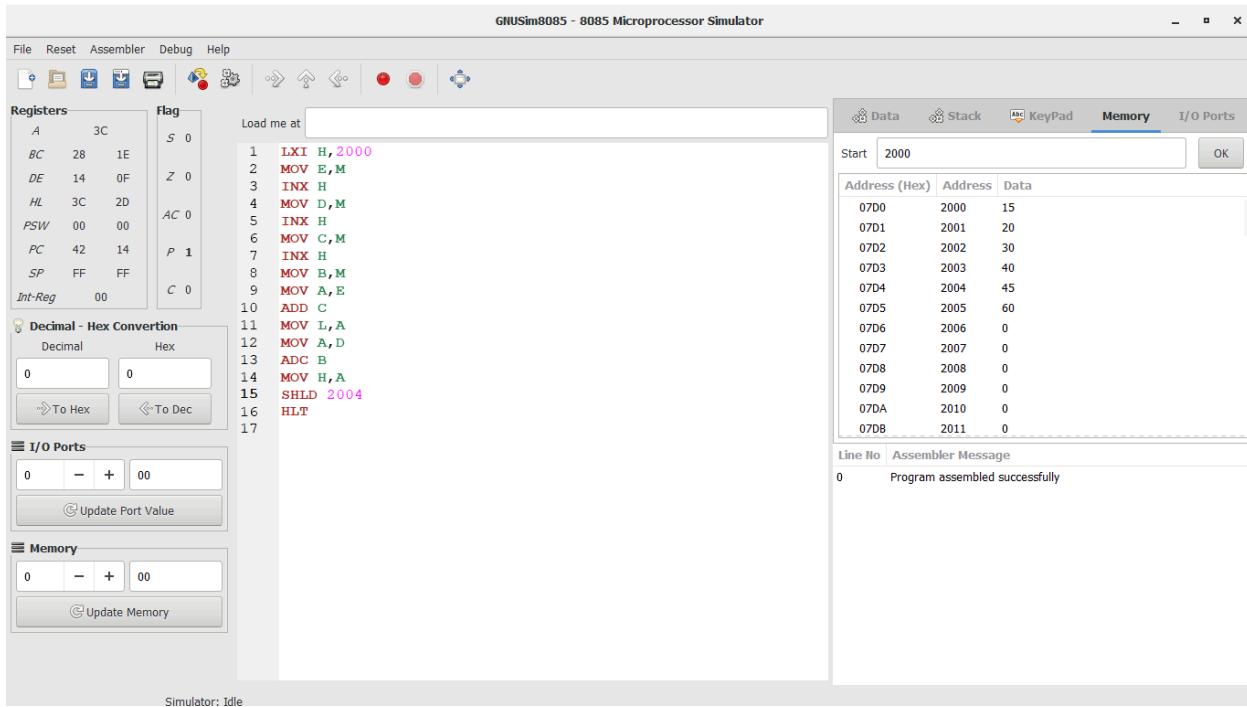
Name: Dilipan.V

Reg no: 192421243

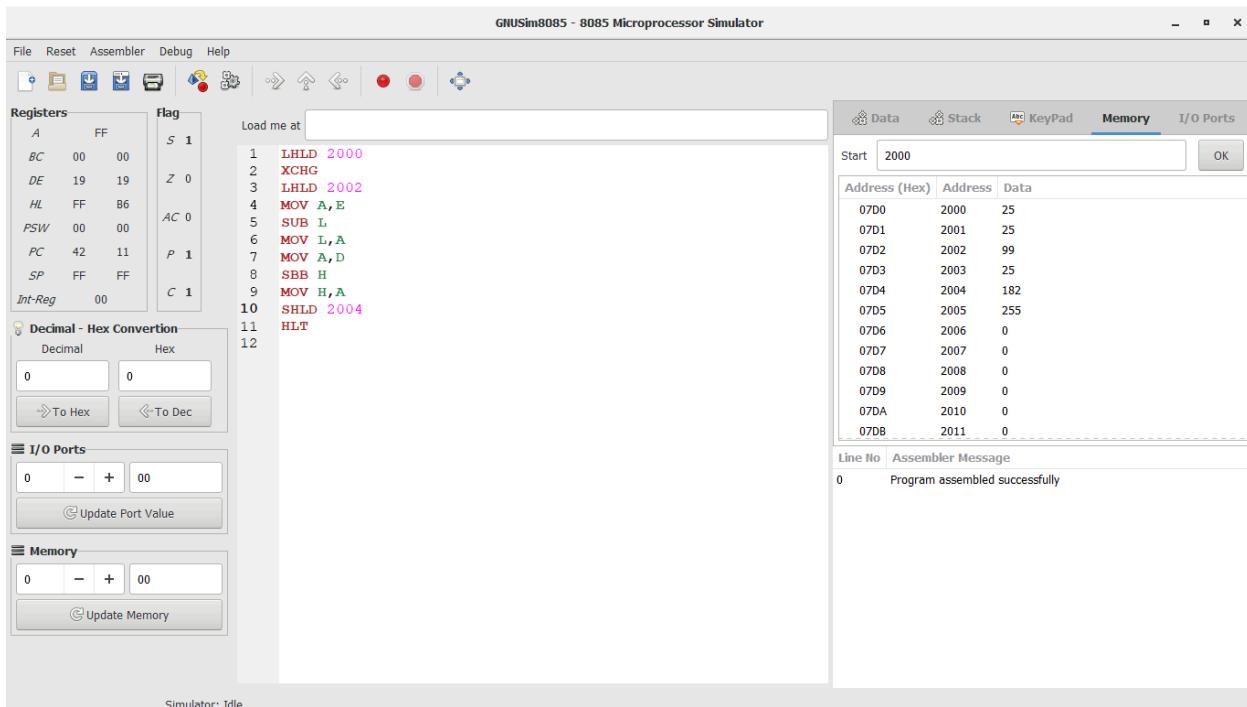
Course: Computer Architecture

Course code:CSA1257

Microprocessor 8085



5: Addition for 16 Bit



6: Subtraction for 16 Bit

GNUSim8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

Registers Flag

A	32	S	0
BC	0A 00	Z	1
DE	00 00		
HL	00 00		
PSW	00 00	AC	0
PC	42 13	P	1
SP	FF FF	C	0
Int-Reg	00		

Load me at:

```

1 LDA 2000
2 MOV B,A
3 LDA 2001
4 MOV C,A
5 MVI A,00
6
7 LOOP: ADD B
8 DCR C
9 JNZ LOOP
10
11 STA 2002
12 HLT
13

```

Data Stack KeyPad Memory I/O Ports

Start: 2000 OK

Address (Hex)	Address	Data
07D0	2000	10
07D1	2001	5
07D2	2002	50
07D3	2003	10
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

I/O Ports

Memory

Simulator: Idle

7: Multiplication for 16 Bit

GNUSim8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

Registers Flag

A	00	S	1
BC	00 05	Z	0
DE	02 00		
HL	00 00		
PSW	00 00	AC	0
PC	42 1D	P	0
SP	FF FF	C	1
Int-Reg	00		

Load me at:

```

1 LDA 2000
2 MOV B,A
3 LDA 2001
4 MOV C,A
5 MVI D,00
6 DIV: MOV A,B
7 SUB C
8 JC END
9 MOV B,A
10 INR D
11 JMP DIV
12 END: MOV A,D
13 STA 2002
14 MOV A,B
15 STA 2003
16 HLT
17

```

Data Stack KeyPad Memory I/O Ports

Start: 2000 OK

Address (Hex)	Address	Data
07D0	2000	10
07D1	2001	5
07D2	2002	2
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

