

Worksheet 3.3 or 10

Student Name: Vivek Kumar

UID: 21BCS8129

Branch: BE-CSE (LEET)

Section/Group: ON20BCS-809/A

Semester: 4th Sem

Date of Performance: 22/04/2022

Subject Name: MPI Lab

Subject Code: 22E-20CSP-253

1. Aim/Overview of the practical:

- I. Find the smaller number in an array.
- II. Find the larger number in an array.

2. Task to be done:

Write an 8085 Microprocessor program to find the smaller & larger number in an array.

3. Apparatus/Simulator used (For applied/experimental sciences/materials-based labs):

- I. 8085 Jubin simulator version 2 (Microprocessor Simulator)
- II. Java (jdk/ jre1.8.0_321)

4. Algorithm/Flowchart (For programming-based labs):

Algorithm to Find the smaller out of two numbers:

- I. Load the Counter data to Memory from 1000 address using Immediate Instruction **LXI H, 1000**.
- II. Move The data from Memory 1000 to Register 'C'.
- III. Increment the HL pair using **INX H** which will access the data from next address.
- IV. Move The data from Memory 'M' to Accumulator 'A'.
- V. Decrease the counter value by 1 which is stored in Register 'C' using **DCR C**.
- VI. Increment the HL pair using **INX H** which will access the data from next address.
- VII. Compare Data stored in Memory 'M' with Accumulator using **CMP M**.
- VIII. Check if Carry flag generated using **JC** Instruction.
- IX. If carry flag generated and set to 1 jump to the label and decrease the counter value by 1 which is stored in Register 'C' using **DCR C**.
- X. If carry flag not generated and set to 0. Move The data from Memory 'M' to Accumulator 'A' and then decrease the counter value by 1 which is stored in Register 'C' using **DCR C**.
- XI. Now check with the Zero flag generated or not using **JNZ** instruction.
- XII. If zero flag not generated and set to 0 jump to the loop and increment HL pair using **INX H** which will access the data from next address.
- XIII. Store the Accumulator data to the To the Memory address 2000 using **STA 2000**.
- XIV. End the execution using **HLT**.

Algorithm to Find the larger out of two numbers:

- I. Load the Counter data to Memory from 1000 address using Immediate Instruction **LXI H, 1000**.
- II. Move The data from Memory 1000 to Register 'C'.
- III. Increment the HL pair using **INX H** which will access the data from next address.
- IV. Move The data from Memory 'M' to Accumulator 'A'.
- V. Decrease the counter value by 1 which is stored in Register 'C' using **DCR C**.
- VI. Increment the HL pair using **INX H** which will access the data from next address.
- VII. Compare Data stored in Memory 'M' with Accumulator using **CMP M**.
- VIII. Check if Carry flag not generated using **JNC** Instruction.
- IX. If carry flag no generated and set to 0 jump to the label and decrease the counter value by 1 which is stored in Register 'C' using **DCR C**.
- X. If carry flag generated and set to 1. Move The data from Memory 'M' to Accumulator 'A' and then decrease the counter value by 1 which is stored in Register 'C' using **DCR C**.
- XI. Now check with the Zero flag generated or not using **JNZ** instruction.
- XII. If zero flag not generated and set to 0 jump to the loop and increment HL pair using **INX H** which will access the data from next address.
- XIII. Store the Accumulator data to the To the Memory address 2000 using **STA 2000**.
- XIV. End the execution using **HLT**.

5. Description/ Code:

Program to Find the smaller number in an array:

```
# ORG 0900H
    LXI H,1000
    MOV C,M
    INX H
    MOV A,M
    DCR C

LOOP:  INX H
        CMP M
        JC LABEL
        MOV A,M

LABEL:  DCR C
        JNZ LOOP
        STA 2000
        HLT

# ORG 1000
# DB 06H,09H,F6H,09H,D5H,02H,10H
```

