

**Name:** Muhammad Maiz Nadeem  
**Reg. ID:** SP21-BCS-052

## Timer Interrupts

### Question:

Take the code of lab 8 part a and hook timer interrupt to it such that the string moves to next column after 1 second.

### Answer:

```
ORG 100h

.DATA

STR1      DB  'MAIZ NADEEM'
SIZE      DW  11
TFLAG     DB  0
COUNT    DB  0

.CODE

MAIN PROC

        MOV BX, 0
        MOV ES, BX

        CLI
        MOV ES:[0x8*4], OFFSET [TISR]
        MOV ES:[0x8*4+2], CS
        STI

        MOV AH, 0
        MOV AL, 3
        INT 10h

        MOV AX, 0xB800
        MOV ES, AX
        MOV SI, (13-5-1)*160 + (40-1)*2
```

```

        MOV CX, SIZE
        MOV AH, 0x07
        XOR BX, BX

NAMEPRINT: MOV AL, [STR1 + BX]
            MOV ES:SI, AX
            ADD SI, 80*2
            INC BX
            LOOP NAMEPRINT

PROCCALL: CMP TFLAG, 1
            JNE SKIP

            MOV TFLAG, 0
            CALL RIGHT

SKIP:      JMP PROCCALL

        RET

MAIN ENDP

TISR:     PUSH AX
            INC COUNT
            CMP COUNT, 18
            JNE EXIT
            MOV TFLAG, 1
            MOV COUNT, 0

EXIT:     MOV AL, 0x020
            OUT 0x20, AL
            POP AX
            IRET

RIGHT PROC

        MOV CX, SIZE

ERASE:    SUB SI, 80*2
            MOV ES:SI, 0X0720
            LOOP ERASE

```

```

        MOV CX, SIZE
        MOV BX, 0
        ADD SI, 2
        CMP SI, 1280
        JGE SHIFTLEFT

NAMEPRINT2: MOV AL, [STR1 + BX]
            MOV ES:SI, AX
            ADD SI, 80*2
            INC BX
            LOOP NAMEPRINT2

        RET

SHIFTLEFT: MOV SI, (13-5-1)*160

NAMEPRINT3: MOV AL, [STR1 + BX]
            MOV ES:SI, AX
            INC BX
            ADD SI, 80*2
            LOOP NAMEPRINT3

        RET
RIGHT ENDP

```