

Data Visualization

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What is Data Visualization?

What is Data Visualization?

- Graphical representation of data using charts and plots.
- Easily communicate information making it easy to understand.

Types of Data Visualization

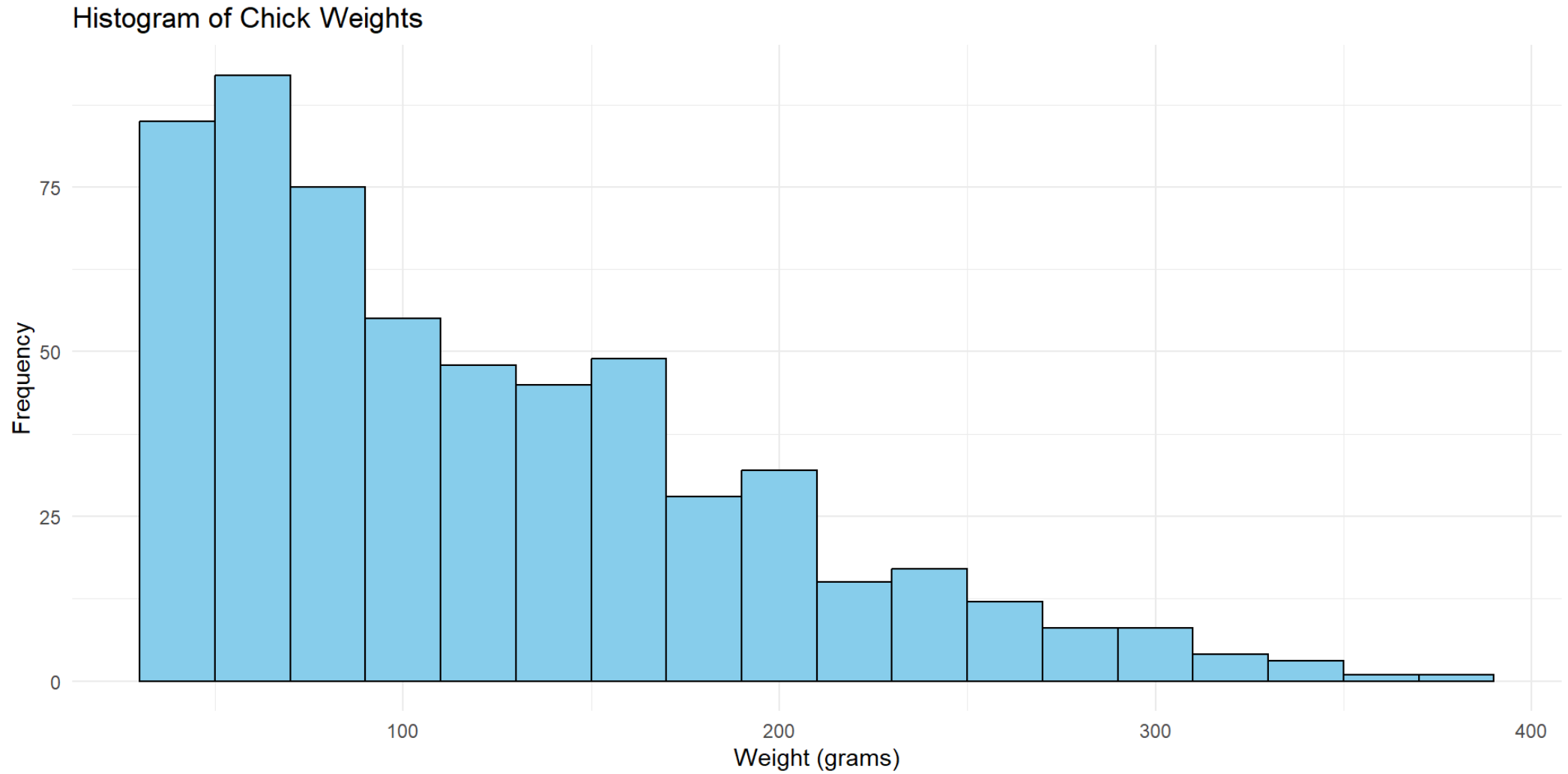
- Histogram
- Bar Chart
- Box plot
- Pie Chart
- Scatter plot
- Line Graph
- Frequency Polygon

Histogram

Histogram

- Used with discrete or continuous data
- Shows the underlying distribution of a data
- The data is split into intervals called *bins*
- Each bin contains the number of occurrences of scores in the data set contained within that bin.

