Exercise G

Section G. Examples that require the use of Arrays

1. A company records its monthly sales information in an array of size 12; where Sales[0] represents January sales, Sales[1] is February sales etc. After entering the data the company wants to perform some queries on the data. Write a program that would do the following:
   a. Take in the sales for the 12 months.
      Note: You may use the array initialisation inside the program for storing these.
   b. Print the month when Maximum Sales is recorded.
      Note: You may just print 0, 1 etc. for Jan Feb etc…
   c. Print the month where Minimum Sales is recorded.
   d. Print the average monthly sales for the year.

2. Write a C# program that would sort a numeric array in descending order using the simplified selection sort method described.

   At the end of each pass print out the array to know the progress!

   Example for Multidimensional Array

3. The marks of students are stored in a two dimensional array with the subjects represented in columns and the students in the rows. That is Row 1 would pertain to Student 1 and the scores that this student has obtained is stored in various columns in row 1. Assuming that there are 12 students in a class and 4 subjects, write a program that would do the following:
   a. Compute the total marks obtained each student.
   b. Compute the class average (and standard deviation* - optional) of Marks for each subject.
   c. Determine the overall average of marks for the whole class for all subjects.
   d. Optional – make sure that your code works regardless of the number of students and the number of subjects. This means that you cannot make any assumption in the code that there are 12 students and 4 subjects.

   Note:

   * calculation of standard deviation is not required for first time exercise you may only compute the average – those needing additional practice may compute standard deviation)

     Standard Deviation is square root of variance where Variance is given by:

VARIANCE = { [SUM OF $(X_i - M)^2$] / N }; i = 1 to N
N is number of data elements (X_i) and
M is mean (average).

Subject 1	Subject 2	Subject 3	Subject 4	Total	Avg
56	84	68	29	237	59.25
94	73	31	96	294	73.5
41	63	36	90	230	57.5
99	9	18	17	143	35.75
62	3	65	75	205	51.25
40	96	53	23	212	53
81	15	27	30	153	38.25
21	70	100	22	213	53.25
88	50	13	12	163	40.75
48	54	52	78	232	58
64	71	67	25	227	56.75
16	93	46	72	227	56.75

Average per subject:

59.16667	56.75	48	47.41667