

**National University of Computer and Emerging
Sciences**

Lab Manual

Computer Organization and Assembly Language



Lab 08

Instructor

Rida
Mahmood

Class

DS3

Semester

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Fast School of Computing

FAST-NU, Lahore, Pakistan

Objectives

- String Processing
- STOS Example – Clearing the Screen
- LODS Example – String Printing
- SCAS Example – String Length
- MOVS Example – Screen Scrolling

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ACTIVITY 1: [15 Marks]	2
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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 subroutine which uses nested loops for creating a delay of around 3-5 secs. **Note:** Do not use any special commands or interrupts for creating any delay.

ACTIVITY 2: [20 Marks]

Practice the following examples from **Chapter 7** and display their outputs in report:

STOS Example – Clearing the Screen

LODS Example – String Printing

SCAS Example – String Length

MOVS Example – Screen Scrolling

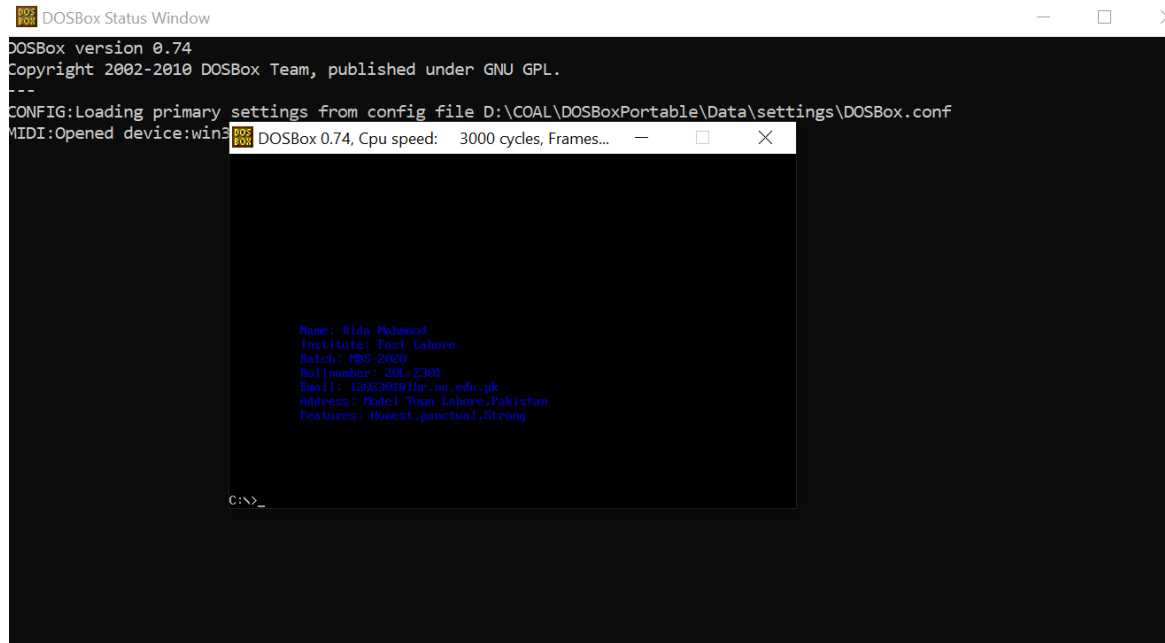
ACTIVITY 3: [40+20 Marks]

- a. Use the subroutines developed in **Activity 1** and **Activity 2** to create an animation (of Start or End Screen) which shows the following information about you (every message with delay) as shown on the following figure and in the

[YouTube link \[1\]](#). (40 Marks)

Note: Do not pass string length parameter calculate string length automatically.

- b. Record a video of your animation through Mobile or any screen recorder and submit along with the report. (20 Marks)



ACTIVITY 4:

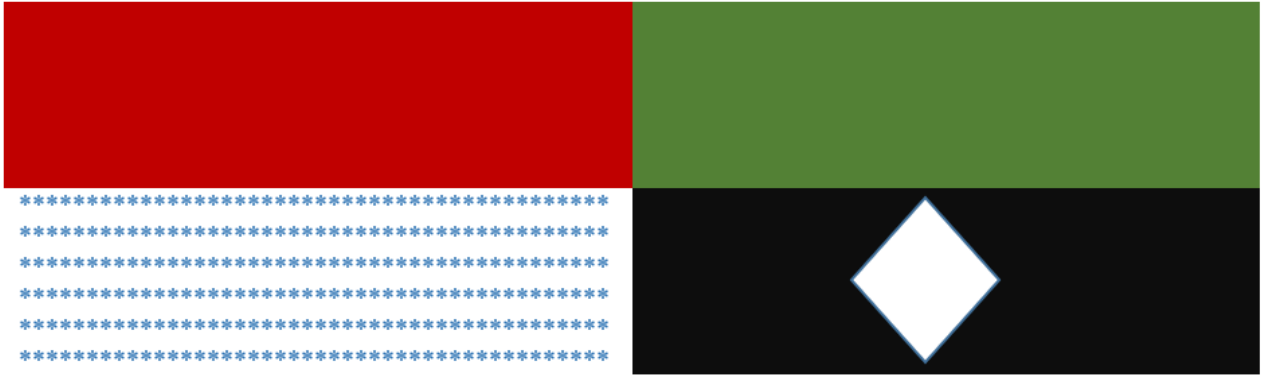
→ Paint the Upper Left Part red starting from top left to top right. After painting first row, start painting 2nd row from right to left, then 3rd row from left to right and so on

→ Paint the Upper Right Part green starting from first column painting it from top to bottom, then 2nd column from bottom to top, then 3rd column from top to bottom and so on

→ Start filling Lower Left Part with asterisk '*'. First make a boundary of lower left part with asterisks; starting from top left position of lower left part, moving right then moving down then moving left and then moving back to top left, then fill all the adjacent cells inside it in same manner and so on

->Show the making of a solid diamond in the center of Lower Right Part

In the end your screen should look like this:



REFERENCES

- [1] https://youtu.be/Anphs9zoP_c
- [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)