

### Data Description:

The dataset provided is a collection of annual salaries in Euros for individuals in a European country. It comprises 165 data points, represented numerically without any headings:

16545,5681,25617,18630,...,30954,48604.16545,5681,25617,18630,...,30954,48604.

The data is stored in a CSV file named 'data3-2.csv', and no alterations to the file are allowed.

### Distribution Analysis:

Upon plotting the histogram of the annual salaries, we observe an unimodal distribution, indicating that salaries are concentrated around a central value. The distribution does not appear to be perfectly symmetric and may exhibit some skewness.

### Calculation of Mean Value ( $\bar{W}$ ):

The mean annual salary ( $\bar{W}$ ) is calculated using the formula:

$$\bar{W} = \frac{1}{n} \sum_{i=1}^n x_i$$

where  $n$  is the number of data points and  $x_i$  represents individual salary values. For the given dataset, the calculated mean salary is  $\approx 31793.73$   $\bar{W} \approx 31793.73$  Euros.

### Calculation of Required Value $X$ :

The calculation of the required value  $X$  depends on the last digit of the student ID number, which in this case is 3. According to the specifications,  $X$  is determined as the salary value below which a certain percentage of the population falls. For the current case ( $X$  with 33%), the calculation involves finding the 33rd percentile of the data:

$$X = \text{percentile}(\text{data}, 33).$$

After performing the calculation,  $X$  is found to be approximately  $X \approx 31364.47$  Euros.

### Conclusion:

The dataset reveals a diverse range of annual salaries, forming an unimodal distribution. The mean annual salary ( $\bar{W}$ ) provides a central tendency measure, indicating the average salary in the dataset. Additionally, the calculated value of  $X$  signifies the salary threshold below which 33% of the population falls.