|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| תרגיל 1 | | CX | | BX | | AX | | Flag | | מצב הזיכרון | |
| CH | CL | BH | Bl | AH | AL | ZF | CF | Address | נתון |
|  | MOV BX,1000H |  |  | 10H | 00H |  |  | - | - | 1000H | 1FH |
|  | MOV CX,5 |  | 05d |  |  |  |  | - | - | 1001H | 20H |
|  | MOV AL,0 |  |  |  |  |  | 00d | - | - | 1002H | 01H |
| סיבוב  1 | AGAIN: ADD AL,[BX] |  |  |  |  |  | 1FH | 0 | 0 | 1003H | 00H |
| INC BX |  |  | 10H | 01H |  |  | 0 | - | 1004H | 3AH |
| DEC CX |  | 04d |  |  |  |  | 0 | - | 1005H | 40H |
| JNZ AGAIN | דגל שווה ל -0 | | | | | | | | | |
| סיבוב 2 | AGAIN: ADD AL,[BX] |  |  |  |  |  | 3FH | 0 | 0 | 1006H | 3AH |
| INC BX |  |  | 10H | 02H |  |  | 0 | - | 1007H | 2DH |
| DEC CX |  | 03d |  |  |  |  | 0 | - |  |  |
| JNZ AGAIN | דגל שווה ל -0 | | | | | | | | | |
| סיבוב 3 | AGAIN: ADD AL,[BX] |  |  |  |  | 40H |  | 0 | 0 |  |  |
| INC BX |  |  | 10H | 03H |  |  | 0 | - |  |  |
| DEC CX |  | 02d |  |  |  |  | 0 | - |  |  |
| JNZ AGAIN | דגל שווה ל -0 | | | | | | | | | |
| סיבוב 4 | AGAIN: ADD AL,[BX] |  |  |  |  | 40H |  | 0 | 0 |  |  |
| INC BX |  |  | 10H | 04H |  |  | 0 | - |  |  |
| DEC CX |  | 01d |  |  |  |  | 0 | - |  |  |
| JNZ AGAIN | דגל שווה ל -0 | | | | | | | | | |
| סיבוב 5 | AGAIN: ADD AL,[BX] |  |  |  |  | 7AH |  | 0 | 0 |  |  |
| INC BX |  |  | 10H | 05H |  |  | 0 | - |  |  |
| DEC CX |  | 00d |  |  |  |  | 1 | - |  |  |
| JNZ AGAIN | דגל שווה ל -1 | | | | | | | | | |
|  | MOV [BX],AL |  |  |  |  |  |  |  |  |  |  |

מצב זיכרון קודם

מצב זיכרון נתון

מצב זיכרון נתון

מצב זיכרון קודם

|  |  |
| --- | --- |
| כתובות | נתון |
| 1000H | 1FH |
| 1001H | 20H |
| 1002H | 01H |
| 1003H | 00H |
| 1004H | 3AH |
| 1005H | 40H |

|  |  |
| --- | --- |
| כתובות | נתון |
| 1000H | 1FH |
| 1001H | 20H |
| 1002H | 01H |
| 1003H | 00H |
| 1004H | 3AH |
| 1005H | 7AH |

התוכנית סכמת את נתוני הזיכרון מכתובת 1000H עד כתובת 1004H

בעזרת לולאה בעלת 5 סיבובים.

ומציבה את התוצאה בכתובת 1005H

UNMHCV T, V,UMTV CF,UC, 1005h

MOV BX,1000H

MOV CX,5

MOV AL,0

AGAIN: ADD AL,[BX]

