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# 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 |