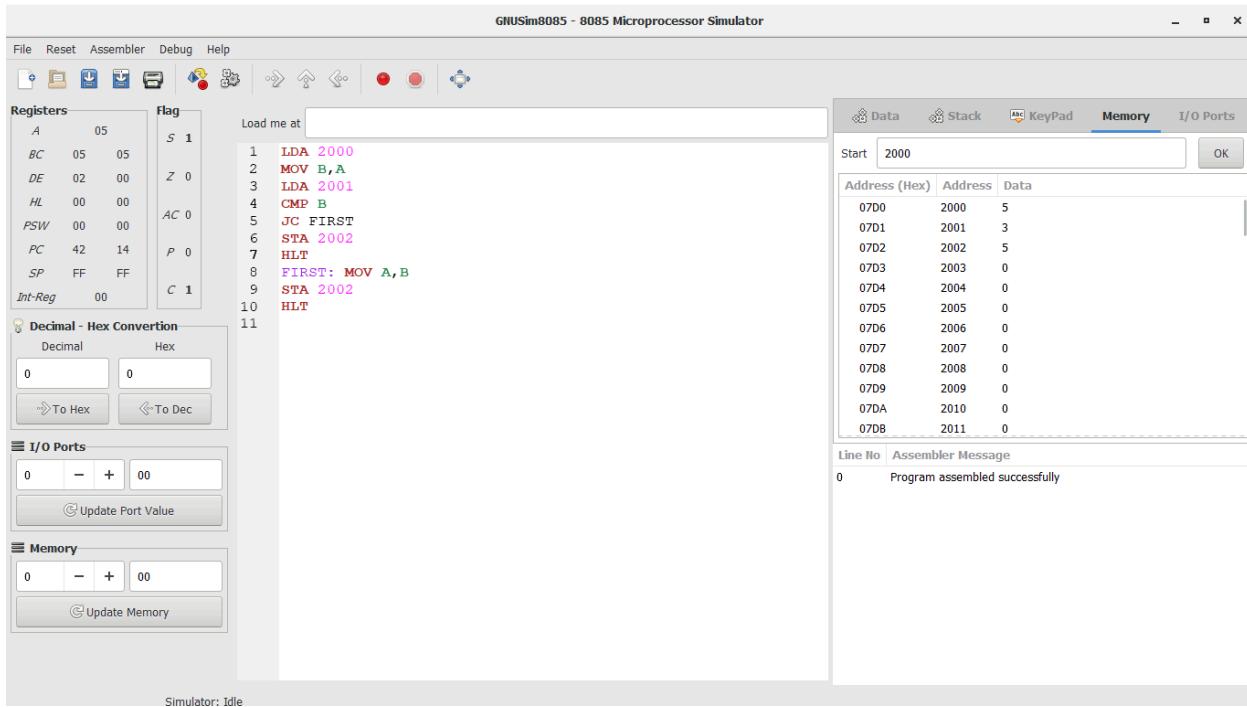
0 Program assembled successfully

I/O Ports

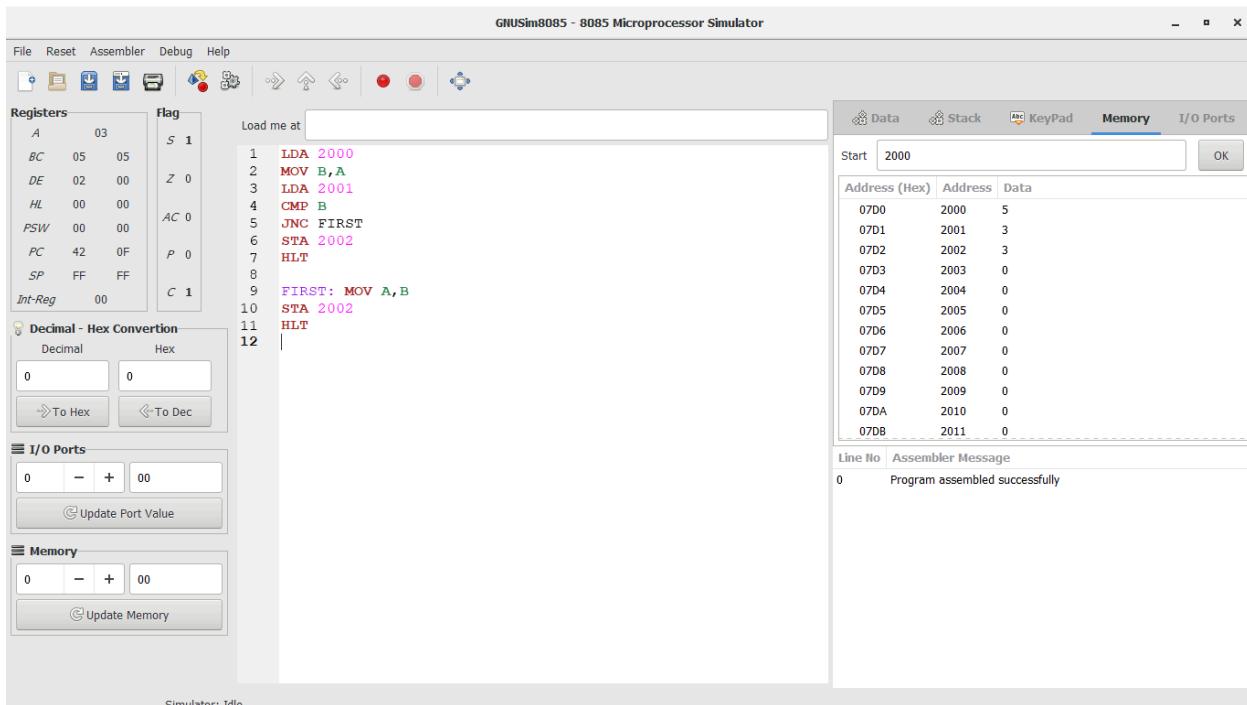
Memory

Simulator: Idle

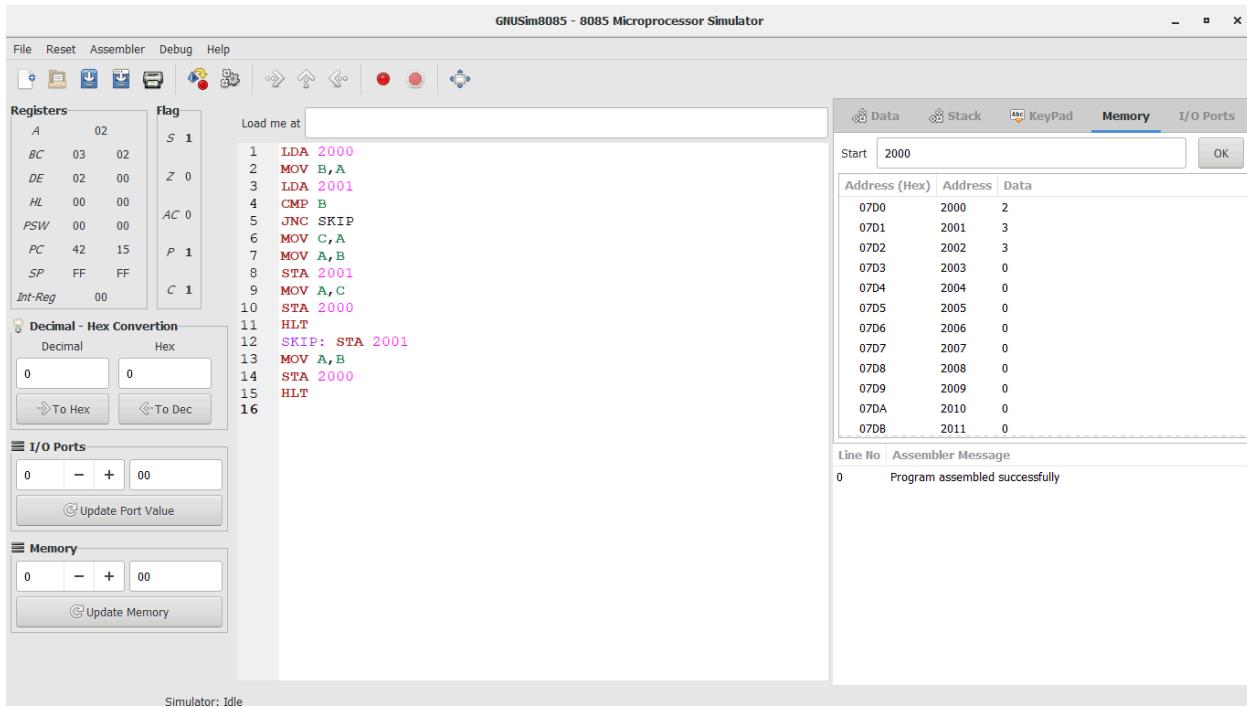
8: Divide for 16 Bit



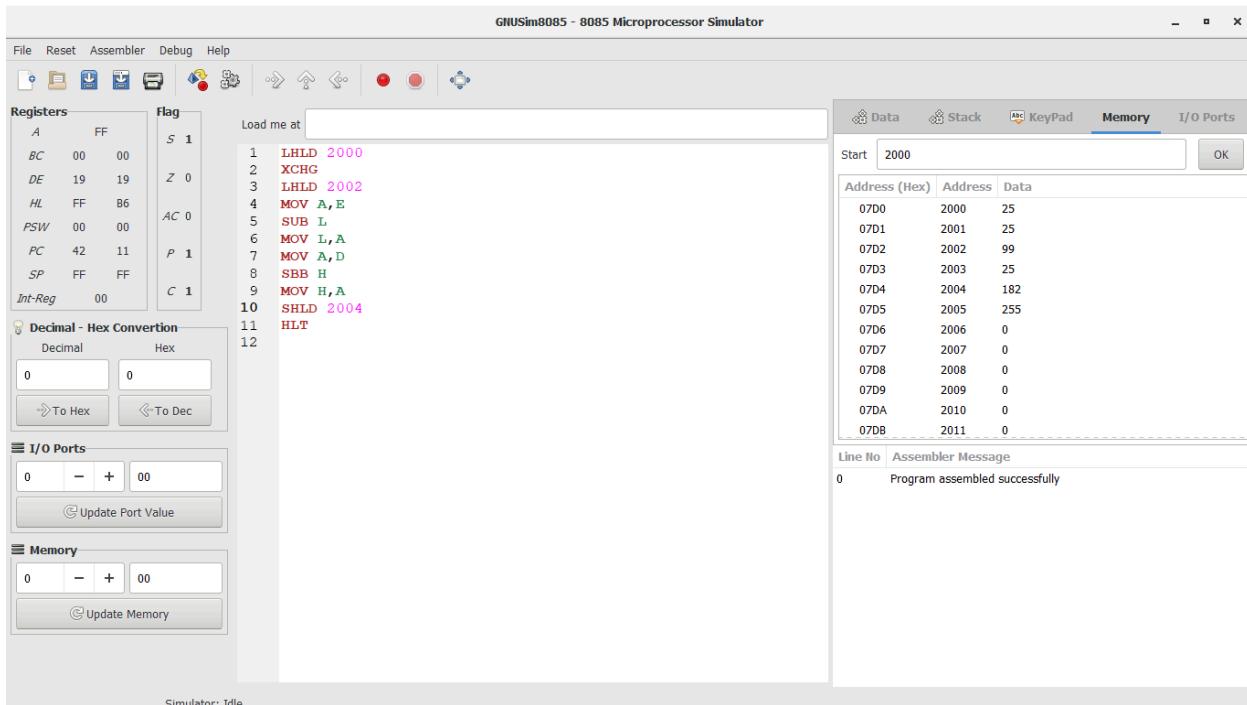
13: Greatest of two Number



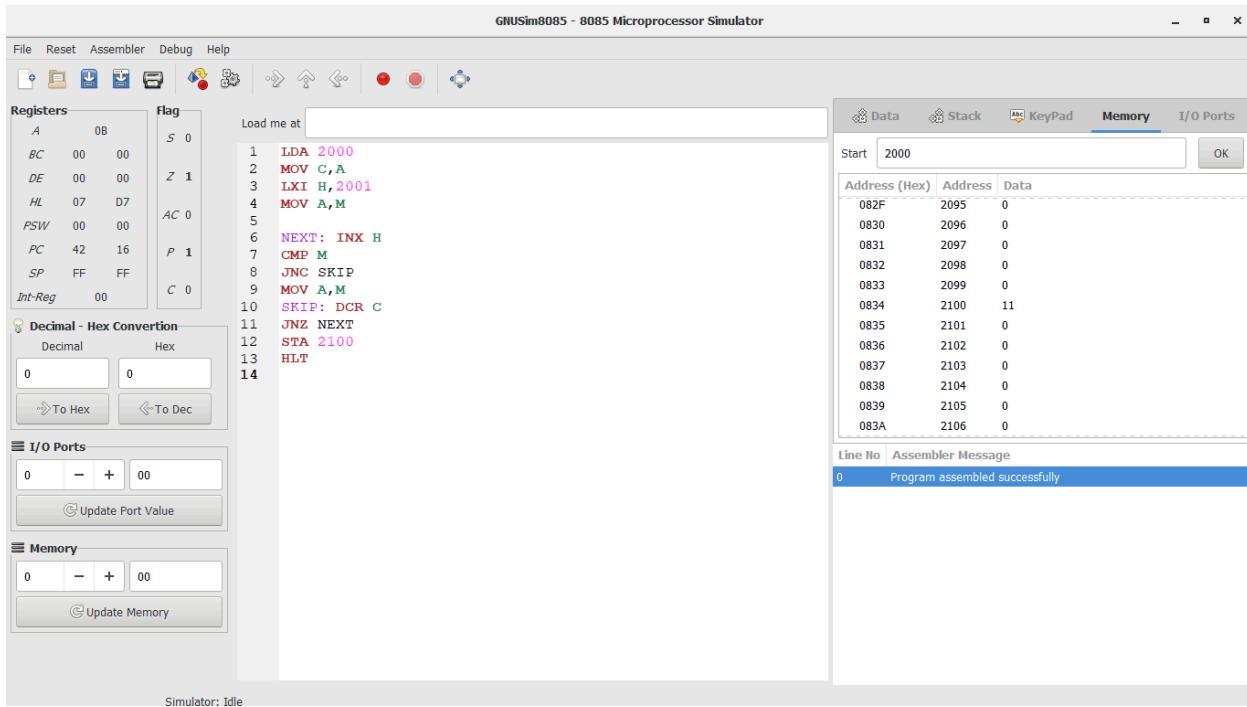
14: Smallest of two Number



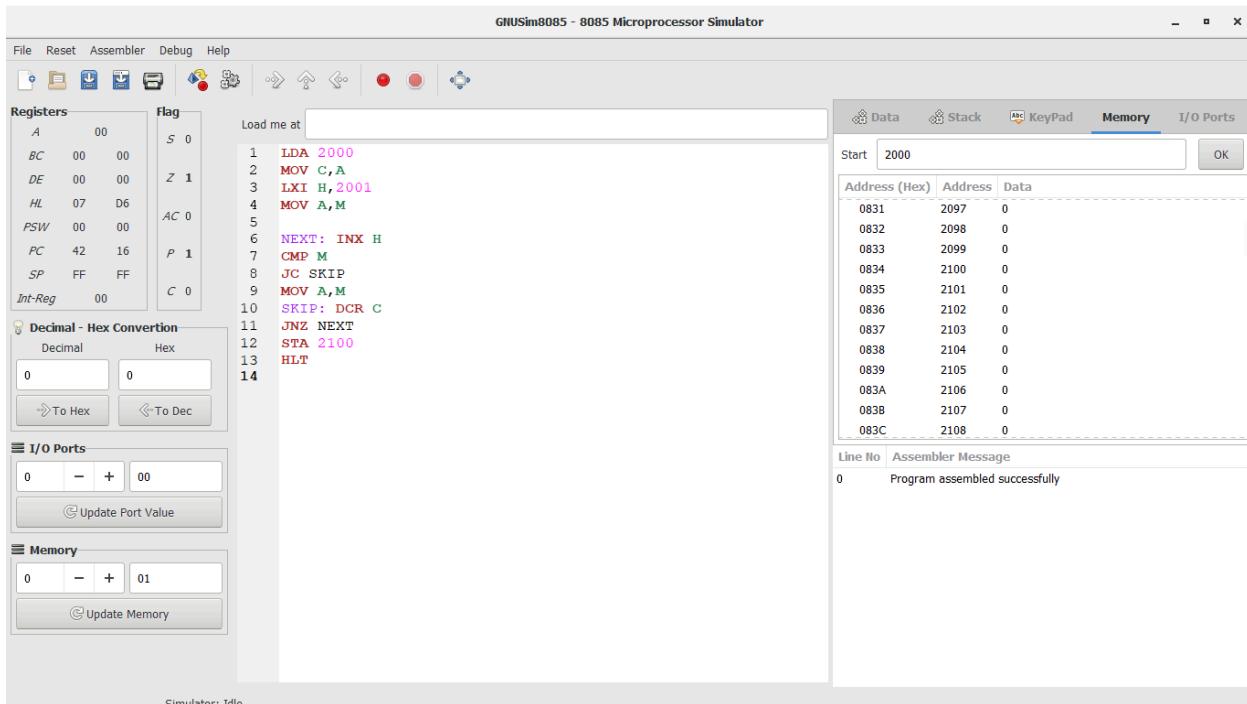
20: Arrange numbers in Ascending order



21: Arrange numbers in Descending order



22: Find the largest number in an array



23: Minimum number in an array

GNUSim8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

