ICS 103 – Computer Programming in C
Summer Semester 2008 (073)
Lab # 9 (1-D Arrays)

Objective:
Learn how to use one-dimensional arrays.

Scope:
The student should know the following:
1. Declaring and Referencing Arrays
2. Using Arrays as Input Parameters

Discussion:
The following problem will be discussed:

Write a program that displays a menu of options to the user and gets the user selection. The options should be:

1. Read the list of grades
2. Display the list of grades

Exercises:

Solve the following problems:

1- Write a program that declares an array of 5 `double` numbers. Use a loop to read 5 real numbers from user and fill the array. Then print the following on screen:
   a. All the elements of array
   b. The average of all the numbers in the array
   c. The numbers below average
   d. The numbers above average.

2- Consider the following list of monthly rainfall in a city in millimeters:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
11.5	10.6	9.8	3.7	8.5	14.0	18.5	22.4	27.6	12.5	12.0	13.8

Declare an array with the above data. It is desired to determine the months in which maximum and minimum rainfall occurred. Also find the average monthly rainfall and its standard deviation. Instead of actual names you can just print the number of month ranging from 1-12. No user input is required.

$$SD = \sqrt{\frac{\sum_{i=0}^{n-1}(r_i - R)^2}{n}}$$

Note that:

Where R is the average rainfall and r_i is the monthly rainfall.

Evaluation:

Your grade will depend on your active participation and seriousness during the lab.