Histogram

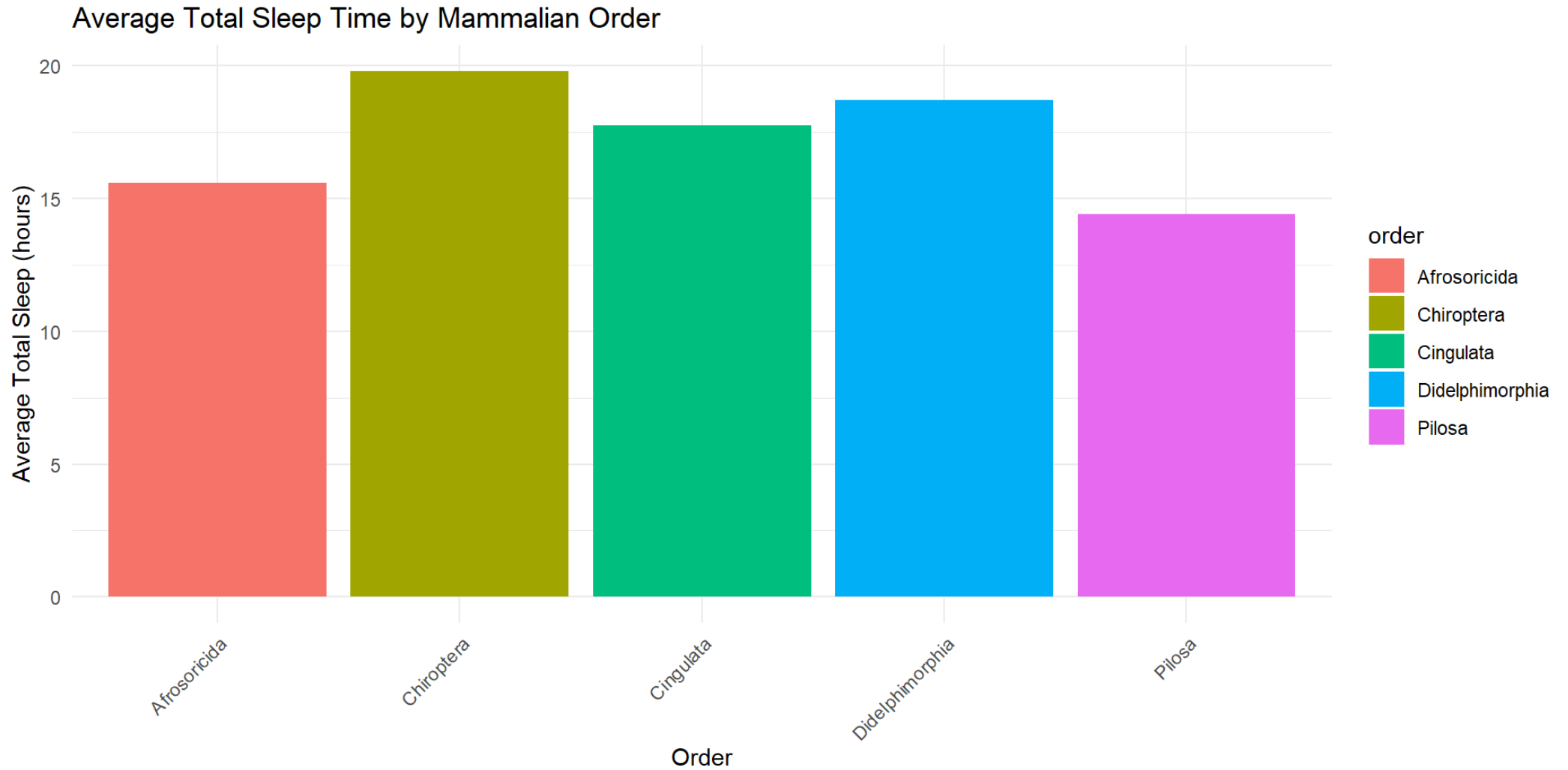


Bar Chart

Bar Chart

- Used with categorical data
- Bars are either plotted horizontally or vertically
- Compares various categories

