National University of Computer and Emerging Sciences



Laboratory Manual

for

Computer Organization and Assembly Language Programming

(EL 213)

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| Section | L |
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## Objectives

After performing this lab, students shall be able to:

* Subroutines
* Recursive Subroutines
* Stack

**Exercise 1:** Write a recursive subroutine, which takes array address and 16-bit number (N) as parameters, and store 1 to N numbers at a given address in decreasing order.

Pseudo Code

FillArray(arrayaddress,N)

if N>=1

[Arrayaddress]=N

**INC** arrayaddress

FillArray(arrayaddress,N-1)

**else**

return

**Exercise 2:** Write a function that takes three numbers as the input argument and return the highest number as an output argument. The arguments (input/output) are to be passed to function on the stack. Create a local variable in a function to keep track of the max number. All the values of registers should be saved and restored before and after the call. After the return from function pop the output in ax.