Course: Programming Fundamental –ENSF 337

Lab #: Lab 4

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Exercise C

Code

```
//  lab2exC.c
// ENSF 337 Fall 2019 Lab 4 Exercise  C
//          Jiho Kim

#include <stdio.h>
#define ELEMENTS(x) sizeof(x)/sizeof(x[0])



int main()
{

   int size;
   int a[] = {45, 67, 89, 24, 54};
   double b[20] = {14.5, 61.7, 18.9, 2.4, 0.54};

   size = ELEMENTS(a);



   printf("Array a has 5 elements and macro ELEMENTS returns %d\n", size);

   size = ELEMENTS(b);



   printf("Array b has 20 elements and macro ELEMENTS returns %d\n", size);
```

```
    return 0;

}
```

Output:

```
Array a has 5 elements and macro ELEMENTS returns 5
Array b has 20 elements and macro ELEMENTS returns 20
```

Exercise D

Output:

```
TESTING strlen FUNCTION ...

Expected to display: my_string length is 0.
my_string length is 0.
Expected to display: my_string size is 100 bytes.
my_string size is 100 bytes.
Expected to display: my_string contains banana.
my_string contains banana
Expected to display: my_string length is 6.
my_string length is 6.
Expected to display: my_string contains "".
my_string contains:""
Expected to display: my_string length is 0.
my_string length is 0.
Expected to display: my_string size is still 100 bytes.
my_string size is still 100 bytes.

TESTING strncat FUNCTION ...

Expected to display: my_string contains "tic"
my_string contains "tic"
Expected to display: my_string length is 3.
my_string length is 3.
Expected to display: my_string contains "tic-tac"
my_string contains:"tic-tac"
Expected to display: my_string contains "tic-tac-toe"
my_string contains:"tic-tac-toe"
Expected to display: my_string has 11 characters.
my_string has 11 characters.

Using strcmp - C library function:
Expected to display: "ABCD" is less than "ABCDE"
"ABCD" is less than "ABCDE"

TESTING strcmp FUNCTION ...

"ABCD" is less than "ABND" ... strcmp returns -11
"ABCD" is equal "ABCD" ... strcmp returns 0
"ABCD" is less than "ABCd" ... strcmp returns -32
"Orange" is greater than "Apple" ... strcmp returns 106
```

Exercise E

Output:

```
Enter a double or press Ctrl-D to quit: 23.4
Your double value is: 23.4000000
Enter a double or press Ctrl-D to quit: .56
Your double value is: 0.5600000
Enter a double or press Ctrl-D to quit: -.23
Your double value is: -0.2300000
Enter a double or press Ctrl-D to quit: -0.45
Your double value is: -0.4500000
Enter a double or press Ctrl-D to quit: -0.0000067
Your double value is: -0.0000067
Enter a double or press Ctrl-D to quit: 564469999
Your double value is: 564469999.0000000
Enter a double or press Ctrl-D to quit: +8773469
Your double value is: 8773469.0000000
Enter a double or press Ctrl-D to quit: +.5
Your double value is: 0.5000000
Enter a double or press Ctrl-D to quit: 12abc
12abc is an invalid Double.
Enter a double or press Ctrl-D to quit: 12..9
12..9 is an invalid Double.
Enter a double or press Ctrl-D to quit:
Good Bye.
```