Bar Chart



Difference between histogram and bar chart

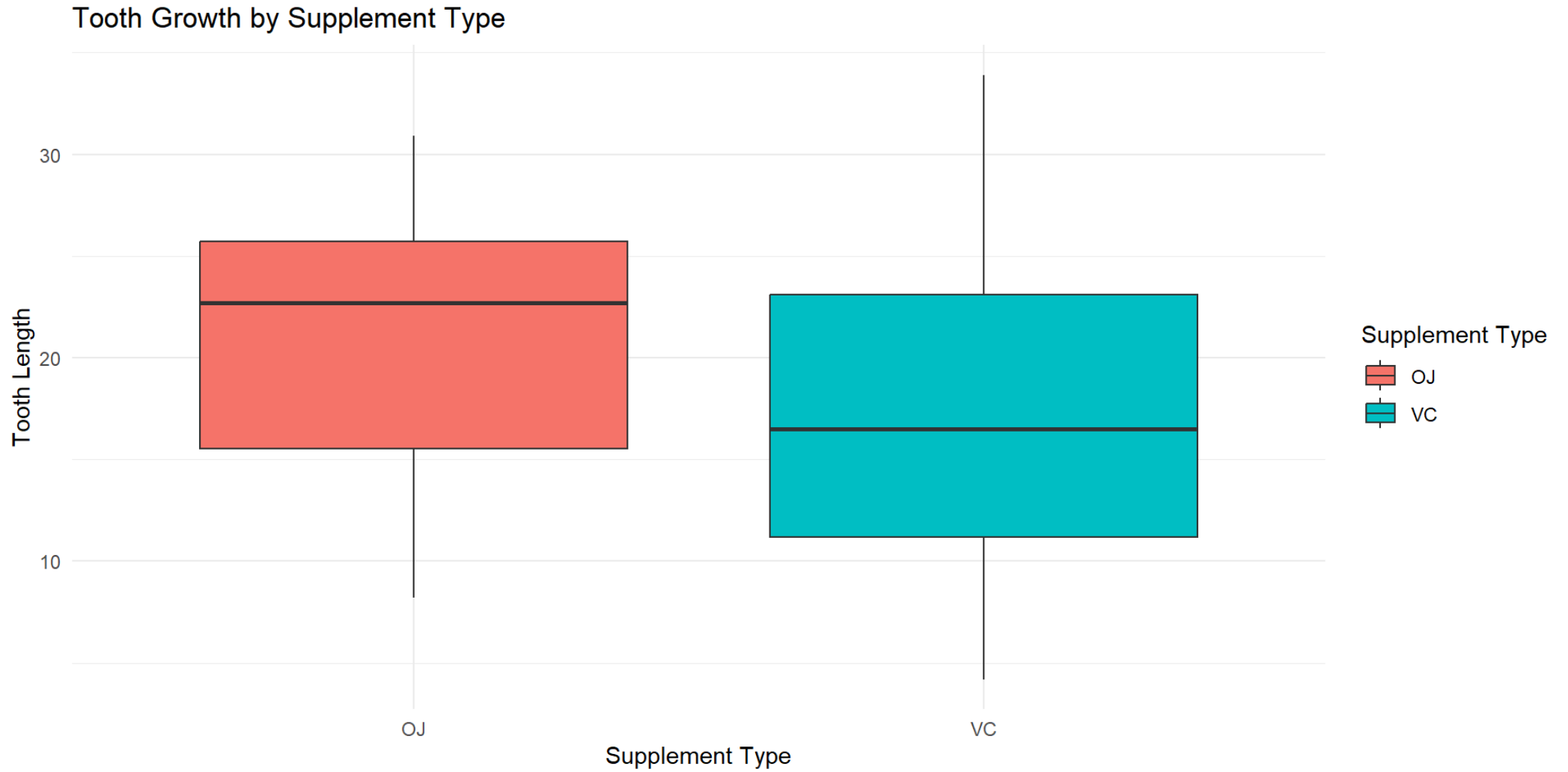
Feature	Histogram	Bar Chart
Data type	Used with numerical data	Used with categorical data
Purpose	Represents the distribution of numerical data	Compares different categories or groups
Bars	Touch each other (no gaps)	Separated by spaces

