National University of Computer and Emerging Sciences

Lab Manual

Computer Organization and Assembly Language

Lab 03

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Class	CS3
Sections	A1, D1, H1, K2
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Fast School of Computing

FAST-NU, Lahore, Pakistan

Objectives

- How to interpret the different types of jumps
- How to use the different types of registers and how to manipulate them in assembly language
- How to perform arithmetic operations with registers and conditional jumps
- How to use the debugger for viewing the available registers and their function

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ACTIVITY 1:

Give the value of the zero flag, the carry flag, the sign flag, and the overflow flag after each of the following instructions:

	ZF	CF	SF	OF
mov ax, 0x1254				
mov bx, 0x0FFF				
add ax, 0xEDAB				
add ax, bx				
add bx, 0xF001				

ACTIVITY 2:

Write a program which calculates the square of a number in memory variable. Display the result in accumulator (AX).

ACTIVITY 3

Write a program which finds the frequency of a specific number form the given array.

array: *dw* ***1, 9, 9,9, 8, 8,8, 8, 8,8, 1, 1, 9, 9, 8, 8, 8, 8, 1, 9, 8, 8***

ACTIVITY 4:

Write a program which finds the factorial of a given integer without the use of MUL command.

ACTIVITY 5:

Write a program which determines largest number from the given array.

array: *dw* ***111, 999, 888, 888, 11, 99, 88, 88, 1, 9, 8, 8***

ACTIVITY 6:

Modify your program in Activity 5 to find top two numbers from the given array.

REFERENCES

- "http://www.dosbox.com/download.php?main=1
- http://sourceforge.net/projects/nasm
- http://www.nasm.us/
- http://www.programmersheaven.com/download/21643/download.aspx (AFD)