

How do you make a histogram from a frequency table?

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A histogram is a visual representation of a frequency table that displays the distribution of numerical data. To create a histogram from a frequency table, first arrange the data in ascending order and then plot the frequency of each value on the x-axis. The height of each bar on the histogram represents the frequency of that value. It is important to ensure that the bars are evenly spaced and have equal width for accurate representation of the data. Additionally, labels for the x-axis and y-axis should be included to provide context for the data being displayed. The resulting histogram provides a clear visual understanding of the distribution of the data and can be used to identify patterns or outliers.

Make a Histogram from a Frequency Table

A frequency table is a table that shows how frequently values occur in specific ranges of a dataset.

A histogram is a type of chart that allows us to visualize the values in a frequency table.

The following step-by-step example shows how to make a histogram from a frequency table.

Step 1: Create the Frequency Table

Suppose we collect the following data that shows the exam scores of 20 students in some class:

Scores: 50, 58, 62, 65, 70, 71, 72, 74, 74, 78, 81, 82, 82, 85, 87, 88, 89, 92, 94, 96

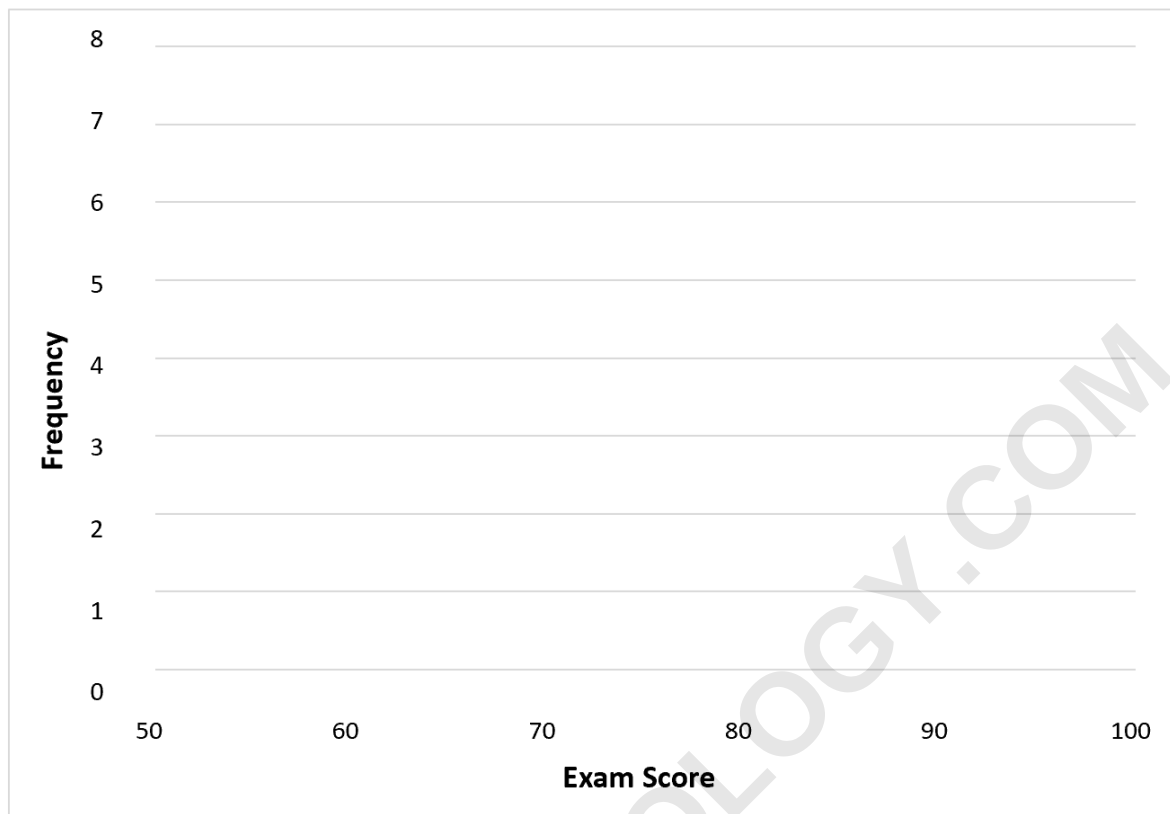
We can create the following frequency table using a bin

range of 10 to summarize the frequency of each range of scores:

Score	Frequency
50-59	2
60-69	2
70-79	6
80-89	7
90-99	3

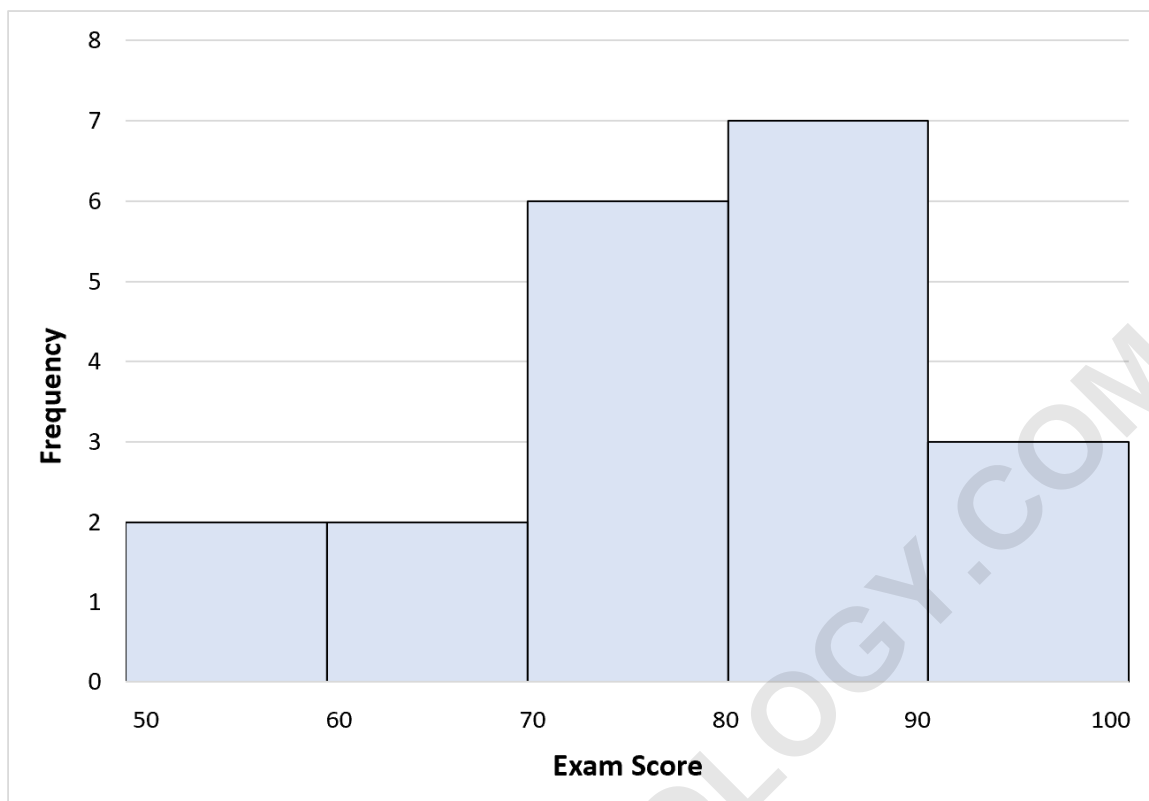
Step 2: Define the X-Axis of the Histogram

Next, we'll create the x-axis of the histogram so that it ranges from the lowest value in the lowest bin to the highest value in the highest bin, by increments of 10:



Step 3: Add the Bars to the Histogram

Lastly, we'll add the bars to the histogram to represent the frequencies in each bin range:



The x-axis of the histogram displays bins of data values and the y-axis tells us how many observations in a dataset fall in each bin.

For example, we can see:

A total of 2 students scored between 50 and 59. A total of 2 students scored between 60 and 69. A total of 6 students scored between 70 and 79. A total of 7 students scored between 80 and 89. A total of 3 students scored between 90 and 99.

For example, how many students scored less than 70 on the exam?

To answer this, we can simply add up the total values in the first two bars of the histogram: $2 + 2 = 4$.

A total of 4 students scored less than 70.

Or, perhaps we want to know how many students scored 80 or higher on the exam?

To answer this, we can simply add up the total values in the last two bars of the histogram: $7 + 3 = 10$.

A total of 10 students scored 80 or higher.

We can answer even more questions like these ones by simply looking at the bars in the histogram.

The following tutorials provide additional information about histograms: