

Data Structures and Algorithms Lab

01. Building the Basics

Lab Code: 17ECSP201

Lab No: 01

Semester: III

Date: 10 Aug, 2017

Batch: C1

Theme: DSA Marathon – Catch Me if You Can

Objective: Operating and Enhancing knowledge on Foundational Concepts of C

Below listed are tasks which you will carry out in a team of three. The end time will be decided by the professor (Yayy). Look out! Your scores are getting updated on the spreadsheet scoreboard.

Task 01:

You are given with a code to negate the array elements. The code has some errors and warnings. Debug all the errors and warnings.

The code can be found in the file name "negate_array.c"

[Marks: 10]

Task 02:

Write a code which will generate the following warning message:

warning: return type of 'main' is not 'int'

[Marks: 10]

Task 03:

Yes or No?

Call any one of the DSA Lab team Faculty and answer with Yes or No for below statement:

"_____, I have copied all the code and I will!"

[Marks: 10]

Task 04:

Give one real time example of 'do-while' and 'while'

[Marks: 10]

Task 05:

Write a program which would generate the output as in 5.exe

[Marks: 20]

Task 06:

Write a program which would generate the output as in 6.exe

[Marks: 20]

Task 07:

Write a program which would generate the output as in 7.exe

[Marks: 30]

Task 08:

Identify three keywords in the maze below:

[Marks: 30]

a	p	p	l	e	g	g	o	a	t	i	p	o	t	e
s	i	n	g	a	p	o	r	e	c	h	a	r	c	t
n	n	t	o	t	a	l	e	t	t	e	r	e	s	t
a	n	a	a	d	a	m	a	n	a	g	p	u	r	s
t	e	o	d	d	m	a	n	o	u	t	b	a	l	l
u	m	l	m	h	k	d	o	u	b	l	e	a	r	d
r	r	f	i	l	e	p	o	i	n	t	e	r	i	s
a	c	r	i	c	k	e	t	m	a	t	c	h	f	i
l	s	d	g	h	j	k	y	t	i	w	e	r	t	y
o	a	w	e	d	r	f	t	g	h	n	t	y	u	j
g	o	o	g	l	e	a	s	t	e	r	t	e	s	t

Task 09:

Write a program to display Multiplication Table using for(), while() and do while().

Accept a number from the user within the range 1 to 100 and display its multiplication table from:

- 1 to 10 using for(),
- 11 to 20 using while() and
- 21 to 30 using do while()

Example: If input number is 3, output format should be like:

3 X 1 = 3

3 X 2 = 6

3 X 3 = 9

3 X 4 = 12 etc

[Marks: 40]

Task 10:

Write a program which will convert the user entered words to numerics. For example if the input is 'seven five five', then the output has to be the string 755. Assume user is going to enter all the words in smaller case. The maximum that user can enter is 'nine nine nine' and minimum that user can enter is 'zero'.

Handle all the pre and post conditions suitably.

[Marks: 50]

Task 11:

Admission cell verification counter of a college maintains the following data about a student.

- Unique Identity Number
- Department Code and
- Contact Number

Write a program to maintain the above mentioned data of atleast 500 students. The program should be operable for following set of operations:

- Add a new data entry
- Delete a data entry
- Display all the available entries

Appropriate messages should be displayed for all the pre and post conditions. Use suitable and meaningful names for the variables.

[Marks: 50]

Task 12:

Write a C program to find the missing number from 0 to 9. In the main(), statically initialize the integer array with numbers from 0 to 9, by missing out a number.

Write a function called number_check(), which accepts array as input and finds out which is the missing number from 0 to 9. Print the number in the function itself.

Handle all the required conditions appropriately.

[Marks: 50]

**** May The Force Be With You ****