INC BX

DEC CX

JNZ AGAIN

MOV [BX],AL

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| תרגיל 2 | | CX | |  | | AX | | Flag | | מצב הזיכרון | |  |  |
| CH | CL | SI | DI | AH | AL | ZF | CF | Address | נתון |  |  |
|  | MOV CX,20H |  | 20H |  |  |  |  | - | - | 100H | 01H | 100H | 01H |
|  | MOV SI,100H |  |  | 100H |  |  |  | - | - | 101H | 02H | FFH | 02H |
|  | MOV DI,100H |  |  |  | 100H |  |  | - | - | 102H | 03H | FEH | 03H |
| סיבוב  1 | NEXT: MOV AL,[SI] |  |  |  |  |  | 01H | - | - | 103H | 04H | FDH | 04H |
| MOV [DI],AL |  |  |  |  |  |  | - | - | 104H | 05H | FCH | 05H |
| INC SI |  |  | 101H |  |  |  | 0 | - | 105H | 06H | FBH | 06H |
| DEC DI |  |  |  | FFH |  |  | 0 | - | 106H | 07H | FAH | 07H |
| DEC CX |  | 1FH |  |  |  |  | 0 | - | 107H | 08H |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | | 108H | 09H |  |  |
| סיבוב  2 | NEXT: MOV AL,[SI] |  |  |  |  |  | 02H | - | - | 109H | 01H |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - | 10AH | 02H |  |  |
| INC SI |  |  | 102H |  |  |  | 0 |  | 10BH | 03H |  |  |
| DEC DI |  |  |  | FEH |  |  | 0 |  | 10CH | 04H |  |  |
| DEC CX |  | 1EH |  |  |  |  | 0 |  | 10DH | 05H |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | | 10EH | 06H |  |  |
| סיבוב  3 | NEXT: MOV AL,[SI] |  |  |  |  |  | 03H | - | - | 10FH | 07H |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - | 110H | 08H |  |  |
| INC SI |  |  | 103H |  |  |  | 0 |  | 111H | 09H |  |  |
| DEC DI |  |  |  | FDH |  |  | 0 |  | 112H | 01H |  |  |
| DEC CX |  | 1DH |  |  |  |  | 0 |  | 113H | 02H |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | | 114H | 03H |  |  |
| סיבוב  4 | NEXT: MOV AL,[SI] |  |  |  |  |  | 04H | - | - | 115H | 04H |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - | 116H | 05H |  |  |
| INC SI |  |  | 104H |  |  |  | 0 |  | 117H | 06H |  |  |
| DEC DI |  |  |  | FCH |  |  | 0 |  | 118H | 07H |  |  |
| DEC CX |  | 1CH |  |  |  |  | 0 |  | 119H | 08H |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | | 11AH | 09H |  |  |
| סיבוב  5 | NEXT: MOV AL,[SI] |  |  |  |  |  | 05H | - | - | 11BH | 01H |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - | 11CH | 02H |  |  |
| INC SI |  |  | 105H |  |  |  | 0 |  | 11DH | 03H |  |  |
| DEC DI |  |  |  | FBH |  |  | 0 |  | 11EH | 04H |  |  |
| DEC CX |  | 1BH |  |  |  |  | 0 |  | 11FH | 05H |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | | 120H | 06H |  |  |
| סיבוב  6 | NEXT: MOV AL,[SI] |  |  |  |  |  | 06H | - | - |  |  |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  |  |  |
| INC SI |  |  | 106H |  |  |  | 0 |  |  |  |  |  |
| DEC DI |  |  |  | FAH |  |  | 0 |  |  |  |  |  |
| DEC CX |  | 1AH |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |
| סיבוב  7 | NEXT: MOV AL,[SI] |  |  |  |  |  | 07H | - | - |  |  |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  |  |  |
| INC SI |  |  | 107H |  |  |  | 0 |  |  |  |  |  |
| DEC DI |  |  |  | EFH |  |  | 0 |  |  |  |  |  |
| DEC CX |  | 19H |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |
| סיבוב  8 | NEXT: MOV AL,[SI] |  |  |  |  |  | 08H | - | - |  |  | EFH | 08H |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  | EEH | 09H |
| INC SI |  |  | 108H |  |  |  | 0 |  |  |  | EDH | 01H |
| DEC DI |  |  |  | EEH |  |  | 0 |  |  |  | ECH | 02H |
