Lab 6

Turn In:

1. Coding Assignment – Due Thursday, ???? ??, 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 **`cis27Spring2013YourNameLab6Ex1)`**
        - 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 6 – Exercise #1`
          Or,
          `cis27Spring2013YourNameLab6Ex1`

2. Q.E.D.

****

1. Coding Assignment

Exercise #1

1. Write a menu program to have the display below,

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

Assignment Information --
  Assignment Number:  Lab 06,
                      Coding Assignment -- Exercise #1
  Written by:         Your Name
  Submitted Date:     Due Date
```

2. While working with fractions, one would like to display the results as ratios of integers. The computations need to be performed with fractions to produce the results that are fractions in reduced form.

   Note that fraction data/value **must** be declared as a `struct Fraction` of two elements, which are integers of `num` and `denom`. These Fraction objects must have their negativity to be taken to the numerators.

3. And, you are to work with linked list of `Fraction` objects, which are defined in previous lab and discussions.

   The swapping functions will be implemented using the requirements given below.

```
int swapFractionList1YourName(FractionList* headAdr, int n, int m);

int swapFractionList2YourName(FractionList* headAdr, int n, int m);
```

   where

   Version #1 will work using the addresses of nodes as information, and **Version #2** will work using the addresses of the next member of the nodes as described and experimented in class discussions.

4. Write a **menu** program to have the above options (or more) for a linked list of `Fraction` data/objects. The menu should work just as outlined below.

   Your menu program should not use global data; data should be allowed to be read in and stored dynamically.

5. Name your program as **`cis27Spring2013YourNameLab6Ex1.c`**

   Test your output with the fractions below.

```
{3/4, 5/12, -3/7, 4/9, 2/11, 5/101, 6/17, -8/15}
```

   Make sure that the output is reasonable and detailed enough so that the user would understand the list – Use `printf()` measurably.

   Attach the output at the end of your source code (as comment).

```
*******************************
* LINKED LIST MENU: Fraction *
* 1. Displaying current list *
* 2. Inserting               *
* 3. Swapping                *
* 4. Quit                    *
*******************************
Select the option (1, 2, 3, or 4): 5

  You should not be in this class!



*******************************
* LINKED LIST MENU: Fraction *
* 1. Displaying current list *
* 2. Inserting               *
* 3. Swapping                *
* 4. Quit                    *
*******************************
Select the option (1, 2, 3, or 4): 1

  EMPTY LIST ...



*******************************
* LINKED LIST MENU: Fraction *
* 1. Displaying current list *
* 2. Inserting               *
* 3. Swapping                *
* 4. Quit                    *
*******************************
Select the option (1, 2, 3, or 4): 2

      ***********************
      *   Inserting Menu    *
      * 1. As first node    *
      * 2. After n-th node  *
      * 3. As last node     *
      * 4. Displaying       *
      * 5. Quit             *
      ***********************
      Select the option (1, 2, 3, or 4): 1

        //PERFORM AND TEST YOUR FUNCTIONS/OPTIONS

      ***********************
      *   Inserting Menu    *
      * 1. As first node    *
      * 2. After n-th node  *
      * 3. As last node     *
      * 4. Displaying       *
      * 5. Quit             *
      ***********************
      Select the option (1, 2, 3, or 4): 2

        //PERFORM AND TEST YOUR FUNCTIONS/OPTIONS
```

```
      **********************
      *   Inserting Menu   *
      * 1. As first node   *
      * 2. After n-th node *
      * 3. As last node    *
      * 4. Displaying      *
      * 5. Quit            *
      **********************
      Select the option (1, 2, 3, or 4): 4

        //Displaying your current list

      **********************
      *   Inserting Menu   *
      * 1. As first node   *
      * 2. After n-th node *
      * 3. As last node    *
      * 4. Displaying      *
      * 5. Quit            *
      **********************
      Select the option (1, 2, 3, or 4): 5


*******************************
* LINKED LIST MENU: Fraction *
* 1. Displaying current list *
* 2. Inserting               *
* 3. Swapping                *
* 4. Quit                    *
*******************************
Select the option (1, 2, 3, or 4): 3

      ********************
      *  Swapping Menu   *
      * 1. Version #1    *
      * 2. Version #2    *
      * 3. Quit          *
      ********************
      Select the option (1, 2, 3, or 4): 1

        //PERFORM AND TEST YOUR FUNCTIONS/OPTIONS

      ********************
      *  Swapping Menu   *
      * 1. Version #1    *
      * 2. Version #2    *
      * 3. Quit          *
      ********************
      Select the option (1, 2, 3, or 4): 3


*******************************
* LINKED LIST MENU: Fraction *
* 1. Displaying current list *
* 2. Inserting               *
```

```
* 3. Swapping                 *
* 4. Quit                     *
*****************************
Select the option (1, 2, 3, or 4): 1

  //PERFORM AND TEST YOUR FUNCTIONS/OPTIONS



*****************************
* LINKED LIST MENU: Fraction *
* 1. Displaying current list *
* 2. Inserting               *
* 3. Swapping                *
* 4. Quit                    *
*****************************
Select the option (1, 2, 3, or 4): 3

      ********************
      *  Swapping Menu   *
      * 1. Version #1    *
      * 2. Version #2    *
      * 3. Quit          *
      ********************
      Select the option (1, 2, 3, or 4): 2
        //PERFORM AND TEST YOUR FUNCTIONS/OPTIONS

      ********************
      *  Swapping Menu   *
      * 1. Version #1    *
      * 2. Version #2    *
      * 3. Quit          *
      ********************
      Select the option (1, 2, 3, or 4): 3



*****************************
* LINKED LIST MENU: Fraction *
* 1. Displaying current list *
* 2. Inserting               *
* 3. Swapping                *
* 4. Quit                    *
*****************************
Select the option (1, 2, 3, or 4): 1

  //PERFORM AND TEST YOUR FUNCTIONS/OPTIONS



*****************************
* LINKED LIST MENU: Fraction *
* 1. Displaying current list *
* 2. Inserting               *
* 3. Swapping                *
* 4. Quit                    *
*****************************
Select the option (1, 2, 3, or 4): 4
```

You should be learning and enjoying the work!