Abstract: Traditional statistical analysis starts with computing the basic statistical characteristics such as the population mean E, population variance V, covariance and correlation. In computing these characteristics, it is usually assumed that the corresponding data values are known exactly. In real life there are many situations in which a more complete information can be achieved by describing a set of statistical units in terms of interval data. For example, daily temperatures registered as minimum and maximum values offer a more realistic view on the weather conditions variations with respect to the simple average values. In environmental analysis, we observe a pollution level $x(t)$ in a lake at different moments of time t, and we would like to estimate standard statistical characteristics such as mean, variance and correlation with other measurements. Another example can be given by financial series. The minimum and the maximum transaction prices recorded daily for a set of stocks represent a more relevant information for experts in order to evaluate the stocks tendency and volatility in the same day. We must therefore modify the existing statistical algorithms to process such interval data. In this work we will analyze algorithms and their modifications for computing various statistics under interval uncertainty and their computational complexity in case of computing population mean, population variance, covariance and correlation.