BOUMERDES UNIVERSITY
Institute of Electrical and Electronics Engineering
I.G.E.E (ex-INELEC)

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Laboratory Experiment 2:
C Programming--EE122 (Arrays (1D)

Exercise1:

Write a program that asks the user to type *n* float values of a 1D-array and computes:

- The average,
- The maximum value,
- The minimum value.

Exercise2:

Given a polynomial of degree *n* defined as follow:

$$\boldsymbol{f(x) = a_0 + a_1 x + a_2 x^2 + a_{n-1} x^{n-1} + \cdots \ldots \ldots a_n x^n}$$

Write the associated C code program to compute *f(x)* by assuming *n<50*. The user will be asked to input the degree of polynomial as well as the coefficients a_i. The coefficients will be stored in an array.

Exercise 3:

Write a C program which calculates the sum and the dot product of 2 arrays (vectors) by using functions.

Example of using a sum of 2 Vectors:

$$\begin{pmatrix} \mathbf{2} \\ \mathbf{3} \\ \mathbf{4} \end{pmatrix} + \begin{pmatrix} \mathbf{1} \\ \mathbf{2} \\ \mathbf{3} \end{pmatrix} = \begin{pmatrix} \mathbf{3} \\ \mathbf{5} \\ \mathbf{7} \end{pmatrix}$$

Example of using dot product of 2 Vectors:

The function **dotProduct** returns the scalar product of the two vectors.

$$\begin{pmatrix} \mathbf{2} \\ \mathbf{3} \\ \mathbf{4} \end{pmatrix} \times \begin{pmatrix} \mathbf{1} \\ \mathbf{2} \\ \mathbf{3} \end{pmatrix} = (\mathbf{2} * \mathbf{1}) + (\mathbf{3} * \mathbf{2}) + (\mathbf{4} * \mathbf{3}) = \mathbf{20}$$