# Lab-1

## ADDITION OF TWO 8-BIT NUMBERS

- **OBJECTIVES**

→ To add two 8-bit numbers located at 2030H and 2031H.

→ To store the sum at 2040H.

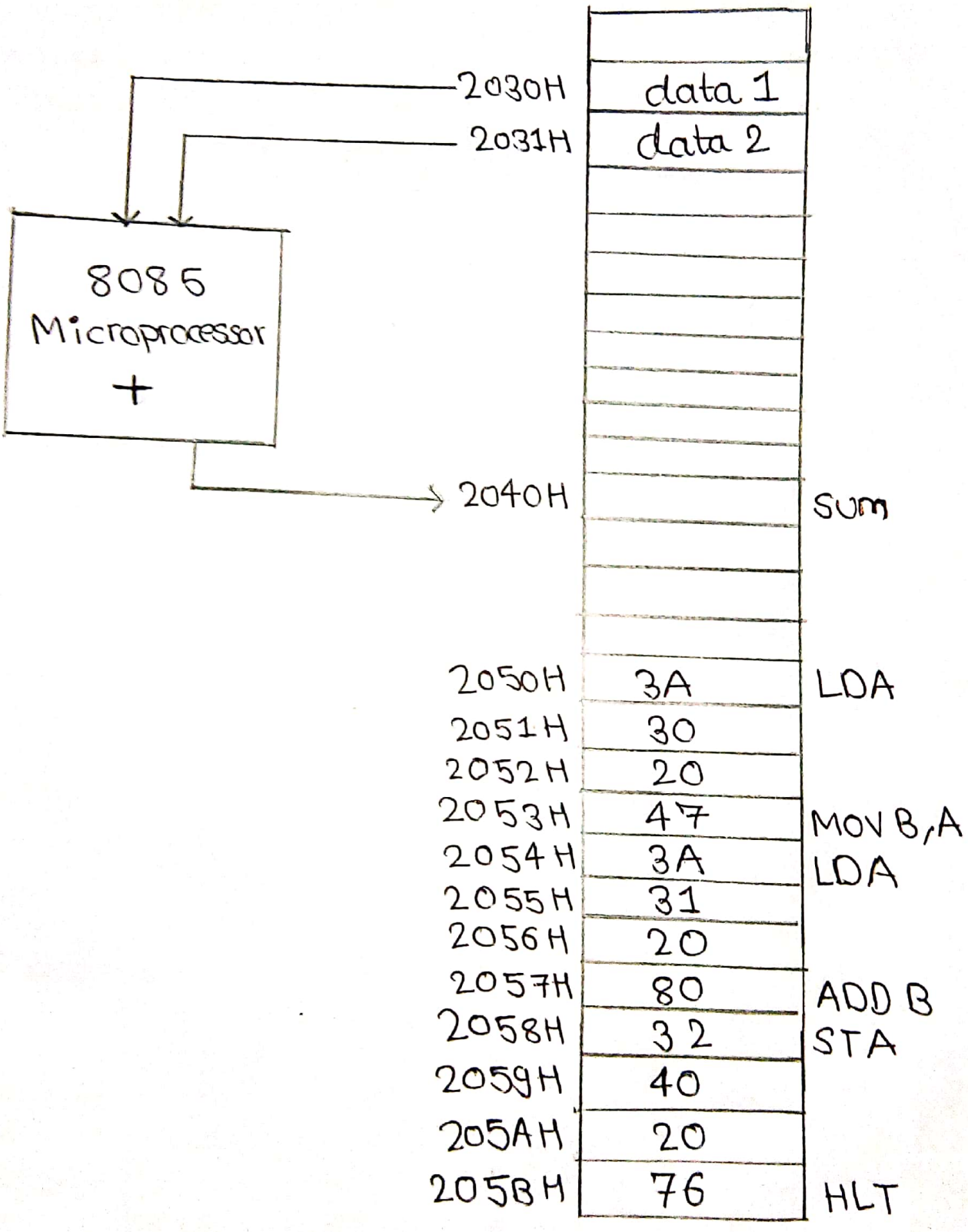
- **TOOLS**

→ 8085 microprocessor kit.