| DEC CX |  | 18H |  |  |  |  | 0 |  |  |  | EBH | 03H |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  | EAH | 04H |
| סיבוב  9 | NEXT: MOV AL,[SI] |  |  |  |  |  | 09H | - | - |  |  | E9H | 05H |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  | E8H | 06H |
| INC SI |  |  | 109H |  |  |  | 0 |  |  |  | E7H | 07H |
| DEC DI |  |  |  | EDH |  |  | 0 |  |  |  | E6H | 08H |
| DEC CX |  |  |  |  |  |  | 0 |  |  |  | E5H | 09H |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |
| סיבוב  10 | NEXT: MOV AL,[SI] |  |  |  |  |  | 01H | - | - |  |  |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  |  |  |
| INC SI |  |  | 10AH |  |  |  | 0 |  |  |  |  |  |
| DEC DI |  |  |  | ECH |  |  | 0 |  |  |  |  |  |
| DEC CX |  | 17H |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |
| סיבוב  11 | NEXT: MOV AL,[SI] |  |  |  |  |  | 02H | - | - |  |  |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  |  |  |
| INC SI |  |  | 10BH |  |  |  | 0 |  |  |  |  |  |
| DEC DI |  |  |  | EBH |  |  | 0 |  |  |  |  |  |
| DEC CX |  | 16H |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |
| סיבוב  12 | NEXT: MOV AL,[SI] |  |  |  |  |  | 03H | - | - |  |  |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  |  |  |
| INC SI |  |  | 10CH |  |  |  | 0 |  |  |  |  |  |
| DEC DI |  |  |  | EAH |  |  | 0 |  |  |  |  |  |
| DEC CX |  | 15H |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |
| סיבוב  13 | NEXT: MOV AL,[SI] |  |  |  |  |  | 04H | - | - |  |  |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  |  |  |
| INC SI |  |  | 10DH |  |  |  | 0 |  |  |  |  |  |
| DEC DI |  |  |  | E9H |  |  | 0 |  |  |  |  |  |
| DEC CX |  | 14H |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |
| סיבוב  14 | NEXT: MOV AL,[SI] |  |  |  |  |  | 05H | - | - |  |  |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  |  |  |
| INC SI |  |  | 10EH |  |  |  | 0 |  |  |  |  |  |
| DEC DI |  |  |  | E8H |  |  | 0 |  |  |  |  |  |
| DEC CX |  | 13H |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |
| סיבוב  15 | NEXT: MOV AL,[SI] |  |  |  |  |  | 06H | - | - |  |  |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  |  |  |
| INC SI |  |  | 10FH |  |  |  | 0 |  |  |  |  |  |
| DEC DI |  |  |  | E7H |  |  | 0 |  |  |  |  |  |
| DEC CX |  | 12H |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Value | Address | התוכנית מבצעת העתקה של הנתונים מהכתובת העוקבות H100 ועד H120 כ32 סיבובים לתוך הכותבות העוקבות מ H100 ועד E0H . | Value | Address |
| 01H | 100H | 01H | 100H |
| 02H | 101H | 02H | FFH |
| 03H | 102H | 03H | FEH |
| 04H | 103H | 04H | FDH |
| 05H | 104H | 05H | FCH |
| 06H | 105H | 06H | FBH |
| 07H | 106H | 07H | FAH |
| 08H | 107H | 08H | F9H |
| 09H | 108H | 09H | F8H |
| 01H | 109H | 01H | F7H |
| 02H | 10AH | 02H | F6H |
| 03H | 10BH | 03H | F5H |
| 04H | 10CH | 04H | F4H |
| 05H | 10DH | 05H | F3H |
| 06H | 10EH | 06H | F2H |
| 07H | 10FH | 07H | F1H |
| 08H | 110H | 08H | F0H |
| 09H | 111H | 09H | EFH |
| 01H | 112H | 01H | EEH |
| 02H | 113H | 02H | EDH |
| 03H | 114H | 03H | ECH |
| 04H | 115H | 04H | EBH |
| 05H | 116H | 05H | EAH |
| 06H | 117H | 06H | E9H |
| 07H | 118H | 07H | E8H |
| 08H | 119H | 08H | E7H |
| 09H | 11AH | 09H | E6H |
| 01H | 11BH | 01H | E5H |
| 02H | 11CH | 02H | E4H |
| 03H | 11DH | 03H | E3H |
| 04H | 11EH | 04H | E2H |
| 05H | 11FH | 05H | E1H |
| 06H | 120H |  |  | E0H |