The screenshot shows the assembly code for calculating the LCM of two numbers:

```

1 LDA 2000
2 MOV B,A
3 LDA 2001
4 MOV C,A
5 MOV D,B
6
7 LCM: MOV A,D
8 SUB C
9 JZ OUT
10 JC ADD
11 MOV D,A
12 JMP LCM
13 ADD: MOV A,D
14 ADD B
15 MOV D,A
16 JMP LCM
17 OUT: MOV A,D
18 STA 2002
19 HLT
20

```

Registers and Memory content:

- Registers:** A=09, BC=05 09, DE=09 00, HL=07 D6, PSW=00 00, FC=42 20, SP=FF FF, Int-Reg=00.
- Flag:** S=0, Z=1, AC=0, P=1, C=0.
- Memory:** Address (Hex) 2000-2011, Data values: 5, 9, 9, 0, 0, 0, 0, 0, 0, 0, 0.

Message: Program assembled successfully.

24: Find the LCM of 2 numbers

GNUSim8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

The screenshot shows the assembly code for calculating the GCD of two numbers:

```

1 LDA 2000
2 MOV B,A
3 LDA 2001
4 MOV C,A
5
6 GCD: MOV A,B
7 CMP C
8 JZ DONE
9 JC LESS
10 SUB C
11 MOV B,A
12 JMP GCD
13 LESS: MOV A,C
14 SUB B
15 MOV C,A
16 JMP GCD
17 DONE: MOV A,B
18 STA 2002
19 HLT
20

```

Registers and Memory content:

- Registers:** A=01, BC=01 01, DE=09 00, HL=07 D6, PSW=00 00, FC=42 20, SP=FF FF, Int-Reg=00.
- Flag:** S=0, Z=1, AC=0, P=1, C=0.
- Memory:** Address (Hex) 2000-2011, Data values: 5, 9, 1, 0, 0, 0, 0, 0, 0, 0, 0.