- **ASSEMBLY CODE**

```
LDA  2030H
MOV  B, A
LDA  2031H
ADD  B
STA  2040H
HLT
```

## • OBSERVATION & RESULT



Here, 23H is input as data 1 and 51H as data 2. After executing the program, the sum was found to be 74H at 2040H.

## CONCLUSION

The program to add two 8-bit numbers can be executed using 8085 microprocessor.

# Lab-2

# ADDITION OF TWO 16-BIT NUMBERS

- **OBJECTIVES**

→ To add two 16-bit numbers located at 2030H-2031H & 2032H-2033H

→ To store the sum at 2040H & 2041H.

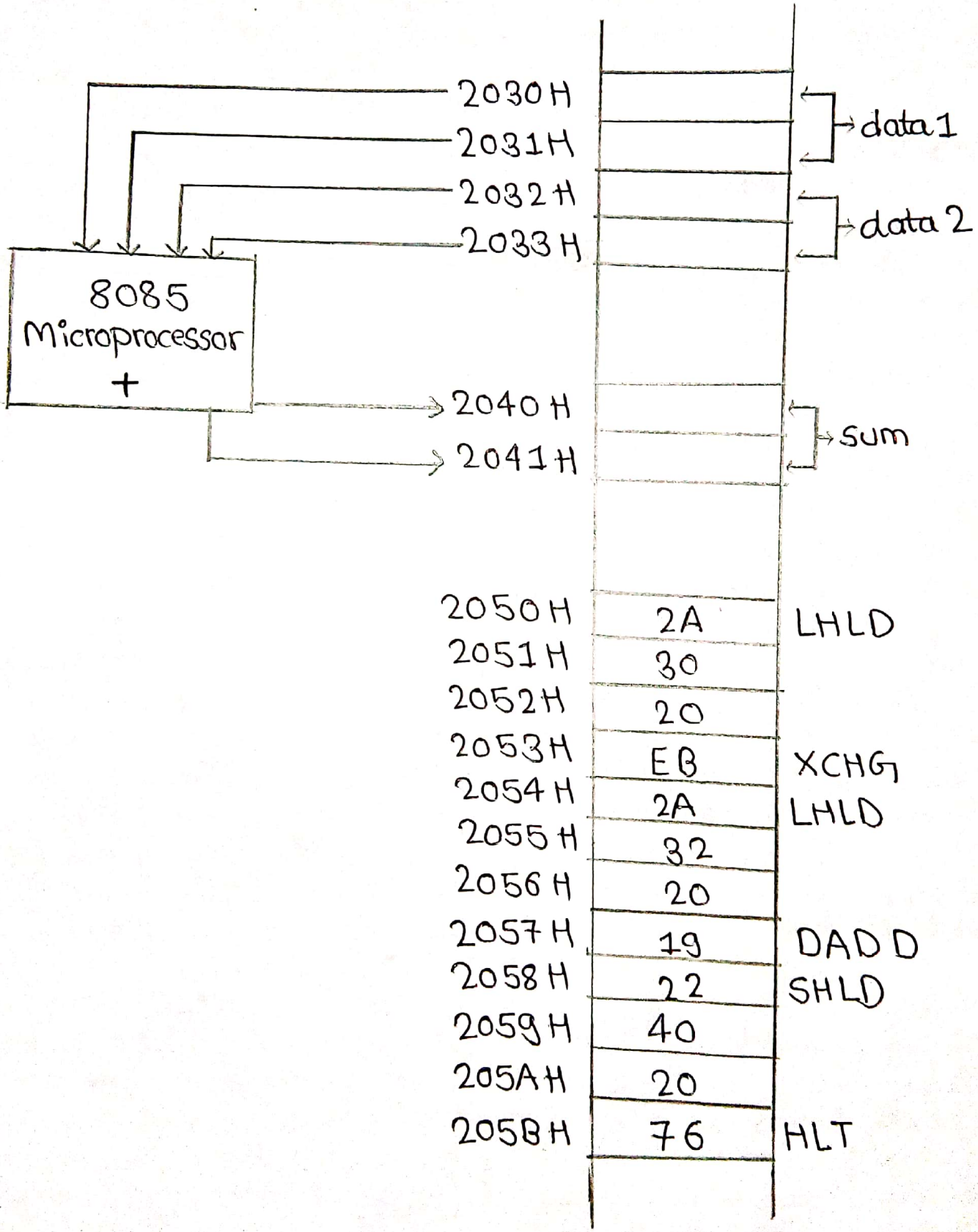
- **TOOLS**

→ 8085 microprocessor kit.

- **ASSEMBLY CODE**

```
LHLD  2030H
XCHG
LHLD  2032H
DAD   D
SHLD  2040H
HLT
```

- OBSERVATION & RESULT



Here, 1234H is input as data 1 and 4120H as data 2. After executing the program, the sum was found to be 5354H at 2040H & 2041H.

- CONCLUSION

The program to add two 16-bit numbers can be executed using 8085 microprocessor.

# Lab-3

## MULTIPLICATION OF TWO 8-BIT NUMBERS

- **OBJECTIVES**

→ To multiply two 8-bit numbers located at 2030H & 2031H.

→ To store the product at 2040H & 2041H.

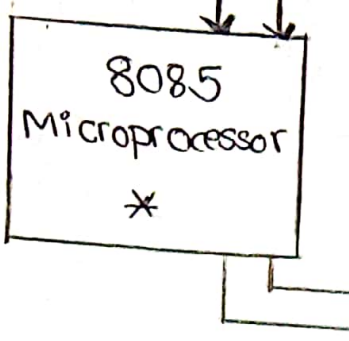
- **TOOLS**

→ 8085 microprocessor kit.

- **ASSEMBLY CODE**

```
        LDA  2030H
        MOV  B,A