Program to Find the larger number in an array:

```
# ORG 0900H
    LXI H,1000
    MOV C,M
    INX H
    MOV A,M
    DCR C

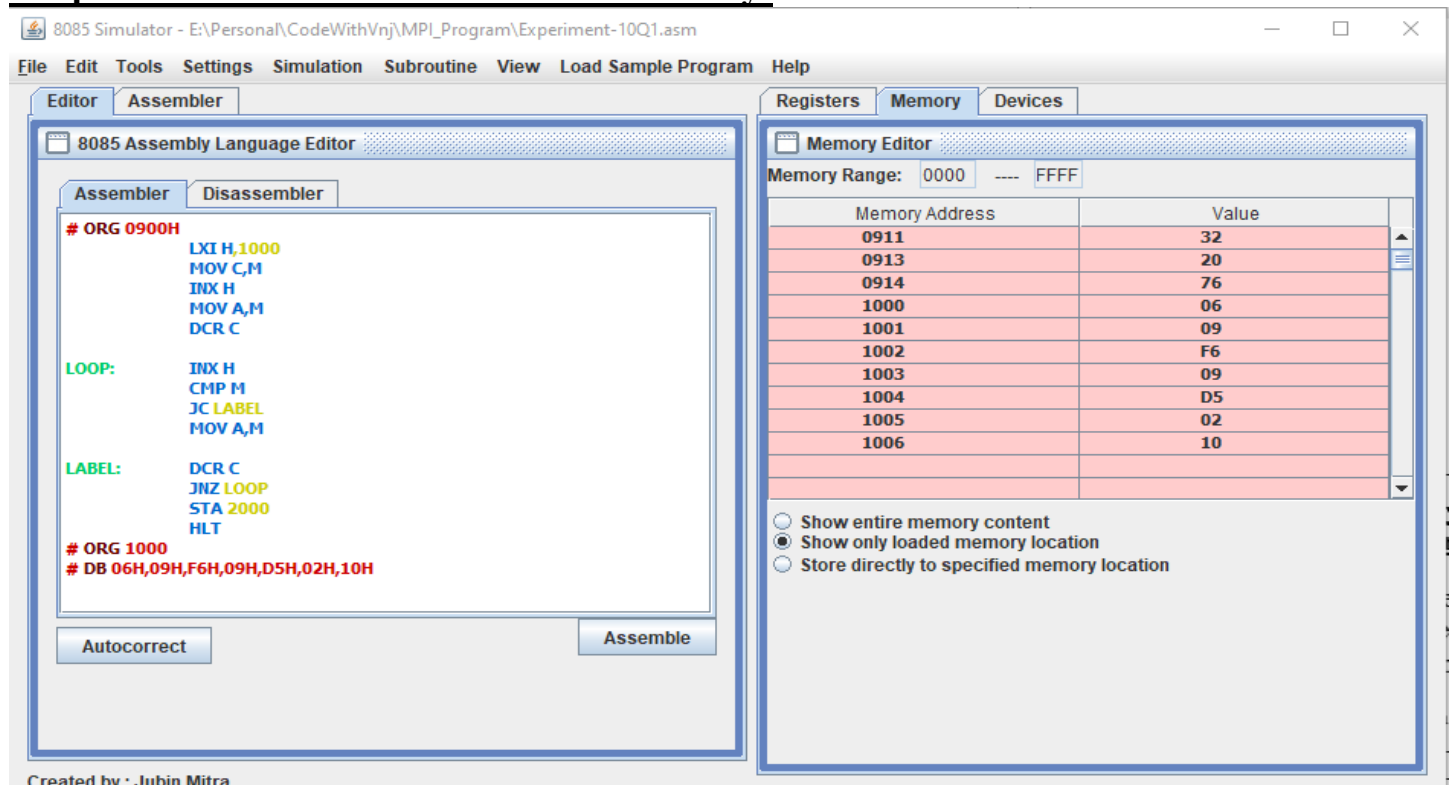
LOOP:  INX H
       CMP M
       JNC LABEL
       MOV A,M

LABEL:  DCR C
       JNZ LOOP
       STA 2000
       HLT

# ORG 1000
# DB 09H,01H,F6H,D0H,2DH,02H,F0H,FDH,A2H,F3H
```

6. Result/Output/Writing Summary:

Output to Find the smaller number in an array:



