

## LAB 7: NUMERIC ARRAY

For each problem below:

- a) Analyze the problem by identifying input, output, formula, and constraint
- b) Design an algorithm to solve the problem using <u>pseudocode</u> (so that you could include the pseudocode in your program)
- c) Prepare several, appropriate number of <u>test data</u> to verify the correctness of your program
- d) Prepare, compile, link, and execute the program to solve the problem
- e) Test your program using the prepared test data
- f) Write proper documentation in the program. Include the following information to form a <u>banner</u> at the beginning of your program:

**QUESTIONS** 

- 1. A C programming class has 30 students. Prompt and get final exam mark from each student. Based on the entered marks, print on the screen the following output:
  - a. Total marks for 30 students
  - b. Average final exam mark for the class

Format the program's input/output as follows:

```
Enter mark for Student 1: xx
Enter mark for Student 2: yy
...
Enter mark for Student 30: zz
Total marks: xyz
Average marks: abc
```

- 2. The number of cars crossing a bridge from Monday through Sunday in a given week are 986, 818, 638, 763, 992, 534 and 683. Use these numbers to initialize an array and write a program to generate the following output:
  - a. The number of cars crossing the bridge for each day.
  - b. The daily average number of cars crossing the bridge.
  - c. The largest number of cars crossing the bridge in a day.

3. Write a program that reads 20 integer numbers from the user. Store these numbers in an array. Determine and print the odd numbers from the entered numbers. Also print the total numbers of odd numbers on the screen. Format the program's input/output as follows:



4. Write a program to read four (4) Celsius degrees, and displays a table of these degrees with their corresponding degrees Fahrenheit and Kelvin. Format the input/output of the program based on the following sample:

used on the following sumple.	
Enter	four Celsius and Fahrenheit degrees:
X.XX	У•УУ
Table of Celsius, and Fahrenheit degrees Celsius Fahrenheit 	
x.xxx	у•уууу
x.xxx	у.уууу
x.xxx	у.уууу
x.xxx	у.уууу

5. Re-write the program written for Question (4) using two programmer-defined functions based on below structure chart. In this program use arrays to store the Celsius, Fahrenheit, and Kelvin degrees. Declare both arrays celsius[] and fahrenhit[] in the function main().