זיכרון לאחר ריצת התוכנית

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| תרגיל 3 | | CX | |  | | AX | | Flag | | מצב הזיכרון | |  |  |
| CH | CL | SI | DI | AH | AL | ZF | CF | Address | נתון |  |  |
|  | MOV CX,20H |  | 20H |  |  |  |  | - | - | 100H | 01H | 01H | 200H |
|  | MOV SI,100H |  |  | 100H |  |  |  | - | - | 101H | 02H | 02H | 201H |
|  | MOV DI,200H |  |  |  | 200H |  |  | - | - | 102H | 03H | 03H | 202H |
| סיבוב  1 | NEXT: MOV AL,[SI] |  |  |  |  |  | 01H | - | - | 103H | 04H | 04H | 203H |
| MOV [DI],AL |  |  |  |  |  |  | - | - | 104H | 05H | 05H | 204H |
| INC SI |  |  | 101H |  |  |  | 0 | - | 105H | 06H | 06H | 205H |
| INC DI |  |  |  | 201H |  |  | 0 | - | 106H | 07H | 07H | 206H |
| DEC CX |  | 1FH |  |  |  |  | 0 | - | 107H | 08H |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | | 108H | 09H |  |  |
| סיבוב  2 | NEXT: MOV AL,[SI] |  |  |  |  |  | 02H | - | - | 109H | 01H |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - | 10AH | 02H |  |  |
| INC SI |  |  | 102H |  |  |  | 0 |  | 10BH | 03H |  |  |
| INC DI |  |  |  | 202H |  |  | 0 |  | 10CH | 04H |  |  |
| DEC CX |  | 1EH |  |  |  |  | 0 |  | 10DH | 05H |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | | 10EH | 06H |  |  |
| סיבוב  3 | NEXT: MOV AL,[SI] |  |  |  |  |  | 03H | - | - | 10FH | 07H |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - | 110H | 08H |  |  |
| INC SI |  |  | 103H |  |  |  | 0 |  | 111H | 09H |  |  |
| INC DI |  |  |  | 203H |  |  | 0 |  | 112H | 01H |  |  |
| DEC CX |  | 1DH |  |  |  |  | 0 |  | 113H | 02H |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | | 114H | 03H |  |  |
| סיבוב  4 | NEXT: MOV AL,[SI] |  |  |  |  |  | 04H | - | - | 115H | 04H |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - | 116H | 05H |  |  |
| INC SI |  |  | 104H |  |  |  | 0 |  | 117H | 06H |  |  |
| INC DI |  |  |  | 204H |  |  | 0 |  | 118H | 07H |  |  |
| DEC CX |  | 1CH |  |  |  |  | 0 |  | 119H | 08H |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | | 11AH | 09H |  |  |
| סיבוב  5 | NEXT: MOV AL,[SI] |  |  |  |  |  | 05H | - | - | 11BH | 01H |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - | 11CH | 02H |  |  |
| INC SI |  |  | 105H |  |  |  | 0 |  | 11DH | 03H |  |  |
| INC DI |  |  |  | 205H |  |  | 0 |  | 11EH | 04H |  |  |
| DEC CX |  | 1BH |  |  |  |  | 0 |  | 11FH | 05H |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | | 120H | 06H |  |  |
| סיבוב  6 | NEXT: MOV AL,[SI] |  |  |  |  |  | 06H | - | - |  |  |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  |  |  |
| INC SI |  |  | 106H |  |  |  | 0 |  |  |  |  |  |
| INC DI |  |  |  | 206H |  |  | 0 |  |  |  |  |  |
| DEC CX |  | 1AH |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |
| סיבוב  7 | NEXT: MOV AL,[SI] |  |  |  |  |  | 07H | - | - |  |  |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  |  |  |
