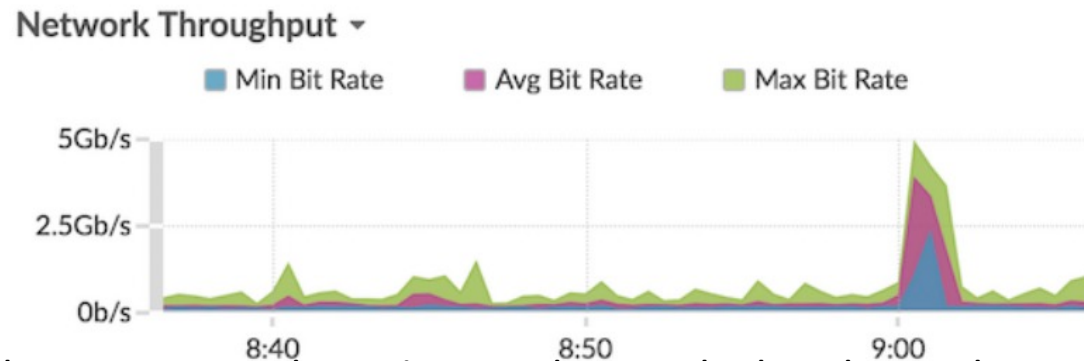# Charts (descriptive)
Area chart

Metric data is displayed as data points over time connected by a line, with the area between the line and the x-axis filled in with color. If your chart contains more than one metric, data for each metric is displayed as an individual line, or a series. Each series is stacked together to illustrate the cumulative value of the data.

-This chart supports detection markers , which indicate detections associated with chart data.

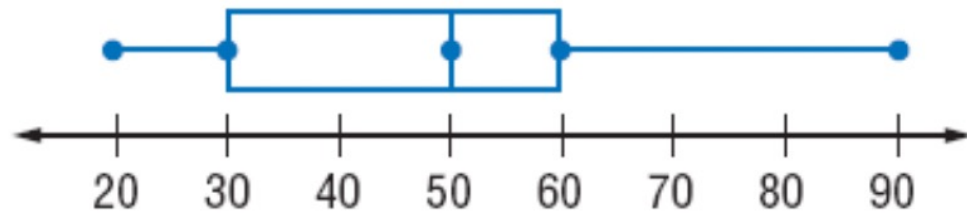-Machine learning detections require a connection to ExtraHop Cloud Services .

Depth to ExtraHop :
https://docs.extrahop.com/8.9/eh-cloud-services/#connect-to-extrahop-cloud-services
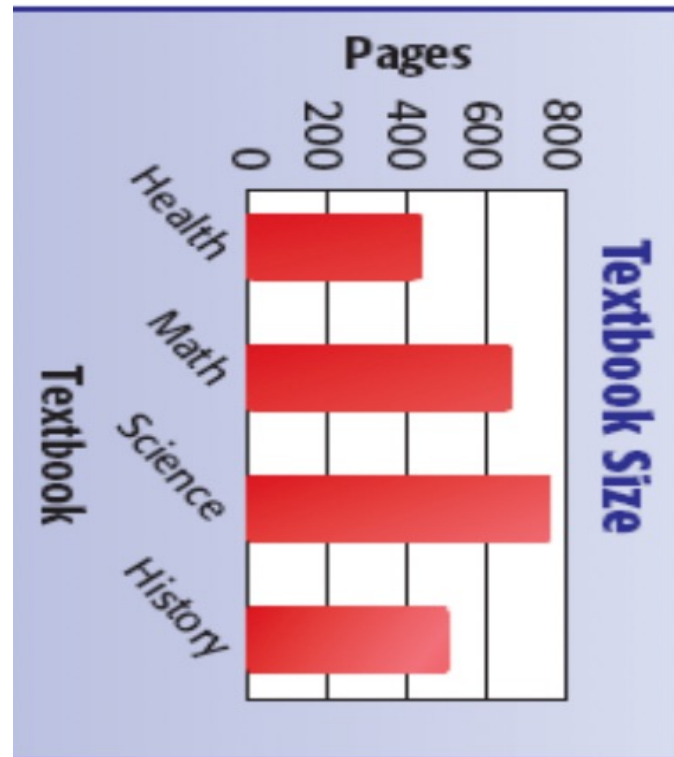
Box Plot chart

A box plot is a chart that summarizes data by dividing it into four parts (quartiles).

Box plot shows the spread (range) and median (middle) of the data.