Box Plot

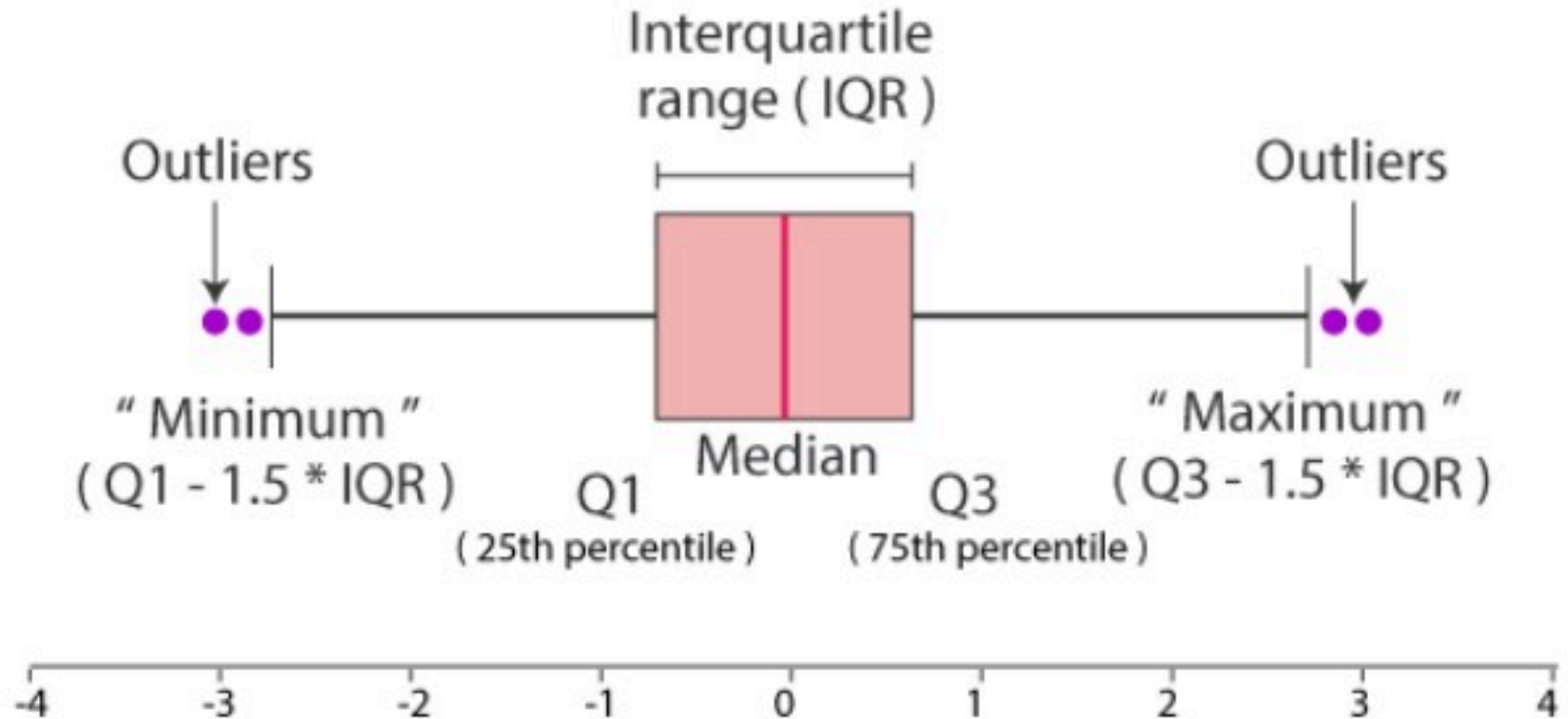
Box plot

- Also known as box and whisker plot
- Used to measure the measures of central tendency in a data
- Used with numerical data
- Divides a data into 4 parts

