ASSEMBLY CODE

```
;<Micro Project>
;40 CMD (8155_2)
;41 PA (8155_2)
;80 CMD (8155_1)
;81 PA (8155_1)
;82 PB (8155_1)

;Data
sin0 EQU 80h            ;128
sin30 EQU C0h           ;192
sin60 EQU EEh           ;238
sin90 EQU FFh           ;255
sin120 EQU EEh          ;238
sin150 EQU C0h          ;192
sin180 EQU 80h          ;128
sin210 EQU 40h          ;64
sin240 EQU 11h          ;17
sin270 EQU 00h          ;0
sin300 EQU 11h          ;17
sin330 EQU 40h          ;64
sin360 EQU 80h          ;128

squ0 EQU FFh            ;255
squ1 EQU 0h             ;0

swt0 EQU 0h             ;0
swt1 EQU 33h            ;51
swt2 EQU 66h            ;102
swt3 EQU 9Ah            ;154
swt4 EQU CDh            ;205
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swt5 EQU FFh            ;255

KV EQU 0FFFh

;Code
        jmp INIT
        jmp SRV65       ;SRV 6.5
        ORG 100

INIT:   LXI SP,0000
        MVI A,00h
        OUT 81h         ;8155_1 PORT A
        OUT 82h         ;8155_1 PORT B
        MVI A,02
        OUT 80          ;8155_1 CMD
        MVI A,10
        OUT 40         ;8155_2 CMD
         MVI A,00001101
        SIM
        EI

BEGIN:  LDA KV
        CPI 0Ah
        JZ START
        CPI FFh
        JZ STOP

STOP:   MVI A,00h
        OUT 81h         ;8155_1 PORTA
        OUT 82h         ;8155_1 PORTB
        JMP BEGIN
```

```
START:  LDA KV
        CPI 01h
        JZ MODEH
        CPI 02h
        JZ MODEI
        CPI 03h
        JZ MODES
        JMP BEGIN

MODEH:MVI A,01101110        ;7-SEG formatında 'H'
        OUT 82h             ;8155_1 PORTB
H1:     MVI A,squ0
        OUT 81h
        CALL delaySQUARE
        MVI A,squ1
        OUT 81h
        CALL delaySQUARE
        jmp H1

MODEI:MVI A,01100000        ;7-SEG formatında 'I'
        OUT 82h             ;8155_1 PORTB
I1:     MVI A,swt0
        OUT 81h
        CALL delaySawTooth
        MVI A,swt1
        OUT 81h
        CALL delaySawTooth
        MVI A,swt2
        OUT 81h
        CALL delaySawTooth
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        MVI A,swt3
        OUT 81h
        CALL delaySawTooth
        MVI A,swt4
        OUT 81h
        CALL delaySawTooth
        MVI A,swt5
        OUT 81h
        CALL delaySawTooth
        JMP I1

MODES:MVI A,10110110        ;7-SEG formatında 'S'
        OUT 82h             ;8155_1 PORTB
S1:     MVI A,sin0
        OUT 81h
        NOP                 ;delay 4 cycle
        MVI A,sin30
        OUT 81h
        NOP                 ;delay 4 cycle
        MVI A,sin60
        OUT 81h
        NOP                 ;delay 4 cycle
        MVI A,sin90
        OUT 81h
        NOP                 ;delay 4 cycle
        MVI A,sin120
        OUT 81h
        NOP                 ;delay 4 cycle
        MVI A,sin150
        OUT 81h
        NOP                 ;delay 4 cycle
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```
        MVI A,sin180
        OUT 81h
        NOP                 ;delay 4 cycle
        MVI A,sin210
        OUT 81h
        NOP                 ;delay 4 cycle
        MVI A,sin240
        OUT 81h
        NOP                 ;delay 4 cycle
        MVI A,sin270
        OUT 81h
        NOP                 ;delay 4 cycle
        MVI A,sin300
        OUT 81h
        NOP                 ;delay 4 cycle
        MVI A,sin330
        OUT 81h
        NOP                 ;delay 4 cycle
        MVI A,sin360
        OUT 81h
        NOP                 ;delay 4 cycle
        JMP S1

delaySawTooth:MVI C,2
              DCR C
              JNZ delaySawTooth
              RET

delaySQUARE: MVI C,5
             DCR C
             JNZ delaySQUARE
```

```
        RET

SRV65:  PUSH PSW
        IN 41                   ;8155_1 PA (Keypad)
        STA KV
        POP PSW
        EI
        RET
```