

National University of Computer and Emerging Sciences

Lab Manual

Computer Organization and Assembly Language



Lab 09

Instructor

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Class

DS3

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Fast School of Computing

FAST-NU, Lahore, Pakistan

Objectives

- Subroutines
- Display Memory
- String Instructions

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Note for all questions: You can make as many memory variables, subroutines as you need. Must read all the manual before starting.

ACTIVITY 1: [20 Marks]

Write a program which prints a moving counter as shown in [the attached video file](#)[1].

ACTIVITY 2: [20 Marks]

Write a subroutine **RANDOMPOS** which (on each call) receives a number as **SEED** and based on that **SEED** generates random position (**X, Y** of the DOSBox Screen).

Write a program which displays Counter from **Activity4** on random locations Using the **RANDOMPOS**.

ACTIVITY 3: [10 Marks]

Write a program that copies the first 7 lines of AFD Introduction screen in last 7 lines, As shown below:

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: DOSBOX

Welcome to DOSBox v0.74

For a short introduction for new users type: INTRO
For supported shell commands type: HELP

To adjust the emulated CPU speed, use ctrl-F11 and ctrl-F12.
To activate the keymapper ctrl-F1.
For more information read the README file in the DOSBox directory.

HAVE FUN!
The DOSBox Team http://www.dosbox.com

Z:\>SET BLASTER=A220 I7 D1 H5 T6

Z:\>mount C E:\Google\FAST\DosBox_lab
Drive C is mounted as local directory E:\Google\FAST\DosBox_lab\

Welcome to DOSBox v0.74

For a short introduction for new users type: INTRO
For supported shell commands type: HELP

C:\> adjust the emulated CPU speed, use ctrl-F11 and ctrl-F12.
```

REFERENCES

- [1] <https://www.youtube.com/watch?v=yImCcDf3Oek>
- [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 (AFD))