Box Plot



Box Plot



Different parts of boxplot

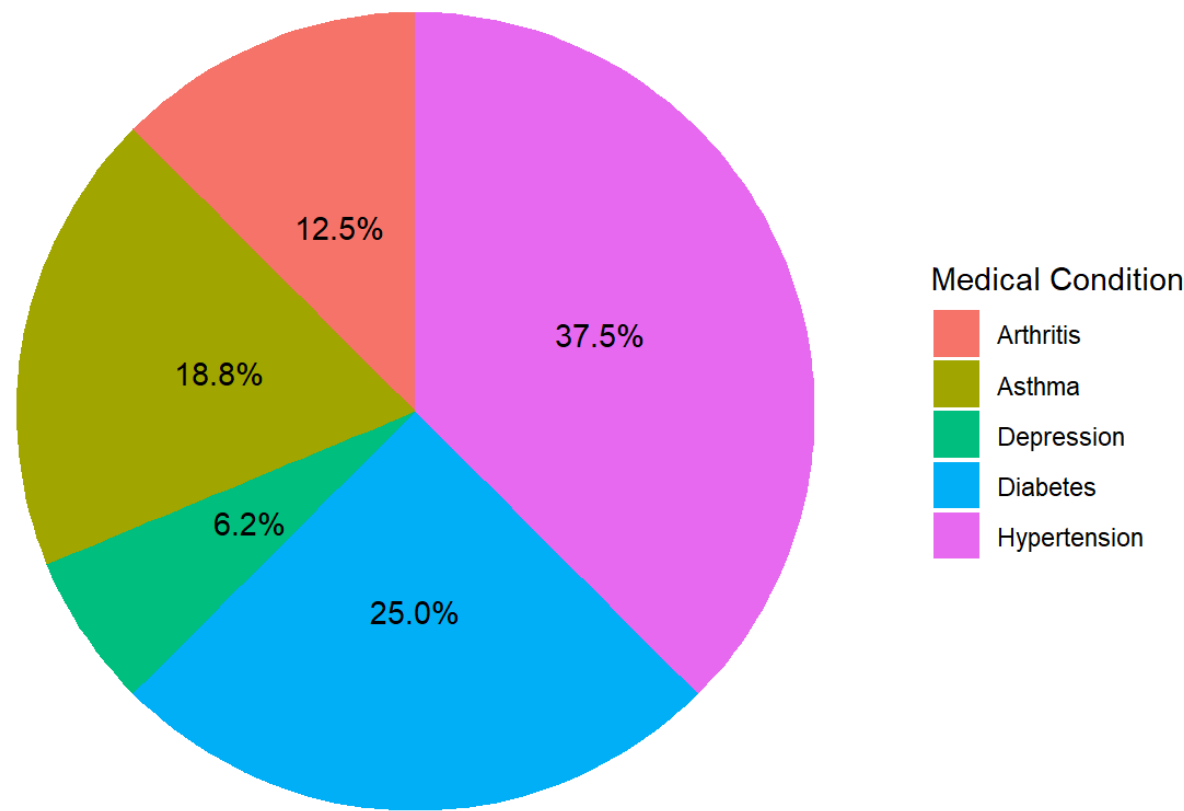
Pie Chart

Pie Chart

- Circular graph divided into slices
- Used mostly with categorical data
- Each slice represents the frequency of a particular category in percentage
- The entire pie represents 100%

