**EEL 2880: Software Techniques: Modified Fall 2019: 10 24 2019**

**Dr. Subbarao V Wunnava: Chp 8\_9: Strings and Security:**

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**8.5 *(Character Testing)* Write a program that inputs a character from the keyboard and tests the character with each of the functions in the character-handling library. The program should print the value returned by each function**.

// Exercise 8.5 Solution: Subbarao/Deitel 10 18 2019 EEL 2880: Problem 8.5 modified: String

// string functions copy right extended thru 2019

 #include <stdio.h>

 #include <ctype.h>

 #include <math.h>

 int main( void )

 {

 int c; // character input by user

 printf( "%s", "Enter a character: " );

 c = getchar();

 // test each function of the character-handling library

 printf("\n\a the ASCII numeric value of the entered character %c: %d \n\n\a ", c, c);

 printf( "isdigit( \'%c\' ) = %d\n\a", c, isdigit( c ) );

 printf( "isalpha( \'%c\' ) = %d\n\a", c, isalpha( c ) );

 printf( "isalnum( \'%c\' ) = %d\n\a", c, isalnum( c ) );

 printf( "isxdigit( \'%c\' ) = %d\n\a", c, isxdigit( c ) );

 printf( "islower( \'%c\' ) = %d\n\a", c, islower( c ) );

 printf( "isupper( \'%c\' ) = %d\n\a", c, isupper( c ) );

 printf( "tolower( \'%c\' ) = %d\n\a", c, tolower( c ) );

 printf( "toupper( \'%c\' ) = %d\n\a", c, toupper( c ) );

 printf( "isspace( \'%c\' ) = %d\n\a", c, isspace( c ) );

 printf( "iscntrl( \'%c\' ) = %d\n\a", c, iscntrl( c ) );

 printf( "ispunct( \'%c\' ) = %d\n\a", c, ispunct( c ) );

 printf( "isprint( \'%c\' ) = %d\n\a", c, isprint( c ) );

 printf( "isgraph( \'%c\' ) = %d\n\a", c, isgraph( c ) );

 system("PAUSE");

 } // end main



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**8.6 *(Displaying Strings in Uppercase and Lowercase)* Write a program that inputs a line of text into char array s[100]. Output the line in uppercase letters and in lowercase letters.**

// Exercise 8.6 Solution: Upper and Lower Case letters

 // Deitel/Subbarao EEL 2880 Fall 2019 10 22 2019

 #include <stdio.h>

 #include <ctype.h>

 int main( void )

 {

 char s[ 100 ]; // define character array of size 100

 size\_t i; // loop counter

 // use gets to get text from user

 puts( "Enter a line of text: \a\a\n\n" );

 fgets( s, 100, stdin );

 puts( "\n\aThe line in uppercase is:" );

 // convert each character to uppercase and output

 for ( i = 0; s[ i ] != '\0'; ++i )

 {

 printf( "%c", toupper( s[ i ] ) );

 } // end for Uppercase characters

 puts("");

 printf( " Uppercase ASCII code for the entered string \n\n\a\a");

 for ( i = 0; s[ i ] != '\0'; ++i )

 {

 printf( " %c:%d",toupper(s[ i ]),toupper(s[ i ]));

 } // end for Uppercase ASCII code

 puts( "\n\n\a The line in lowercase is:" );

 // convert each character to lowercase and output

 for ( i = 0; s[ i ] != '\0'; ++i )

 {

 printf( "%c", tolower( s[ i ] ) );

 } // end for Lowercase characters

 printf( " Lowercase ASCII code for the entered string \n\n\a\a");

for ( i = 0; s[ i ] != '\0'; ++i )

 {

 printf( " %c:%d", tolower( s[ i ]),tolower( s[ i ]) );

 } // end for Lowercase ASCII

 printf( "\n \a\t The final value of loop variable 'i' is:%d\n", i);

 puts( "" );

 system("PAUSE");

 } // end main

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**8.20 *(Counting the Number of Words in a String)* Write a program that inputs several lines oftext and uses strtok to count the total number of words. Assume that the words are separated by either spaces or newline characters.**

// Exercise 8.20 Solution: Deitel/Subbarao 10 11 2019: Counting words

 #include <stdio.h>

 #include <string.h>

 int main( void )

 {

 char text[ 4 ][ 80 ]; // text entered by user upto 4 lines and . 80 characters a line

 char \*tokenPtr; // pointer to current token

 size\_t i; // loop counter

 int counter = 0; // token counter

 puts( "Enter 4 lines of text:\a\n " );

 // read 4 lines of text

 for ( i = 0; i <= 3; ++i )

 {

 fgets( &text[ i ][ 0 ], 80, stdin );

 } // end for loop 1 for lines of text

 // loop through 4 lines of text

 for ( i = 0; i <= 3; ++i )

 {

 // get first token

 tokenPtr = strtok( &text[ i ][ 0 ], " \n" );

 // while tokenPtr does not equal NULL

 while ( tokenPtr )

 {

 ++counter;

 tokenPtr = strtok( NULL, " \n" ); // get next token

 } // end while

 } // end for getting tokens

 printf( "\n\a\a The total number of words is %d\n\n", counter );

 system("PAUSE");

 } // end main

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