

## 8-BIT MULTIPLICATION

### EXP NO: 3

**AIM:** To write an assembly language program to implement 8-bit multiplication using 8085 processor.

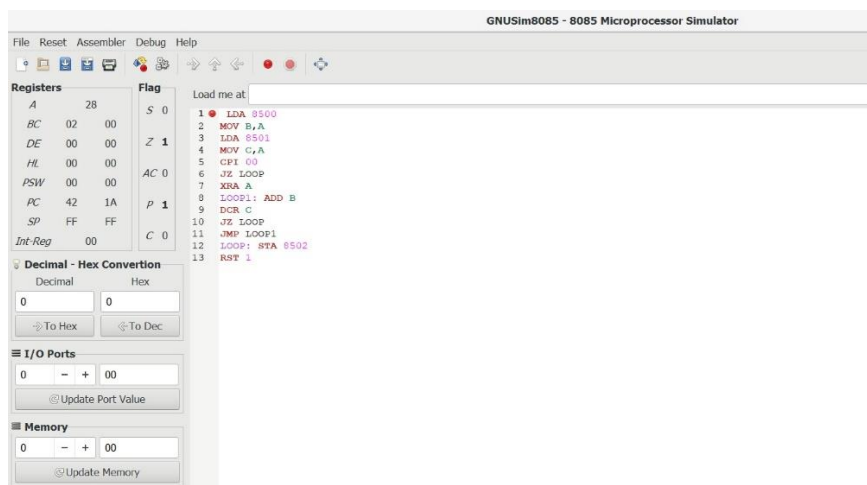
#### ALGORITHM:

- 1) Start the program by loading a register pair with the address of memory location.
- 2) Move the data to a register.
- 3) Get the second data and load it into the accumulator.
- 4) Add the two register contents.
- 5) Increment the value of the carry.
- 6) Check whether the repeated addition is over.
- 7) Store the value of product and the carry in the memory location.
- 8) Halt.

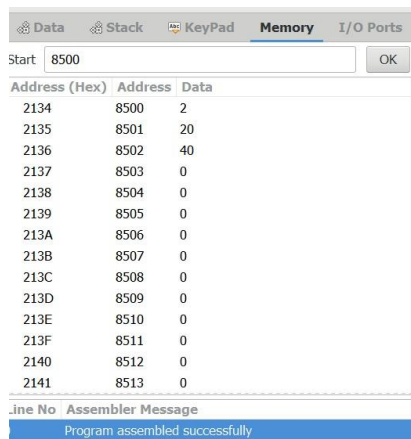
#### PROGRAM:

```
LDA 8500
MOV B, A
LDA 8501
MOV C, A
CPI 00
JZ LOOP
XRA A
LOOP1: ADD B
DCR C
JZ LOOP
JMP LOOP1
LOOP: STA 8502
RST 1
```

#### INPUT:



## OUTPUT:



The screenshot shows the 'Memory' window of an 8085 processor simulator. At the top, there are tabs for 'Data', 'Stack', 'Keypad', 'Memory', and 'I/O Ports'. The 'Memory' tab is selected. Below the tabs, there is a 'Start' field containing '8500' and an 'OK' button. The main area displays a table with three columns: 'Address (Hex)', 'Address', and 'Data'. The table contains 16 rows of memory data. At the bottom, there is a status bar with the text 'Program assembled successfully'.

Address (Hex)	Address	Data
2134	8500	2
2135	8501	20
2136	8502	40
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

Line No Assembler Message  
Program assembled successfully

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