The screenshot shows the 8085 Simulator interface. The main window is titled "8085 Simulator - E:\Personal\CodeWithVnj\MPI_Program\Experiment-10Q1.asm". It has a menu bar (File, Edit, Tools, Settings, Simulation, Subroutine, View, Load Sample Program, Help) and a toolbar. The "Editor" tab is active, showing the "8085 Assembly Language Editor" with "Assembler" and "Disassembler" sub-tabs. The assembly code is displayed as follows:

```
# ORG 0900H
    LXI H,1000
    MOV C,M
    INX H
    MOV A,M
    DCR C

LOOP:  INX H
       CMP M
       JC LABEL
       MOV A,M

LABEL:  DCR C
       JNZ LOOP
       STA 2000
       HLT

# ORG 1000
# DB 06H,09H,F6H,09H,D5H,02H,10H
```

At the bottom of the editor are "Autocorrect" and "Assemble" buttons. To the right, the "Memory Editor" tab is active, showing a table of memory addresses and values. The "Memory Range" is set to "0000 ---- FFFF".

| Memory Address | Value |
|----------------|-------|
| 0911 | 32 |
| 0913 | 20 |
| 0914 | 76 |
| 1000 | 06 |
| 1001 | 09 |
| 1002 | F6 |
| 1003 | 09 |
| 1004 | D5 |
| 1005 | 02 |
| 1006 | 10 |

Below the table are three radio buttons: "Show entire memory content", "Show only loaded memory location" (which is selected), and "Store directly to specified memory location".

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8085 Simulator - E:\Personal\CodeWithVn\MPI_Program\Experiment-10Q1.asm

File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| 0904 | | INX H | 23 | 1 | 1 | 6 |
| 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| 0906 | | DCR C | 0D | 1 | 1 | 4 |
| 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| 0908 | | CMP M | BE | 1 | 2 | 7 |
| 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Run All At A Time Step By Step

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register L | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Memory(M) | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 0000 |
| Program Status Word(PSW) | 0000 |
| Program Counter(PC) | 0900 |
| Clock Cycle Counter | 0 |
| Instruction Counter | 0 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| 0904 | | INX H | 23 | 1 | 1 | 6 |
| 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| 0906 | | DCR C | 0D | 1 | 1 | 4 |
| 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| 0908 | | CMP M | BE | 1 | 2 | 7 |
| 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register L | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Memory(M) | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 0000 |
| Program Status Word(PSW) | 0000 |
| Program Counter(PC) | 0900 |
| Clock Cycle Counter | 0 |
| Instruction Counter | 0 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| 0904 | | INX H | 23 | 1 | 1 | 6 |
| 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| 0906 | | DCR C | 0D | 1 | 1 | 4 |
| 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| 0908 | | CMP M | BE | 1 | 2 | 7 |
| 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Memory(M) | 06 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1000 |
| Program Status Word(PSW) | 0000 |
| Program Counter(PC) | 0903 |
| Clock Cycle Counter | 10 |
| Instruction Counter | 1 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| 0904 | | INX H | 23 | 1 | 1 | 6 |
| 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| 0906 | | DCR C | 0D | 1 | 1 | 4 |
| 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| 0908 | | CMP M | BE | 1 | 2 | 7 |
| 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 06 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Memory(M) | 06 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1000 |
| Program Status Word(PSW) | 0000 |
| Program Counter(PC) | 0904 |
| Clock Cycle Counter | 17 |
| Instruction Counter | 2 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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8085 Simulator - E:\Personal\CodeWithVnj\MPI_Program\Experiment-10Q1.asm

File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 06 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Memory(M) | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1001 |
| Program Status Word(PSW) | 0000 |
| Program Counter(PC) | 0905 |
| Clock Cycle Counter | 23 |
| Instruction Counter | 3 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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8085 Simulator - E:\Personal\CodeWithVnj\MPI_Program\Experiment-10Q1.asm

File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 06 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Memory(M) | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1001 |
| Program Status Word(PSW) | 0900 |
| Program Counter(PC) | 0906 |
| Clock Cycle Counter | 30 |
| Instruction Counter | 4 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 05 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Memory(M) | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |

| Register | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Register | 14 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1001 |
| Program Status Word(PSW) | 0914 |
| Program Counter(PC) | 0907 |
| Clock Cycle Counter | 34 |
| Instruction Counter | 5 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 05 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 02 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Memory(M) | F6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Register | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Register | 14 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1002 |
| Program Status Word(PSW) | 0914 |
| Program Counter(PC) | 0908 |
| Clock Cycle Counter | 40 |
| Instruction Counter | 6 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Created by : Jubin Mitra

