

- 7.3 Write a program to find the average and standard deviation of a set of input positive real numbers. The input data are stored in an input file “Infile7-3.dat”. Reading is terminated when the end of the input file is reached. Ignore zero or negative numbers and determine the average and standard deviation of the numbers by using the following formulas.

$$\text{Average} = \frac{X_1 + X_2 + X_3 + \dots + X_n}{n}$$

$$\text{Standard deviation} = \sqrt{\frac{X_1^2 + X_2^2 + X_3^2 + \dots + X_n^2}{n} - \text{Average}^2}$$

Data file “InFile7-3.dat” :

12.5 -10 36.4 25.4 58.9 15.6 -3.1 52.4 100

Sample running :

The program reads a list of positive real numbers until the end of file. Non-positive number are ignored. The program will find the average and standard deviation of this list of positive numbers.

Data input starts :

The average is 43.03

The standard deviation is 28.35

End of Program

Output file :

The average is 43.03
The standard deviation is 28.35