U19CS076 MIT ASSIGNMENT 7

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Q1. A string of readings is stored in memory, locations starting at 2070H, and the end of the

string is indicated by the byte 0DH. Write a program to check each byte in the string, and the save the bytes in the range of 30H to 39H (both inclusive) in memory locations starting from 2090H.

LXI H,2070H ;input array

LXI D,2090H ;destination array

MVI C,0DH ;breakpoint

loop: MOV A,M

CMP C

JZ END ;if data=0Dh =13 dec

INX H

CPI 2FH

JZ loop

JC loop

CPI 3AH

JNC loop

STAX D

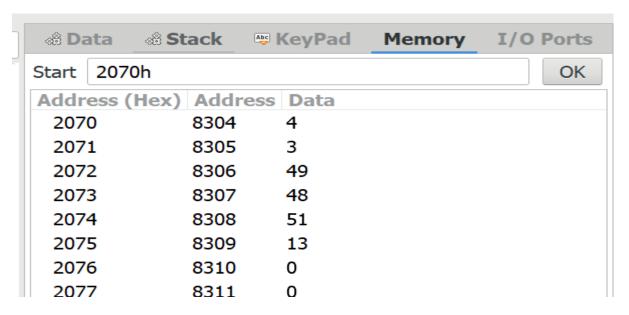
INX D

JMP loop

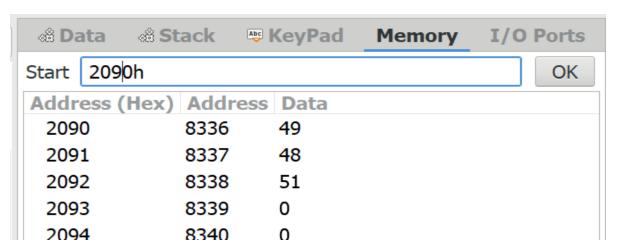
END: HLT

BEFORE EXECUTION

Input array till 13 decimal(ODH is found)



AFTER EXECUTION





Q2. A set of ten bytes is stored in memory starting with the address 2050H.Write a program to check each byte, and save the bytes that are higher than 60 (dec) and lower than 100 (dec) in memory locations starting from 2060H.

lxi h,2050h

lxi d,2060h

mvi b,10h ;count of 10

mvi a,00h

loop: mov a,m

mvi c,3ch ;3c hex=60 dec

cmp c

jc skip ;skip if num<60

mov a,m

mvi c,64h ;64 hex=100 dec

cmp c

jnc skip ;skip if num>100

mov a,m

stax d

skip: inx h

inx d

dcr b

jnz loop

hlt

BEFORE EXECUTION

| & Data | & Stack | № KeyPad | Memory | I/O Ports |
|-----------|------------|-----------------|--------|-----------|
| Start 205 | 0h | | | OK |
| Address (| (Hex) Addr | ess Data | | |
| 2050 | 8272 | 44 | | |
| 2051 | 8273 | 77 | | |
| 2052 | 8274 | 88 | | |
| 2053 | 8275 | 87 | | |
| 2054 | 8276 | 56 | | |
| 2055 | 8277 | 77 | | |
| 2056 | 8278 | 76 | | |
| 2057 | 8279 | 66 | | |
| 2058 | 8280 | 56 | | |
| 2059 | 8281 | 76 | | |
| 205A | 8282 | 5 | | |
| 205B | 8283 | 0 | | |

AFTER EXECUTION

| ∞ Da | ıta & St | ack 💩 I | KeyPad | Memo | Flag | |
|-------|-----------|---------|--------|------|------|--|
| Start | 2060h | | | | | |
| Addr | ess (Hex) | Address | Data | | 5 0 | |
| 2060 | 0 | 8288 | 0 | | | |
| 206 | 1 | 8289 | 77 | | 7 4 | |
| 206 | 2 | 8290 | 88 | | Z 1 | |
| 2063 | 3 | 8291 | 87 | | | |
| 206 | 4 | 8292 | 0 | | AC 0 | |
| 206 | 5 | 8293 | 77 | | 70 | |
| 206 | 5 | 8294 | 76 | | | |
| 206 | 7 | 8295 | 66 | | P 1 | |
| 206 | 8 | 8296 | 0 | | | |
| 2069 | 9 | 8297 | 76 | | | |
| 206 | Д | 8298 | 0 | | C 1 | |
| 206 | В | 8299 | 0 | | | |

Q3. Data bytes are stored in memory locations from 2050H to 205FH.To insert an additional five

bytes of data, It is necessary to shift the data string by five memory locations. Write a program to store the data string from 2055H to 2064H. Use any sixteen bytes of data to verify your program.

lxi h,205fh

lxi d,2064h

mvi b,16h

loop: mov a,m

stax d

dcx h

dcx d

dcr b

jnz loop

hlt

BEFORE EXECUTION

INPUT STORED FROM 2050H TO 205FH

| - | tack 🦊 | KeyPad | Memory | I/O Ports |
|---------------|---------|--------|--------|-----------|
| Start 2050h | | | | OK |
| Address (Hex) | Address | Data | | |
| 2050 | 8272 | 12 | | |
| 2051 | 8273 | 121 | | |
| 2052 | 8274 | 2 | | |
| 2053 | 8275 | 3 | | |
| 2054 | 8276 | 4 | | |
| 2055 | 8277 | 2 | | |
| 2056 | 8278 | 0 | | |
| 2057 | 8279 | 4 | | |
| 2058 | 8280 | 23 | | |
| 2059 | 8281 | 6 | | |
| 205A | 8282 | 55 | | |
| 205B | 8283 | 8 | | |
| | | | | ' |
| 205C | 8284 | 34 | | |
| 205D | 8285 | 3 | | |
| 205E | 8286 | 0 | | |
| 205F | 8287 | 55 | | |
| 2060 | 8288 | 0 | | |

AFTER EXECUTION

| | oâ Da | ata ⊗åSt | ack 💩 l | KeyPad | Memory | |
|---|-------|-----------|---------|--------|--------|------------|
| ľ | Start | 2050h | | | | Flag |
| | Addr | ess (Hex) | Address | Data | | <i>S</i> 0 |
| | 205 | 0 | 8272 | 0 | | |
| | 205 | 1 | 8273 | 0 | | 7 4 |
| | 205 | 2 | 8274 | 0 | | Z 1 |
| | 205 | 3 | 8275 | 0 | | |
| | 205 | 4 | 8276 | 0 | | AC 0 |
| | 205 | 5 | 8277 | 12 | | |
| | 205 | 6 | 8278 | 121 | | 0.4 |
| | 205 | 7 | 8279 | 2 | | P 1 |
| | 205 | 8 | 8280 | 3 | | |
| | 205 | 9 | 8281 | 4 | | C 0 |
| | 205 | Α | 8282 | 2 | | |
| | 205 | В | 8283 | 0 | | udia u |
| | 205 | SC . | 8284 | 4 | | |
| | 205 | | 8285 | 23 | | |
| | 205 | SE . | 8286 | 6 | | |
| | 205 | | 8287 | 55 | | |
| | 206 | 50 | 8288 | 8 | | |

| 205E | 8286 | 6 | |
|------|------|----|--|
| 205F | 8287 | 55 | |
| 2060 | 8288 | 8 | |
| 2061 | 8289 | 34 | |
| 2062 | 8290 | 3 | |
| 2063 | 8291 | 0 | |
| 2064 | 8292 | 55 | |
| 2065 | 8293 | 0 | |
| 2066 | 8294 | 0 | |
| 2067 | 8295 | 0 | |
| | | | |