Email:

Date:

Note!

- **This is an open book, note, computer but no Internet test.**
- **To receive credit, you must show your work and steps for each problem.**
- **Provide explanation as required or as if you wish to.**
- **When asked, draw the correct map(s) or structure(s) and record the EXACT OUTPUT for full credit.**

Turn In:

1. In class on Wednesday, December
   a) For the exercise, the following items must be generated for submission:
      - Copy of C program (C file must be named as **`cis26Fall2010YourNameFinalExamVersionA.c`**)
      - Attach the copy of output at the end of the C code (copy from output screen and paste it as comment)

   b) Turn in hard copies + problem statement (this handout)
   c) Email the source file (C program) work as follows,
      - Attaching the source file (C file)
      - The SUBJECT line of each message should have one of the following lines:

        `CIS 26 Fall 2010 : YourName : Final Exam Version A`

        Or,

        `cis26Fall2010YourNameFinalExamVersionA.c`

2. NOTE! Replace all **YourName** with your **First** name and **Last** name as always.

3. NOTE! When turning in your work, you must always use computer font (such as `Courier` or `Courier New`) for program source code, output, and any references to the variable/object names, function names, class names, etc. The computer font provides the same width for every character; this will make the display consistent and easier to read.

4. Q.E.D.

Note! Provide all correct logic, syntax and statements for full credits.

Problem #1

Part A

Write a function named **`assembleDataYourNameVersionA()`** that will

a. Ask for an integer to be the size of a dynamic array; and

b. **Allow the user to enter** the required integer values based on the size obtained in Part (a) above; and

c. Determine and print the total number of **even digits** for each integer from the above array (print this information for all given values); and

d. Use the information from Part (c) to assemble an integer so that this resulting integer will be as follows,

- The left-most digit will be the digit extracted from the highest index element of the array; and
- The second-left-most digit will be the digit extracted from the second highest index element of the array; and
- So on until the right-most digit will be the digit extracted from the lowest index element of the array; and

e. Return the integer obtained from Part (d).

Part B

Write a program named as **`cis26Fall2010YourNameFinalExamVersionA.c`** with `main()` calling the above `synthesizeDataYourNameVersionA()` to produce the output below (menu application, and copy and paste your output at the end of the C file as comment).

```
CIS 26 – C Programming
  Laney College
  Your Name
  Final Exam Version A

  ************************************************
  *                        MENU                  *
  *  1. Calling assembleDataYourNameVersionA()   *
  *  2. Quit                                     *
  ************************************************
  Select an option (use integer value only): 6

    WRONG OPTION!


  ************************************************
  *                        MENU                  *
  *  1. Calling assembleDataYourNameVersionA()   *
  *  2. Quit                                     *
  ************************************************
  Select an option (use integer value only): 1

    Enter an integer for size: -3

      Wrong Value!
```

```
  Enter an integer for size: 3

    Enter integer value #1: 1387
    Enter integer value #2: -1387
    Enter integer value #3: 43237

  The extracted info:
    Value #1 of 1387 : 1 even digit
    Value #2 of -1387 : 1 even digit
    Value #3 of 43237 : 2 even digits

  The assembled integer: 211

    De-allocating all necessary dynamic storage structures ...


**********************************************
*                        MENU                *
*  1. Calling assembleDataYourNameVersionA()  *
*  2. Quit                                    *
**********************************************
Select an option (use integer value only): 1

  Enter an integer for size: 4

    Enter integer value #1: 2439
    Enter integer value #2: -42418
    Enter integer value #3: 43237
    Enter integer value #4: 5608

  The extracted info:
    Value #1 of 2439 : 2 even digits
    Value #2 of -42418 : 4 even digits
    Value #3 of 43237 : 2 even digits
    Value #4 of 5608 : 3 even digits

  The assembled integer: 3242

    De-allocating all necessary dynamic storage structures ...


**********************************************
*                        MENU                *
*  1. Calling assembleDataYourNameVersionA()  *
*  2. Quit                                    *
**********************************************
Select an option (use integer value only): 1

  Enter an integer for size: -5

    Wrong Value!

  Enter an integer for size: 5

    Enter integer value #1: 2439
    Enter integer value #2: -42418
    Enter integer value #3: 43237
```

```
    Enter integer value #4: 5608
    Enter integer value #5: 51357

  The extracted info:
    Value #1 of 2439 : 2 even digits
    Value #2 of -42418 : 4 even digits
    Value #3 of 43237 : 2 even digits
    Value #4 of 5608 : 3 even digits
    Value #5 of 51357 : 0 even digit

  The assembled integer: 3242

    De-allocating all necessary dynamic storage structures ...


**************************************************
*                        MENU                    *
*  1. Calling assembleDataYourNameVersionA()     *
*  2. Quit                                       *
**************************************************
Select an option (use integer value only): 5

  WRONG OPTION!


**************************************************
*                        MENU                    *
*  1. Calling assembleDataYourNameVersionA()     *
*  2. Quit                                       *
**************************************************
Select an option (use integer value only): 1

  WRONG OPTION!


 HAVE A GREAT HOLIDAY!
```