ECE4270/ECE7210 LABORATORY 3

STRING SEARCH

OBJECTIVE

1. Use of string-related instructions.
2. Use of string pointers.

INTRODUCTION

The designers at IBM and Microsoft have assigned 256 available interrupts for the 8086/8088 to develop DOS operating system, preventing conflict between BIOS and DOS interrupt designations. Each interrupt has its own physical address and purpose, depending on each DOS and computer version. DOS INT 21H functions are primarily used for input, output, and file and memory management operations. DOS uses INT 21H functions 0AH and 01H to read a string or a character from the keyboard respectively and functions 02H and 09H to output data on the screen.

PRE-LAB

1. How to read a string from keyboard using DOS Interrupt? (write down the command)
2. How to design a loop?
3. What is the ASCII value for “Lab3”?
4. Design a pseudo code for this lab.

LABORATORY

Write an EXE program that accepts a string from the keyboard, counts the number of capital and small alphabets, digits, and other symbols excluding spaces (0x20) and tabs (0x09), and echoes the string and its count information on the screen. Show your program to the TA.

Example: (Assume the filename is LAB3.EXE)

C:\4270> LAB3<CR>
ENTER A STRING: This Pentium 4 computer is too fast to run a DOS program. :-(<CR>
Input String : This Pentium 4 computer is too fast to run a DOS program. :-(
Contains : 5 capital letter(s).
    : 39 small letter(s).
    : 1 number(s).
    : 4 symbol(s).
C:\4270>