

National University of Computer and Emerging Sciences



Lab Manual 07 Computer Organization and Assembly Language Lab

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Lab Manual – TSRs and Hardware Interrupts

Exercise 1: Write a TSR to clear the screen when CTRL key is pressed and restore it when it is released.

Note: Scan key of CTRL Press is 0x1D.

To reserve specific number of bytes anywhere:

Video: times 10 dw 0 ; this will reserve 20 bytes starting from the label 'video' and initialize them to zero.

Exercise 2: Write a TSR and which manipulates the given string and then shows it onto the screen according to given rules:

- While left shift is pressed, the word "and" present in string must be replaced by "dna" and whole string is to be displayed onto screen.
- If left shift is released, your screen should be cleared
- While right shift is pressed, the word "has" present in string must be replaced by "sah" and whole string is to be displayed onto screen.
- If left shift is released, your screen should be cleared
- For any other buttons, your code should not do anything and pass the control to Original ISR designed for keyboard interrupts

Scan Code (Left Shift Press): 0x2a

Scan Code (Right Shift Press): 0x36

Example:

String: db 'He has food and drinks',0

On Left Shift Press: He has food dna drinks

On Right Shift Press: He sah food and drinks