        LDA  2031H
        MOV  C,A
        MVI  A,00H
        MVI  D,00H
AGAIN:  ADD  B
        JNC  SKIP
        INR  D
SKIP:   DCR  C
        JNZ  AGAIN
        STA  2040H
        MOV  A,D
        STA  2041H
        HLT
```

• OBSERVATION & RESULT




| | | |
|---|---|---|
| 2030H | data 1 | |
| 2031H | data 2 | |
| 2040H | | Lower 8-bit (product) |
| 2041H | | Higher 8-bit (product) |
| 2050H | 3A | LDA |
| 2051H | 30 | |
| 2052H | 20 | |
| 2053H | 47 | MOV B,A |
| 2054H | 3A | LDA |
| 2055H | 31 | |
| 2056H | 20 | |
| 2057H | 4F | MOV C,A |
| 2058H | 3E | MVI A |
| 2059H | 00 | |
| 205AH | 16 | MVI D |
| 205BH | 00 | |
| 205CH | 80 | ADD B |
| 205DH | D2 | JNC |
| 205EH | 61 | SKIP: |
| 205FH | 20 | |
| 2060H | 14 | INR D |
| 2061H | 0D | DCR C |
| 2062H | C2 | JNZ |
| 2063H | 5C | AGAIN: |
| 2064H | 20 | |
| 2065H | 32 | STA |
| 2066H | 40 | |
| 2067H | 20 | |
| 2068H | 7A | MOV A,D |
| 2069H | 32 | STA |
| 206AH | 41 | |
| 206BH | 20 | |
| 206CH | 76 | HLT |

Here, 23H is input as data 1 and 51H as data 2. After executing the program, the product was found to be B13H at 2040H & 2041H.

- CONCLUSION

The program to multiply two 8-bit numbers can be executed using 8085 microprocessor.