| INC SI |  |  | 107H |  |  |  | 0 |  |  |  |  |  |
| INC DI |  |  |  | 207H |  |  | 0 |  |  |  |  |  |
| DEC CX |  | 19H |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |
| סיבוב  8 | NEXT: MOV AL,[SI] |  |  |  |  |  | 08H | - | - |  |  | 08H | 207H |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  | 09H | 208H |
| INC SI |  |  | 108H |  |  |  | 0 |  |  |  | 01H | 209H |
| INC DI |  |  |  | 208H |  |  | 0 |  |  |  | 02H | 20AH |
| DEC CX |  | 18H |  |  |  |  | 0 |  |  |  | 03H | 20BH |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  | EAH | 04H |
| סיבוב  9 | NEXT: MOV AL,[SI] |  |  |  |  |  | 09H | - | - |  |  | 05H | 20DH |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  | 06H | 20EH |
| INC SI |  |  | 109H |  |  |  | 0 |  |  |  |  |  |
| INC DI |  |  |  | 209H |  |  | 0 |  |  |  |  |  |
| DEC CX |  |  |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |
| סיבוב  10 | NEXT: MOV AL,[SI] |  |  |  |  |  | 01H | - | - |  |  |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  |  |  |
| INC SI |  |  | 10AH |  |  |  | 0 |  |  |  |  |  |
| INC DI |  |  |  | 20AH |  |  | 0 |  |  |  |  |  |
| DEC CX |  | 17H |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |
| סיבוב  11 | NEXT: MOV AL,[SI] |  |  |  |  |  | 02H | - | - |  |  |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  |  |  |
| INC SI |  |  | 10BH |  |  |  | 0 |  |  |  |  |  |
| DEC DI |  |  |  | 20BH |  |  | 0 |  |  |  |  |  |
| DEC CX |  | 16H |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |
| סיבוב  12 | NEXT: MOV AL,[SI] |  |  |  |  |  | 03H | - | - |  |  |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  |  |  |
| INC SI |  |  | 10CH |  |  |  | 0 |  |  |  |  |  |
| INC DI |  |  |  | 20CH |  |  | 0 |  |  |  |  |  |
| DEC CX |  | 15H |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |
| סיבוב  13 | NEXT: MOV AL,[SI] |  |  |  |  |  | 04H | - | - |  |  |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  |  |  |
| INC SI |  |  | 10DH |  |  |  | 0 |  |  |  |  |  |
| INC DI |  |  |  | 20DH |  |  | 0 |  |  |  |  |  |
| DEC CX |  | 14H |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |
| סיבוב  14 | NEXT: MOV AL,[SI] |  |  |  |  |  | 05H | - | - |  |  |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  |  |  |
| INC SI |  |  | 10EH |  |  |  | 0 |  |  |  |  |  |
| INC DI |  |  |  | 20EH |  |  | 0 |  |  |  |  |  |
| DEC CX |  | 13H |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |
| סיבוב  15 | NEXT: MOV AL,[SI] |  |  |  |  |  | 06H | - | - |  |  |  |  |
| MOV [DI],AL |  |  |  |  |  |  | - | - |  |  |  |  |
| INC SI |  |  | 10FH |  |  |  | 0 |  |  |  |  |  |
| INC DI |  |  |  | 20FH |  |  | 0 |  |  |  |  |  |
| DEC CX |  | 12H |  |  |  |  | 0 |  |  |  |  |  |
| JNZ NEXT | דגל לא שונה מ-1 | | | | | | | |  |  |  |  |