Bar chart

The total value of metric data is displayed as horizontal bars. Select the bar chart when you want to compare the data for more than one metric

Heatmap chart

The heatmap chart displays a distribution of metric data over time, where color represents a concentration of data. You can only select a dataset metric to display in the chart, such as server processing time or round trip time.
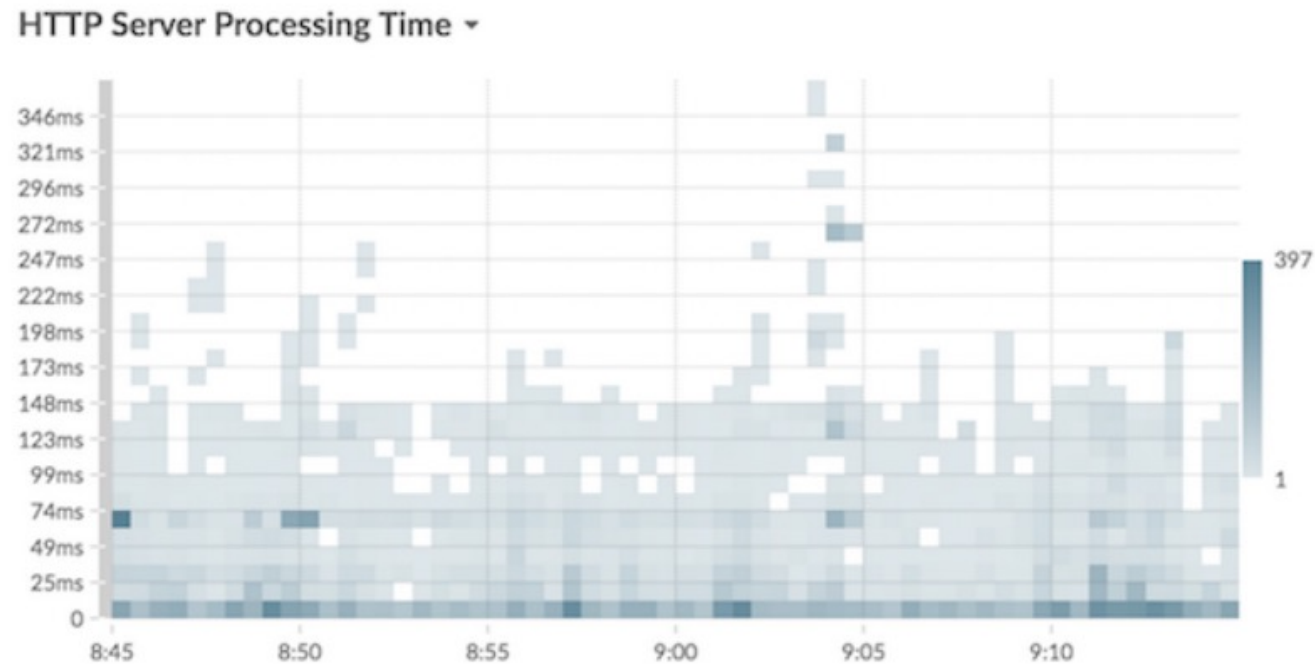
Line chart

Metric data is displayed as data points over time that are connected in a line. If chart contains more than one metric, data for each metric is displayed as an individual line or as a series.
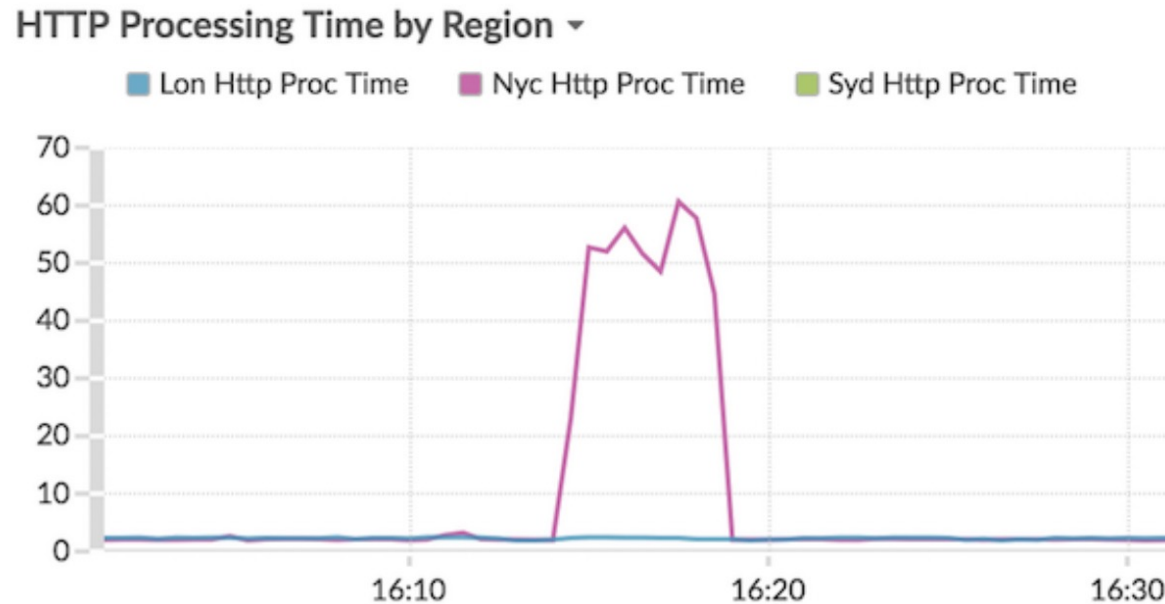
Histogram

A histogram is **a graphical display of data using bars of different heights**. In a histogram, each bar groups numbers into ranges. Taller bars show that more data falls in that range. A histogram displays the shape and spread of continuous sample data.