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 05 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 02 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Memory(M) | F6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Register | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Register | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1002 |
| Program Status Word(PSW) | 0911 |
| Program Counter(PC) | 0909 |
| Clock Cycle Counter | 47 |
| Instruction Counter | 7 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Created by : Jubin Mitra

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 05 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 02 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Memory(M) | F6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Register | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Register | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1002 |
| Program Status Word(PSW) | 0911 |
| Program Counter(PC) | 090D |
| Clock Cycle Counter | 57 |
| Instruction Counter | 8 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| 0904 | | INX H | 23 | 1 | 1 | 6 |
| 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| 0906 | | DCR C | 0D | 1 | 1 | 4 |
| 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| 0908 | | CMP M | BE | 1 | 2 | 7 |
| 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers Memory Devices

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 04 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 02 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Memory(M) | F6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1002 |
| Program Status Word(PSW) | 0911 |
| Program Counter(PC) | 090E |
| Clock Cycle Counter | 61 |
| Instruction Counter | 9 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

Created by : Jubin Mitra

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| 0904 | | INX H | 23 | 1 | 1 | 6 |
| 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| 0906 | | DCR C | 0D | 1 | 1 | 4 |
| 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| 0908 | | CMP M | BE | 1 | 2 | 7 |
| 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers Memory Devices

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 04 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 02 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Memory(M) | F6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1002 |
| Program Status Word(PSW) | 0911 |
| Program Counter(PC) | 0907 |
| Clock Cycle Counter | 71 |
| Instruction Counter | 10 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

Created by : Jubin Mitra

Now the loop will run Until our Zero flag set to 1. And then it will finally store the Accumulator value to 2000.

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 02 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 06 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Memory(M) | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 55 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1006 |
| Program Status Word(PSW) | 0255 |
| Program Counter(PC) | 090E |
| Clock Cycle Counter | 217 |
| Instruction Counter | 31 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 02 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 06 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Memory(M) | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 55 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1006 |
| Program Status Word(PSW) | 0255 |
| Program Counter(PC) | 0911 |
| Clock Cycle Counter | 224 |
| Instruction Counter | 32 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| ✓ 0901 | | | 00 | | | |
| ✓ 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 02 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 06 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Memory(M) | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 55 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1006 |
| Program Status Word(PSW) | 0255 |
| Program Counter(PC) | 0914 |
| Clock Cycle Counter | 237 |
| Instruction Counter | 33 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | 0 | 0 |

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File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|-----------|---------|-------|----------|----------|
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |
| 0913 | | | 20 | | | |
| ✓ 0914 | | HLT | 76 | 1 | 2 | 5 |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 02 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 06 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Memory(M) | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 55 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1006 |
| Program Status Word(PSW) | 0255 |
| Program Counter(PC) | 0914 |
| Clock Cycle Counter | 242 |
| Instruction Counter | 34 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | 0 | 0 |

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File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

Assembler

| * | Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|---|---------|-------|-----------|---------|-------|----------|----------|
| | 0902 | | | 10 | | | |
| ✓ | 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ | 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ | 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ | 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ | 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ | 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ | 0909 | | JC LABEL | DA | 3 | 3 | 10 |
| | 090A | | | 0D | | | |
| | 090B | | | 09 | | | |
| ✓ | 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ | 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ | 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| | 090F | | | 07 | | | |
| | 0910 | | | 09 | | | |
| ✓ | 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| | 0912 | | | 00 | | | |
| | 0913 | | | 20 | | | |
| ✓ | 0914 | | HLT | 76 | 1 | 2 | 5 |

Simulate

Start From → 0900

Run all At a Time

Step By Step

Registers Memory Devices

Memory Editor

Memory Range: 0000 ---- FFFF

| Memory Address | Value |
|----------------|-------|
| 0900 | 21 |
| 0902 | 10 |
| 0903 | 4E |
| 0904 | 23 |
| 0905 | 7E |
| 0906 | 0D |
| 0907 | 23 |
| 0908 | BE |
| 0909 | DA |
| 090A | 0D |
| 090B | 09 |
| 090C | 7E |
| 090D | 0D |
| 090E | C2 |
| 090F | 07 |
| 0910 | 09 |
| 0911 | 32 |
| 0913 | 20 |
| 0914 | 76 |
| 1000 | 06 |
| 1001 | 09 |
| 1002 | F6 |
| 1003 | 09 |
| 1004 | D5 |
| 1005 | 02 |
| 1006 | 10 |
| 2000 | 02 |