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| Value | Address | התוכנית מבצעת העתקה של הנתונים מהכתובת העוקבות H100 ועד H120 כ32 סיבובים לתוך הכותבות העוקבות מ 200H ועד 220H . | Value | Address |
| 01H | 100H | 01H | 200H |
| 02H | 101H | 02H | 201H |
| 03H | 102H | 03H | 202H |
| 04H | 103H | 04H | 203H |
| 05H | 104H | 05H | 204H |
| 06H | 105H | 06H | 205H |
| 07H | 106H | 07H | 206H |
| 08H | 107H | 08H | 207H |
| 09H | 108H | 09H | 208H |
| 01H | 109H | 01H | 209H |
| 02H | 10AH | 02H | 20AH |
| 03H | 10BH | 03H | 20BH |
| 04H | 10CH | 04H | 20CH |
| 05H | 10DH | 05H | 20DH |
| 06H | 10EH | 06H | 20EH |
| 07H | 10FH | 07H | 20FH |
| 08H | 110H | 08H | 210H |
| 09H | 111H | 09H | 211H |
| 01H | 112H | 01H | 212H |
| 02H | 113H | 02H | 213H |
| 03H | 114H | 03H | 214H |
| 04H | 115H | 04H | 215H |
| 05H | 116H | 05H | 216H |
| 06H | 117H | 06H | 217H |
| 07H | 118H | 07H | 218H |
| 08H | 119H | 08H | 219H |
| 09H | 11AH | 09H | 21AH |
| 01H | 11BH | 01H | 21BH |
| 02H | 11CH | 02H | 21CH |
| 03H | 11DH | 03H | 21DH |
| 04H | 11EH | 04H | 21EH |
| 05H | 11FH | 05H | 21FH |
| 06H | 120H |  |  | 220H |

