Lab 2

Turn In:

1. Coding Assignment : Exercise #1 – **Due Thursday, February 7, 2013**
   a) For each exercise, a hardcopy package must be generated to include the following items:
      - Cover Sheet (see the sample copy include in lecture note)
      - Exercise/problem statement
      - Copy of program (named as **`cis27Spring2013YourNameLab2Ex1)`**
      - Copy of output (copy and paste from output screen as possible)

   b) Submitting in class one hard copy package for each exercise; and
   c) Emailing your work as follows,
      - One message for each exercise.
      - Attaching the source file (program) that was created in part (a).
      - The SUBJECT line of the message should have one of the following lines:
        `CIS 27 Spring 2013 Your Name : Lab 2 – Exercise #1`
        Or,
        `cis27Spring2013YourNameLab2Ex1`

2. Q.E.D.

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1. Coding Assignment

Exercise 1 – Functions

(1) Write a C program that will ask for several integers and then compute before display the required information as shown in the output below; the work is framed as a menu application with 2 functions to be defined and used in the menu.

(2) The program should display the output to screen as

```
CIS 27 – C Programming
Laney College
Your Name

Assignment Information --
  Assignment Number:  Lab 02,
                      Coding Assignment -- Exercise #1
  Written by:         Your Name
  Submitted Date:     Due Date
```

You need to replace "**`Your Name`**" with your real name and "**`Due Date`**" with the specified due date.

The above result should come from a call to a function named as `displayClassInfoYourName()`, where `YourName` must be replaced by your first name and the initial of your last name.

(3) The program will then display the result as follows,

```
*********************************************
*                    MENU                   *
* 1) Calling extractLargestDigitYourname()  *
* 2) Calling displayDigitInfoYourname()     *
* 3) Quit                                   *
*********************************************
Enter your option (1, 2, or 3): 4

    WRONG OPTION!


*********************************************
*                    MENU                   *
* 1) Calling extractLargestDigitYourname()  *
* 2) Calling displayDigitInfoYourname()     *
* 3) Quit                                   *
*********************************************
Enter your option (1, 2, or 3): 1

  Calling extractLargestDigitYourName() --
    How many integers (to be worked on)? 2
      Enter integer #1: 1230476
      Enter integer #2: 10034850

    The largest digit is 8
```

```
    Digit 8 can be found in:
      10034850


*********************************************
*                    MENU                   *
* 1) Calling extractLargestDigitYourname()  *
* 2) Calling displayDigitInfoYourname()     *
* 3) Quit                                   *
*********************************************
Enter your option (1, 2, or 3): 1

  Calling extractLargestDigitYourName() --
    How many integers (to be worked on)? 3
      Enter integer #1: 1230476
      Enter integer #2: 10034950
      Enter integer #3: 9023497

    The largest digit is 9
    Digit 9 can be found in:
      10034950
      9023497


*********************************************
*                    MENU                   *
* 1) Calling extractLargestDigitYourname()  *
* 2) Calling displayDigitInfoYourname()     *
* 3) Quit                                   *
*********************************************
Enter your option (1, 2, or 3): 2

  Calling displayDigitInfoYourName() --
   How many integers (to be worked on)? 2
      Enter integer #1: 1230476
      Enter integer #2: 10034850

   Occurrence of all existing digits --
    Digit 0 : 4
    Digit 1 : 2
    Digit 2 : 1
    Digit 3 : 2
    Digit 4 : 2
    Digit 5 : 1
    Digit 6 : 1
    Digit 7 : 1
    Digit 8 : 1

  Occurrence of all existing EVEN digits --
    Digit 0 : 4
    Digit 2 : 1
    Digit 4 : 2
    Digit 6 : 1
```

```
  Digit 8 : 1

The even digit(s) that has/have the largest occurrence –
  0
And the number of occurrence(s) : 4

The even digit(s) that has/have the smallest occurrence –
  2
  6
  8
And the number of occurrence(s) : 1


*******************************************
*                    MENU                 *
* 1) Calling extractLargestDigitYourname() *
* 2) Calling displayDigitInfoYourname()    *
* 3) Quit                                  *
*******************************************
Enter your option (1, 2, or 3): 2

  Calling displayDigitInfoYourName() --
    How many integers (to be worked on)? 3
      Enter integer #1: 1230476
      Enter integer #2: 10434950
      Enter integer #3: 9023497

   Occurrence of all existing digits --
    Digit 0 : 4
    Digit 1 : 2
    Digit 2 : 2
    Digit 3 : 3
    Digit 4 : 4
    Digit 5 : 1
    Digit 6 : 1
    Digit 7 : 2
    Digit 9 : 3

  Occurrence of all existing EVEN digits --
    Digit 0 : 4
    Digit 2 : 2
    Digit 4 : 4
    Digit 6 : 1

  The even digit(s) that has/have the largest occurrence –
    0
    4
  And the number of occurrence(s) : 4

  The even digit(s) that has/have the smallest occurrence –
    6
  And the number of occurrence(s) : 1
```

```
*********************************************
*                    MENU                   *
* 1) Calling extractLargestDigitYourname()  *
* 2) Calling displayDigitInfoYourname()     *
* 3) Quit                                   *
*********************************************
Enter your option (1, 2, or 3): 3

  Have fun ...
```

Most of the above output should come from calls to the following functions

`extractLargestDigitYourName(), and`

`displayDigitInfoUYourName()`

where `YourName` must be replaced by your first name and the initial of your last name.

Function `extractLargestDigitYourName()` will return the value of the largest digit; this value will be treated as an `int`.

Function `displayDigitInfoYourName()` will display the occurrences of all possible digits appropriately and also return the total number of occurrence(s) for all digits.

The above functions and `main()` should generate proper text for displaying purposes.

(4) Save the program as `cis27Spring2013YourNameLab2Ex1.c`.