☐ Show entire memory content

☒ Show only loaded memory location

☐ Store directly to specified memory location

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Output to Find the larger number in an array:

8085 Simulator - E:\Personal\CodeWithVnj\MPI_Program\Experiment-10Q2.asm

File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

8085 Assembly Language Editor

Assembler Disassembler

```

# ORG 0900H
LXI H,1000
MOV C,M
INX H
MOV A,M
DCR C

LOOP:    INX H
        CMP M
        JNC LABEL
        MOV A,M

LABEL:    DCR C
        JNZ LOOP
        STA 2000
        HLT

# ORG 1000
# DB 09H,01H,F6H,D0H,2DH,02H,F0H,FDH,A2H,F3H

```

Autocorrect Assemble

Registers Memory Devices

Memory Editor

Memory Range: 0000 ---- FFFF

| Memory Address | Value |
|----------------|-------|
| 090B | 09 |
| 090C | 7E |
| 090D | 0D |
| 090E | C2 |
| 090F | 07 |
| 0910 | 09 |
| 0911 | 32 |
| 0913 | 20 |
| 0914 | 76 |
| 1000 | 09 |
| 1001 | 01 |
| 1002 | F6 |
| 1003 | D0 |
| 1004 | 2D |
| 1005 | 02 |
| 1006 | F0 |
| 1007 | FD |
| 1008 | A2 |
| 1009 | F3 |

☐ Show entire memory content
☒ Show only loaded memory location
☐ Store directly to specified memory location

Created by : Jubin Mitra

8085 Simulator - E:\Personal\CodeWithVnj\MPI_Program\Experiment-10Q2.asm

File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Run all At a Time Step By Step

Registers

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register L | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Memory(M) | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Register | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Register | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 0000 |
| Program Status Word(PSW) | 0000 |
| Program Counter(PC) | 0900 |
| Clock Cycle Counter | 0 |
| Instruction Counter | 0 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| 0904 | | INX H | 23 | 1 | 1 | 6 |
| 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| 0906 | | DCR C | 0D | 1 | 1 | 4 |
| 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| 0908 | | CMP M | BE | 1 | 2 | 7 |
| 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers Memory Devices

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Memory(M) | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1000 |
| Program Status Word(PSW) | 0000 |
| Program Counter(PC) | 0903 |
| Clock Cycle Counter | 10 |
| Instruction Counter | 1 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| 0904 | | INX H | 23 | 1 | 1 | 6 |
| 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| 0906 | | DCR C | 0D | 1 | 1 | 4 |
| 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| 0908 | | CMP M | BE | 1 | 2 | 7 |
| 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers Memory Devices

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Memory(M) | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1000 |
| Program Status Word(PSW) | 0000 |
| Program Counter(PC) | 0904 |
| Clock Cycle Counter | 17 |
| Instruction Counter | 2 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Memory(M) | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1001 |
| Program Status Word(PSW) | 0000 |
| Program Counter(PC) | 0905 |
| Clock Cycle Counter | 23 |
| Instruction Counter | 3 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Memory(M) | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1001 |
| Program Status Word(PSW) | 0100 |
| Program Counter(PC) | 0906 |
| Clock Cycle Counter | 30 |
| Instruction Counter | 4 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 08 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Memory(M) | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1001 |
| Program Status Word(PSW) | 0110 |
| Program Counter(PC) | 0907 |
| Clock Cycle Counter | 34 |
| Instruction Counter | 5 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 08 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 02 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Memory(M) | F6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1002 |
| Program Status Word(PSW) | 0110 |
| Program Counter(PC) | 0908 |
| Clock Cycle Counter | 40 |
| Instruction Counter | 6 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| 0904 | | INX H | 23 | 1 | 1 | 6 |
| 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| 0906 | | DCR C | 0D | 1 | 1 | 4 |
| 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| 0908 | | CMP M | BE | 1 | 2 | 7 |
| 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 08 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 02 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Memory(M) | F6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1002 |
| Program Status Word(PSW) | 0101 |
| Program Counter(PC) | 0909 |
| Clock Cycle Counter | 47 |
| Instruction Counter | 7 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| 0904 | | INX H | 23 | 1 | 1 | 6 |
| 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| 0906 | | DCR C | 0D | 1 | 1 | 4 |
| 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| 0908 | | CMP M | BE | 1 | 2 | 7 |
| 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 08 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 02 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Memory(M) | F6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1002 |
| Program Status Word(PSW) | 0101 |
| Program Counter(PC) | 090C |
| Clock Cycle Counter | 54 |
| Instruction Counter | 8 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | F6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 08 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 02 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Memory(M) | F6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Register | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Register | 01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1002 |
| Program Status Word(PSW) | F601 |
| Program Counter(PC) | 090D |
| Clock Cycle Counter | 61 |
| Instruction Counter | 9 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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8085 Simulator - E:\Personal\CodeWithVnj\MPI_Program\Experiment-10Q2.asm

