

**Tutorial 01****«Probabilités et Statistique Descriptive»**

**Exercise 1 :** Specify the nature of the following characters:

Diameter of a wheel, number of rooms in an apartment, blood group, student height, age, family situation, numbers of defective parts, car type, eye color, weight, student grades.

**Exercise 2 :** In each one of the following studies, define the population and the variable of interest and Identify the type of data collected.

- 1) An insurance company conducted a study to determine the percentage of cardiologists who had been sued for malpractice in the previous three years. The sample was randomly chosen from a national directory of doctors.
- 2) A postal worker counts the number of complaint letters received by the Postal Service in a given day.
- 3) An usher records the number of unoccupied seats in a movie theater during each viewing of a film.
- 4) An assembly line is operating satisfactorily if fewer than 4% of the phones produced per day are defective. To check the quality of a day's production, the company randomly samples 10 phones from a day's production to test for defects.

**Exercise 3:** A study concerning the number of workers in 35 small businesses gave the following statistical series  
**4 9 1 3 3 5 2 4 4 1 13 10 5 5 9 2 5 6 4 5 5 13 10 3 5 9 5 8 8 4 5 5 10 4 10.**

1. Precise the population and the character with its type in this study.
2. Construct the statistical table for this series and provide an adequate graphical representation.
3. Complete the table with the cumulative relative frequency.
4. Determine the mode and the median.
5. Calculate the mean, the variance and the standard deviation of this series.

**Exercise 4:** The marks obtained by 100 students in an exam are as follows:

marks	[0, 2[	[2, 4[	[4, 6[	[6, 8[	[8, 10[	[10, 12[	[12, 14[	[14, 16[	[16, 18[	[18, 20[
Number of students	3	2	15	14	20	23	12	5	5	1

Same questions as in the first exercise.

**Exercise 5:** We measured the temperature (in °C) recorded each day in a given city throughout the month of January and we obtained the following results:

12.5 – 14.2 – 15.6 – 14.5 – 13.3 – 11.9 – 10.7 – 10.4 – 9.9 – 9.4 – 10.8 – 14.9 – 15.6 – 15.8 – 14.3 – 13.6 – 12.9 – 13.6 – 16.2 – 16.8 – 17.6 – 17 – 15.3 – 14.2 – 12.6 – 11.8 – 11.4 – 10.2 – 10.0 – 9.1 – 8.8.

1. Summarize the data in a frequency table.
2. what is the average temperature in the month of January.
3. Determine the measures of spread.