Message: Program assembled successfully.

25: Find the GCD of 2 numbers

GNUSim8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

Registers

A	01
BC	00 01
DE	00 03
HL	00 06
PSW	00 00
FC	42 22
SP	FF FF
Int-Reg	00

Flag

S	0
Z	1
AC	0
P	1
C	0

Load me at:

```

1 LDA 2000
2 MOV C,A
3 LXI H,0001
4
5 CHK: MOV A,C
6 CPI 01
7 JC DONE
8 JZ DONE
9
10 FACT: XCHG
11 LXI H,0000
12 MOV B,C
13
14 MLOOP: DAD D
15 DCR B
16 JNZ MLOOP
17
18 DCR C
19 JMP CHK
20
21 DONE: SHLD 2001
22 HLT
23

```

Data Stack KeyPad Memory I/O Ports

Start: 2000 OK

Address (Hex)	Address	Data
07D0	2000	3
07D1	2001	6
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

Simulator: Idle

26: Find factorial of n in the given number

GNUSim8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

Registers

A	09
BC	00 01
DE	00 03
HL	00 06
PSW	00 00
FC	42 08
SP	FF FF
Int-Reg	00

Flag

S	0
Z	1
AC	0
P	1
C	0

Load me at:

```

1 LDA 2000
2 DAA
3 STA 2001
4 HLT
5

```

Data Stack KeyPad Memory I/O Ports

Start: 2000 OK

Address (Hex)	Address	Data
07D0	2000	9
07D1	2001	9
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

Simulator: Idle

27: Decimal number to Hexadecimal number