File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | F6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 07 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 02 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Memory(M) | F6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Register | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Register | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1002 |
| Program Status Word(PSW) | F611 |
| Program Counter(PC) | 090E |
| Clock Cycle Counter | 65 |
| Instruction Counter | 10 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers Memory Devices

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | F6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 07 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 02 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Memory(M) | F6 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1002 |
| Program Status Word(PSW) | F611 |
| Program Counter(PC) | 0907 |
| Clock Cycle Counter | 75 |
| Instruction Counter | 11 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Now the loop will run Until our Zero flag set to 1. And then it will finally store the Accumulator value to 2000.

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File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward Stop Forward

Registers Memory Devices

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | FD | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Memory(M) | F3 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |

| Resister | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Resister | 54 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1009 |
| Program Status Word(PSW) | FD54 |
| Program Counter(PC) | 090E |
| Clock Cycle Counter | 328 |
| Instruction Counter | 46 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor

Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward

Stop

Forward

Created by : Jubin Mitra

Registers

Memory

Devices

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | FD | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Memory(M) | F3 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |

| Register | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Register | 54 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1009 |
| Program Status Word(PSW) | FD54 |
| Program Counter(PC) | 0914 |
| Clock Cycle Counter | 348 |
| Instruction Counter | 48 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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File Edit Tools Settings Simulation Subroutine View Load Sample Program Help

Editor

Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|------------|---------|-------|----------|----------|
| ✓ 0900 | | LXI H,1000 | 21 | 3 | 3 | 10 |
| 0901 | | | 00 | | | |
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |

Simulate

Start From → 0900

Backward

Stop

Forward

Created by : Jubin Mitra

Registers

Memory

Devices

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | FD | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Register L | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Memory(M) | F3 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |

| Register | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Register | 54 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1009 |
| Program Status Word(PSW) | FD54 |
| Program Counter(PC) | 0911 |
| Clock Cycle Counter | 335 |
| Instruction Counter | 47 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|-----------|---------|-------|----------|----------|
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |
| 0913 | | | 20 | | | |
| ✓ 0914 | | HLT | 76 | 1 | 2 | 5 |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Registers :

| Register | Value | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------------|-------|---|---|---|---|---|---|---|---|
| Accumulator | FD | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| Register B | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register C | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register D | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register E | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Register H | 10 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Register L | 09 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Memory(M) | F3 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |

| Register | Value | S | Z | * | AC | * | P | * | CY |
|---------------|-------|---|---|---|----|---|---|---|----|
| Flag Register | 54 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |

| Type | Value |
|--------------------------|-------|
| Stack Pointer(SP) | 0000 |
| Memory Pointer (HL) | 1009 |
| Program Status Word(PSW) | FD54 |
| Program Counter(PC) | 0914 |
| Clock Cycle Counter | 353 |
| Instruction Counter | 49 |

| SOD | SID | INTR | TRAP | R7.5 | R6.5 | R5.5 |
|-----|-----|------|------|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For SIM instruction

| SOD | SDE | * | R7.5 | MSE | M7.5 | M6.5 | M5.5 |
|-----|-----|---|------|-----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

For RIM instruction

| SID | I7.5 | I6.5 | I5.5 | IE | M7.5 | M6.5 | M5.5 |
|-----|------|------|------|----|------|------|------|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No. Converter Tool :

| Hexadecimal | Decimal | Binary |
|-------------|---------|--------|
| 0 | | 0 |

