National University of Computer and Emerging Sciences

Laboratory Manual

for

Computer Organization and Assembly Language Programming

(EL 213)

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Section	H
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Objectives

After performing this lab, students shall be able to:

- ✓ Subroutines
- ✓ Display Memory

Exercise 1: Write a subroutine in assembly language that prints your roll number in reverse order with the format "22L-XXXX" at the specified row and column on the screen. Set the background color to red and the foreground color to green.

Starting row: 12 Starting column: 40

The subroutine should reverse the order of the digits and letters in your roll number, ensuring the final output looks like "XXXX-L22."

Exercise 2: Write a subroutine in assembly language to swap the content of the upper half of the screen with the lower half. This means that what was originally displayed in the upper half should now be in the lower half, and vice versa.

Exercise 3: Write a subroutine in assembly language to change the text color of each row on the screen sequentially. Start with the first row, which should be displayed in red. Then, move to the second row with blue text, and continue this pattern for the entire screen.

Exercise 4: Write a function **PrintRectanlge** that prints a rectangle having its TopLeft and BottomRight corners at (top,left) and (bottom,right) coordinates respectively where top, left, bottom and right are parameters passed by caller. Also pass attribute by caller to print coloured rectangle. Following is a red rectangle with TopLeft = (2, 10) and BottomRight = (20, 60).