The histogram is a popular graphing tool. It is used **to summarize discrete or continuous data that are measured on an interval scale**. It is often used to illustrate the major features of the distribution of the data in a convenient form.
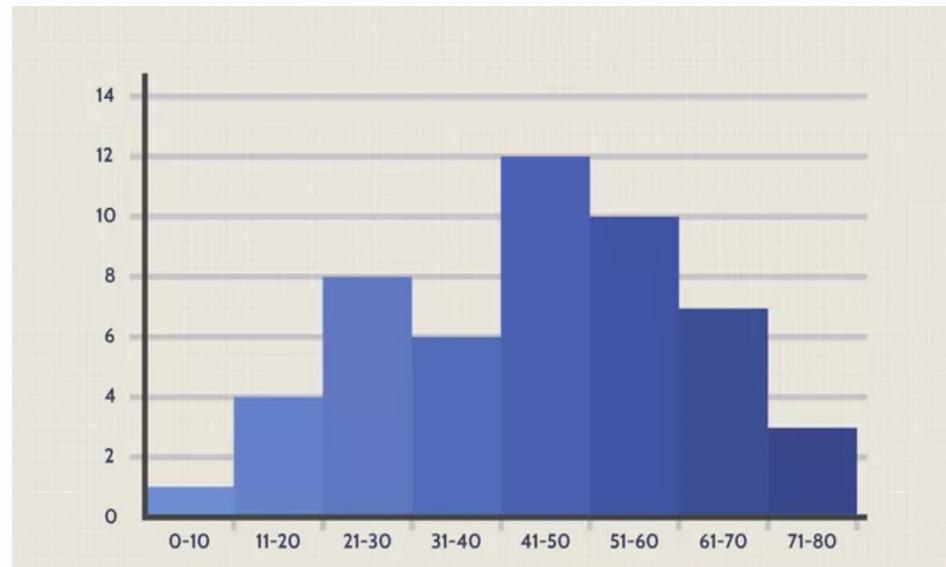
Frequency distribution

A frequency distribution shows the frequency of repeated items in a graphical form or tabular form. It gives a visual display of the frequency of items or shows the number of times they occurred.

Frequency distribution is used to organize the collected data in table form. The data could be marks scored by students, temperatures of different towns, points scored in a volleyball match, etc. After data collection, we have to show data in a meaningful manner for better understanding. Organize the data in such a way that all its features are summarized in a table. This is known as frequency distribution.

Let's consider an example to understand this better. The following are the scores of 10 students in the G.K. quiz released by Mr. Chris 15, 17, 20, 15, 20, 17, 17, 14, 14, 20. Let's represent this data in frequency distribution and find out the number of students who got the same marks.

Quiz Marks	No. of Students
15	2
17	3
20	3
14	2

Frequency Distribution Graphs

- Bar graphs

- Histogram

- Pie chart

- Frequency Polygon

Types of Frequency Distribution

- **Ungrouped frequency distribution:** It shows the frequency of an item in each separate data value rather than groups of data values.

- **Grouped frequency distribution:** In this type, the data is arranged and separated into groups called class intervals. The frequency of data belonging to each class interval is noted in a frequency distribution table. The grouped frequency table shows the distribution of frequencies in class intervals.

- **Cumulative frequency:** The running total of frequencies starting from the first frequency till the end frequency is the cumulative frequency.

A table that displays the cumulative frequencies that are distributed over various classes is called a cumulative frequency distribution or cumulative frequency table. There are two types of cumulative frequency **- lesser than type and greater than type.** Cumulative frequency is used to know the number of observations that lie above (or below) a particular frequency in a given data set.

Example 1: Robert is the sales manager of a toy company. On checking his quarterly sales record, he can observe that by the month of April, a total of 83 toy cars were sold.

Month	Number of toy cars sold (Frequency)	Total number of toy cars sold (Cumulative Frequency)
January	20	20
February	30	20 + 30 = 50
March	15	50 + 15 = 65
April	18	65 + 18 = 83

Relative Frequency distribution: It tells the proportion of the total number of observations associated with each category.

- The word 'relative' is used to indicate that an event is being considered in relation or in proportion to something else.

- Frequency is a way to measure how often a particular event occurs. Relative frequency, on the other hand, is a way to measure how often a particular event occurs against total occurrences.

Example:

Modes of transport to School

| 10 Bus | 8 Car |
| 2 Bike |

Total Students = 20
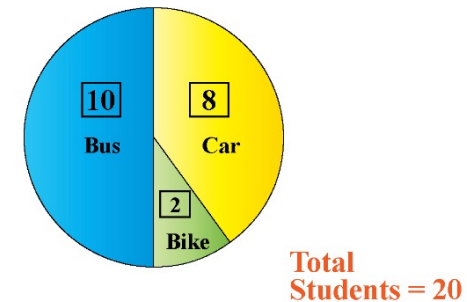
If 8 out of 20 students travel to school by car, then the frequency for traveling to school by car would be 8

The relative frequency of the same would be:

$$\frac{8}{20} = 40\%$$