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Editor Assembler

Assembler

| * Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|-----------|-------|-----------|---------|-------|----------|----------|
| 0902 | | | 10 | | | |
| ✓ 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| 090A | | | 0D | | | |
| 090B | | | 09 | | | |
| ✓ 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| 090F | | | 07 | | | |
| 0910 | | | 09 | | | |
| ✓ 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| 0912 | | | 00 | | | |
| 0913 | | | 20 | | | |
| ✓ 0914 | | HLT | 76 | 1 | 2 | 5 |

Simulate

Start From → 0900

Backward Stop Forward

Registers **Memory** **Devices**

Memory Editor

Memory Range: 0000 ---- FFFF

| Memory Address | Value |
|----------------|-------|
| 090F | 07 |
| 0910 | 09 |
| 0911 | 32 |
| 0913 | 20 |
| 0914 | 76 |
| 1000 | 09 |
| 1001 | 01 |
| 1002 | F6 |
| 1003 | D0 |
| 1004 | 2D |
| 1005 | 02 |
| 1006 | F0 |
| 1007 | FD |
| 1008 | A2 |
| 1009 | F3 |
| 2000 | FD |

☐ Show entire memory content
☒ Show only loaded memory location
☐ Store directly to specified memory location

Created by : Jubin Mitra

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Editor Assembler

Assembler

| * | Address | Label | Mnemonics | Hexcode | Bytes | M-Cycles | T-States |
|---|---------|-------|-----------|---------|-------|----------|----------|
| | 0902 | | | 10 | | | |
| ✓ | 0903 | | MOV C,M | 4E | 1 | 2 | 7 |
| ✓ | 0904 | | INX H | 23 | 1 | 1 | 6 |
| ✓ | 0905 | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ | 0906 | | DCR C | 0D | 1 | 1 | 4 |
| ✓ | 0907 | LOOP | INX H | 23 | 1 | 1 | 6 |
| ✓ | 0908 | | CMP M | BE | 1 | 2 | 7 |
| ✓ | 0909 | | JNC LABEL | D2 | 3 | 3 | 10 |
| | 090A | | | 0D | | | |
| | 090B | | | 09 | | | |
| ✓ | 090C | | MOV A,M | 7E | 1 | 2 | 7 |
| ✓ | 090D | LABEL | DCR C | 0D | 1 | 1 | 4 |
| ✓ | 090E | | JNZ LOOP | C2 | 3 | 3 | 10 |
| | 090F | | | 07 | | | |
| | 0910 | | | 09 | | | |
| ✓ | 0911 | | STA 2000 | 32 | 3 | 4 | 13 |
| | 0912 | | | 00 | | | |
| | 0913 | | | 20 | | | |
| ✓ | 0914 | | HLT | 76 | 1 | 2 | 5 |

Simulate

Start From → 0900

Run all At a Time Step By Step

Registers Memory Devices

Memory Editor

Memory Range: 0000 ---- FFFF

| Memory Address | Value |
|----------------|-------|
| 0900 | 21 |
| 0902 | 10 |
| 0903 | 4E |
| 0904 | 23 |
| 0905 | 7E |
| 0906 | 0D |
| 0907 | 23 |
| 0908 | BE |
| 0909 | D2 |
| 090A | 0D |
| 090B | 09 |
| 090C | 7E |
| 090D | 0D |
| 090E | C2 |
| 090F | 07 |
| 0910 | 09 |
| 0911 | 32 |
| 0913 | 20 |
| 0914 | 76 |
| 1000 | 09 |
| 1001 | 01 |
| 1002 | F6 |
| 1003 | D0 |
| 1004 | 2D |
| 1005 | 02 |
| 1006 | F0 |
| 1007 | FD |
| 1008 | A2 |
| 1009 | F3 |
| 2000 | FD |

☐ Show entire memory content
☒ Show only loaded memory location
☐ Store directly to specified memory location

Created by : Jubin Mitra

Learning outcomes (What I have learnt):

1. Learnt to find larger number in a given Array.
2. Learnt to find smaller number in a given Array.
3. Learnt to use the Nested Looping statement in the single program.
4. Learnt to use the JC, JNC & JNZ instruction.



Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

| Sr. No. | Parameters | Marks Obtained | Maximum Marks |
|---------|------------|----------------|---------------|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |