

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 GNUSim8085 - 8085 Microprocessor Simulator interface. The main window shows the assembly program being loaded and executed. The program consists of the following instructions:

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

The Registers window shows the following values:

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

The Flag window shows the following values:

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

The Memory window shows the following values:

| Address (Hex) | Address | Data |
|---------------|---------|------|
| 0BB8 | 3000 | 5 |
| 0BB9 | 3001 | 250 |
| 0BBA | 3002 | 251 |
| 0BBB | 3003 | 0 |
| 0BBC | 3004 | 0 |
| 0BBD | 3005 | 0 |
| 0BBE | 3006 | 0 |
| 0BBF | 3007 | 0 |
| 0BC0 | 3008 | 0 |
| 0BC1 | 3009 | 0 |
| 0BC2 | 3010 | 0 |
| 0BC3 | 3011 | 0 |

The Assembler Message window shows the following message:

```
0 Program assembled successfully
```

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