National University of Computer and Emerging Sciences

Lab Manual

Computer Organization and Assembly Language



Lab 10

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| **Class** | CS3E |
| **Semester** | Fall 2023 |

Fast School of Computing

FAST-NU, Lahore, Pakistan

# Objectives

* Hardware/Software Interrupts
* Graphics Mode
* Video Memory
* Design 2D Graphics

**Note for all questions**: You can make as many memory variables and subroutines as you need.

## ACTIVITY 1: [70 Marks]

Write a TSR takes name of the student and then shows it onto the screen according to given rules:

• While left shift is pressed, the name should be displayed on screen.

• If left shift is released, your screen should be cleared

• For any other buttons, your code should not do anything

Scan Code (Left Shift Press): 0x2a

Scan Code (Right Shift Press): 0x36.

## ACTIVITY 2: [30 Marks]

Write a program to make an asterisk travel the border of the screen, from upper left to upper right to lower right to lower left and back to upper left indefinitely.

## REFERENCES

1. <http://vitaly_filatov.tripod.com/ng/asm/asm_023.1.html>
2. http://www.dosbox.com/download.php?main=1
3. <http://sourceforge.net/projects/nasm>
4. <http://www.nasm.us/>
5. [http://www.programmersheaven.com/download/21643/download.aspx (AFD)](http://www.programmersheaven.com/download/21643/download.aspx)