National University of Computer and Emerging Sciences

Laboratory Manual

for

Computer Organization and Assembly Language

Course Instructors

Lab Instructor(s)

Section

Semester

Department of Computer Science

COAL Lab 9 Manual

Objectives:

- Revision
- Problems & Assignments

Problem(s) / Assignment(s)

Discussion & Practice **Estimated completion time: 1 hr, 30 mins**

Problem 8.1: *Reverse an Array* **Estimated completion time:20 mins**

Use a loop with indirect or indexed addressing to reverse the elements of an integer array in place. Do not copy the elements to any other array. Use the SIZEOF, TYPE, and LENGTHOF operators to make the program as flexible as possible if the array size and type should be changed in the future. Display the modified array by calling the DumpMem.

Problem 8.2: *Reversing a String* **Estimated completion time:15 mins**

Write a program using the LOOP instruction with indirect addressing that copies a string from source to target, reversing the character order in the process. Use the following variables:

```
source BYTE "This is the source string",0

target BYTE SIZEOF source DUP('#')
```

Use DumpMem to display the string. If your program works correctly, it will display the following sequence of hexadecimal bytes:

```
67 6E 69 72 74 73 20 65 63 72 75 6F 73 20 65 68
74 20 73 69 20 73 69 68 54
```

You are done with your exercise(s), make your submission ☺