

ONEs AND TWOs COMPLEMENT

EXP NO: 17

AIM: To compute one's and two's complement using 8085 processor.

ALGORITHM:

- 1) Load the base address of the array in a register pair.
- 2) Move the data from memory location into accumulator.
- 3) Convert all ones into zeros and zeros into ones.
- 4) Add 01 to the accumulator content.
- 5) Store the results of one's and two's complement.

PROGRAM:

LDA 3000

CMA

STA 3001

ADI 01

STA 3002

HLT

INPUT & OUTPUT

The screenshot displays the 8085 processor simulator interface. The main window shows the assembly program being executed, with the following instructions:

```
1 LDA 3000
2 CMA
3 STA 3001
4 ADI 01
5 STA 3002
6 HLT
```

The left panel shows the registers and flags. The registers are:

Register	Value
A	00
BC	00 00
DE	00 00
HL	1F 40
PSW	00 00
PC	42 0D
SP	FF FF
Int-Reg	00

The flags are:

Flag	Value
S	0
Z	1
AC	1
P	1
C	1

The right panel shows the memory dump. The memory locations and their values are:

Address (Hex)	Address	Data
0BB9	3001	255
0BBA	3002	0
0BBB	3003	171
0BBC	3004	0
0BBD	3005	0
0BBE	3006	0
0BBF	3007	0
0BC0	3008	0
0BC1	3009	0
0BC2	3010	0
0BC3	3011	0
0BC4	3012	0
0BC5	3013	0
0BC6	3014	0

The bottom panel shows the I/O Ports and Memory sections, both with values 0 and 00.

The status bar at the bottom indicates "Simulator: Idle".

RESULT: Thus the program was executed successfully using 8085 processor simulator.