Pie Chart

Distribution of Patient Diagnoses

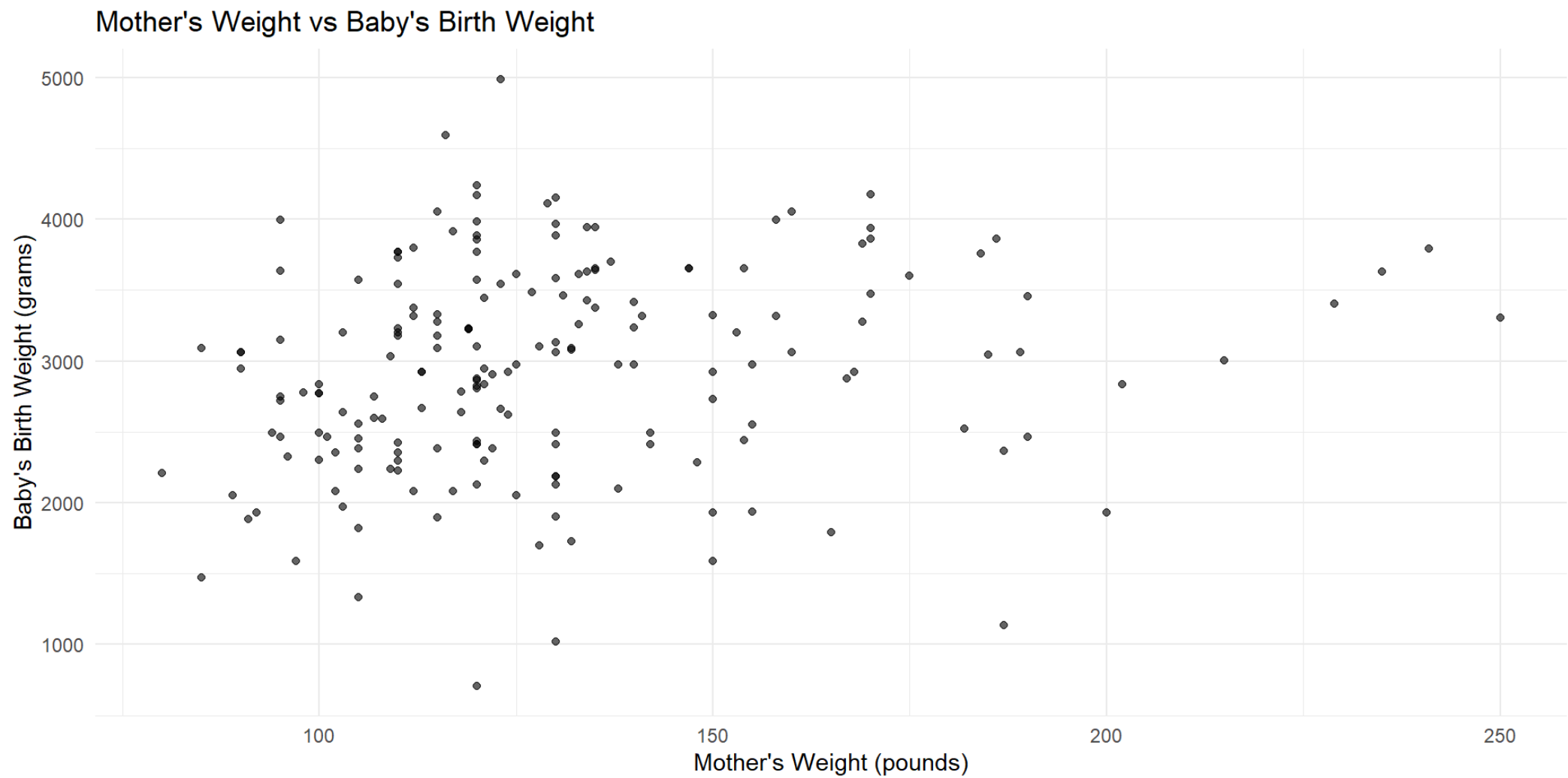


Scatter plot

Scatter Plot

- Can be used to compare two continuous variables
- Used in also determining the relationship between two variables