זיכרון לאחר ריצת התוכנית

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| תרגיל 4 | | BX | |  | | AX | | Flag | | מצב הזיכרון | |  |  |
| BH | BL | SI | CL | AH | AL | ZF | CF | Address | נתון |  |  |
|  | MOV BX,20H |  | 20H |  |  |  |  |  |  | 20H | 55H |  |  |
|  | MOV SI,20H |  |  | 20H |  |  |  |  |  |  |  |  |  |
|  | MOV CX,10H |  |  |  | 10H |  |  |  |  | [20H+20H] | 55H |  |  |
| סיבוב  1 | MB: MOV AL,[SI] |  |  |  |  |  | 55H |  |  | [20H+21H] | 55H |  |  |
| MOV [BX+SI],AL |  |  |  |  |  |  |  |  | [20H+22H] | 55H |  |  |
| INC BX |  | 21H |  |  |  |  |  |  | [20H+23H] | 55H |  |  |
| DEC CX |  |  |  | 0FH |  |  |  |  | [20H+24H] | 55H |  |  |
| JNZ MB | דגל שונה מ -1 | | | | | | | | [20H+25H] | 55H |  |  |
| סיבוב  2 | MB: MOV AL,[SI] |  |  |  |  |  | 55H |  |  | [20H+26H] | 55H |  |  |
| MOV [BX+SI],AL |  |  |  |  |  |  |  |  | [20H+27H] | 55H |  |  |
| INC BX |  | 22H |  |  |  |  |  |  |  |  |  |  |
| DEC CX |  |  |  | 0EH |  |  |  |  |  |  |  |  |
| JNZ MB | דגל שונה מ -1 | | | | | | | |  |  |  |  |
| סיבוב  3 | MB: MOV AL,[SI] |  |  |  |  |  | 55H |  |  |  |  |  |  |
| MOV [BX+SI],AL |  |  |  |  |  |  |  |  |  |  |  |  |
| INC BX |  | 23H |  |  |  |  |  |  |  |  |  |  |
| DEC CX |  |  |  | 0DH |  |  |  |  |  |  |  |  |
| JNZ MB | דגל שונה מ -1 | | | | | | | |  |  |  |  |
| סיבוב  4 | MB: MOV AL,[SI] |  |  |  |  |  | 55H |  |  |  |  |  |  |
| MOV [BX+SI],AL |  |  |  |  |  |  |  |  |  |  |  |  |
| INC BX |  | 24H |  |  |  |  |  |  |  |  |  |  |
| DEC CX |  |  |  | 0CH |  |  |  |  |  |  |  |  |
| JNZ MB | דגל שונה מ -1 | | | | | | | |  |  |  |  |
| סיבוב  5 | MB: MOV AL,[SI] |  |  |  |  |  | 55H |  |  |  |  |  |  |
| MOV [BX+SI],AL |  |  |  |  |  |  |  |  |  |  |  |  |
| INC BX |  | 25H |  |  |  |  |  |  |  |  |  |  |
| DEC CX |  |  |  | 0BH |  |  |  |  |  |  |  |  |
| JNZ MB | דגל שונה מ -1 | | | | | | | |  |  |  |  |
| סיבוב  6 | MB: MOV AL,[SI] |  |  |  |  |  | 55H |  |  |  |  |  |  |
| MOV [BX+SI],AL |  |  |  |  |  |  |  |  |  |  |  |  |
| INC BX |  | 26H |  |  |  |  |  |  |  |  |  |  |
| DEC CX |  |  |  | 0AH |  |  |  |  |  |  |  |  |
| JNZ MB | דגל שונה מ -1 | | | | | | | |  |  |  |  |
| סיבוב  7 | MB: MOV AL,[SI] |  |  |  |  |  | 55H |  |  |  |  |  |  |
| MOV [BX+SI],AL |  |  |  |  |  |  |  |  |  |  |  |  |
| INC BX |  | 27H |  |  |  |  |  |  |  |  |  |  |
| DEC CX |  |  |  | 09H |  |  |  |  |  |  |  |  |
| JNZ MB | דגל שונה מ -1 | | | | | | | |  |  |  |  |
| סיבוב  8 | MB: MOV AL,[SI] |  |  |  |  |  | 55H |  |  |  |  |  |  |
| MOV [BX+SI],AL |  |  |  |  |  |  |  |  |  |  |  |  |
| INC BX |  | 28H |  |  |  |  |  |  |  |  |  |  |
| DEC CX |  |  |  | 08H |  |  |  |  |  |  |  |  |
| JNZ MB | דגל שונה מ -1 | | | | | | | |  |  |  |  |
| סיבוב  9 | MB: MOV AL,[SI] |  |  |  |  |  | 55H |  |  | [20+28] | 55H |  |  |
| MOV [BX+SI],AL |  |  |  |  |  |  |  |  | [20+29] | 55H |  |  |
| INC BX |  | 29H |  |  |  |  |  |  |  |  |  |  |
| DEC CX |  |  |  | 07H |  |  |  |  |  |  |  |  |
| JNZ MB | דגל שונה מ -1 | | | | | | | |  |  |  |  |
| סיבוב  10 | MB: MOV AL,[SI] |  |  |  |  |  | 55H |  |  |  |  |  |  |
| MOV [BX+SI],AL |  |  |  |  |  |  |  |  |  |  |  |  |
| INC BX |  | 2AH |  |  |  |  |  |  |  |  |  |  |
| DEC CX |  |  |  | 06H |  |  |  |  |  |  |  |  |
| JNZ MB | דגל שונה מ -1 | | | | | | | |  |  |  |  |

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| Value | Address | התוכנית מבצעת העתקה של הנתון מכתובת 20H  לכתובות העוקבות מH40 עד EH4 | Value | Address |
| 55H | 40H | 55H | 20H |
| 55H | 41H |  |  |
| 55H | 42H |  |  |
| 55H | 43H |  |  |
| 55H | 44H |  |  |
| 55H | 45H |  |  |
| 55H | 46H |  |  |
| 55H | 47H |  |  |
| 55H | 48H |  |  |
| 55H | 49H |  |  |
| 55H | 4AH |  |  |
| 55H | 4BH |  |  |
| 55H | 4CH |  |  |
| 55H | 4DH |  |  |
| 55H | 4EH |  |  |