University Aboubekr Belkaid,Tlemcen — L1 Computer Science
Sciences Faculty — Control Test
Computer Science Departement — Proba-Stat

Exercise 1 *A hotel has 120 rooms. The table summarises information about the number of rooms occupied each day for a period of 200 days.(dans un hotel il y a 120 chambres, le tableau ci dessous résume les données sur le nombre de chambres occupées sur une période de 200 jours)*

Number of rooms occupied	$[0, 20[$	$[20, 40[$	$[40, 60[$	$[60, 80[$	$[80, 100[$	$[100, 120]$
Frequency	*10*	*32*	*62*	*50*	*28*	*18*

1) Determine the population, variable X, sample size, range.
2) Construct a frequency table displaying class, c_i (the class mark), n_i, , f_i, f_i^{cum}, $n_i * c_i$, $n_i * c_i^2$.
3) Estimate the average of rooms occupied $\bar{x}$, variance, standard deviation.
4) What is the number of rooms the most occupied during the 200 days?
5) Write the expression of the CDF F_X on the interval $[20, 40[$ and deduce the number of days when more than 30 rooms were occupied.

Exercise 2 *The daily journal times for 80 bank staff to get to work (le temps mis par les 80 employés d'une banque pour se rendre au travail) are given in the following table*

Times (minutes)	$[0, 5[$	$[5, 10[$	$[10, 15[$	$[15, 20[$	$[20, 25[$	$[25, 30[$	$[30, 35]$
n_i^{cum} *(cumulative frequency)*	*3*	*11*	*24*	*56*	*68*	*76*	*80*

1) Draw the cumulative graph.
2) How many staff take between 10 and 30 minutes to get to work?
3) Complete the frequency table below

class	c_i	n_i	f_i	$n_i * c_i$

4) Calculate the mean, mode, median.