Scatter plot

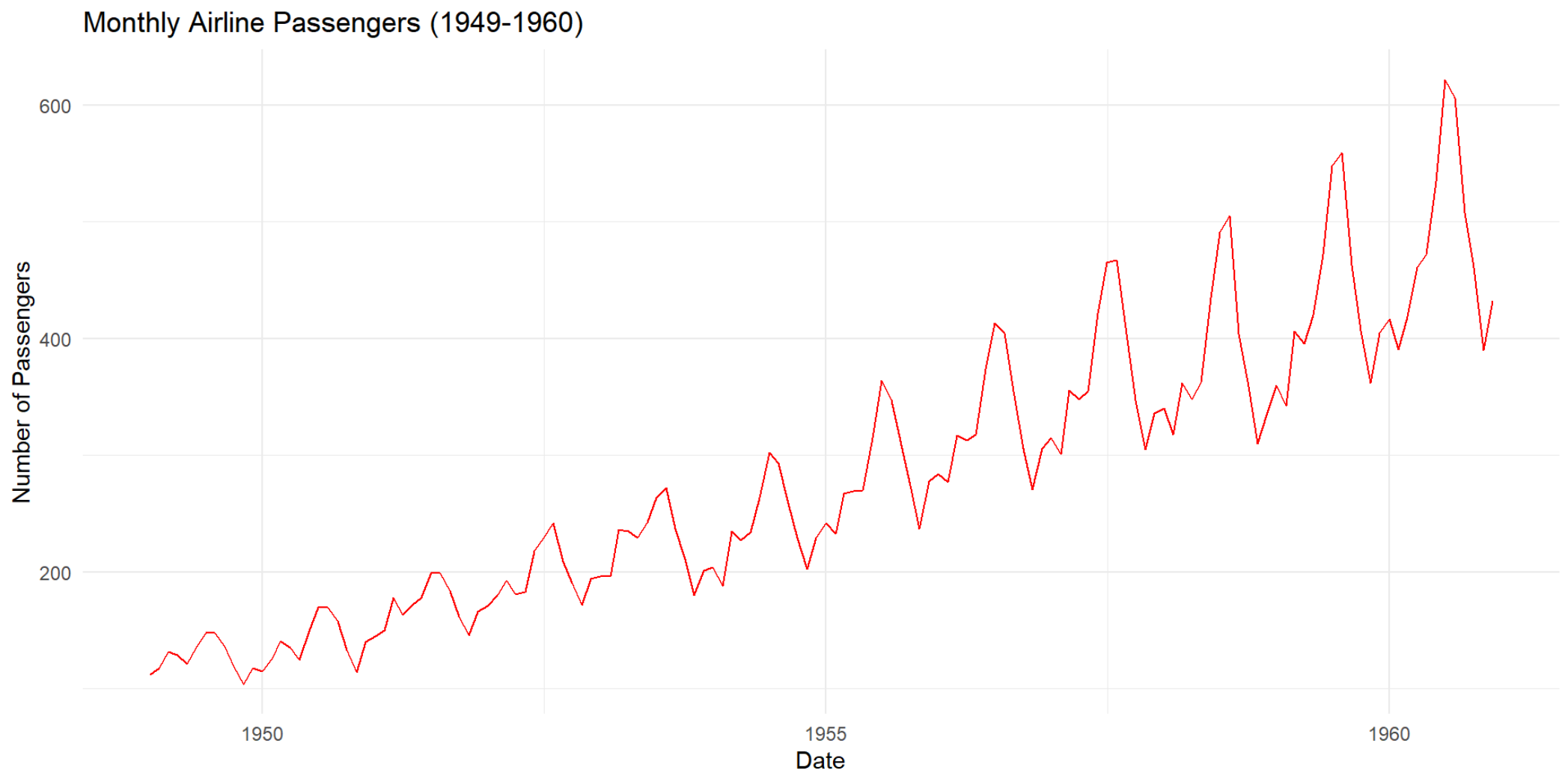


Line Graph

Line Graph

- Represents change in a variable with respect to time.
- For example, change in the population of a city in the past two decades.
- Used to represent quantitative data by plotting each variable value with respect to the time of occurrence.

Line Graph

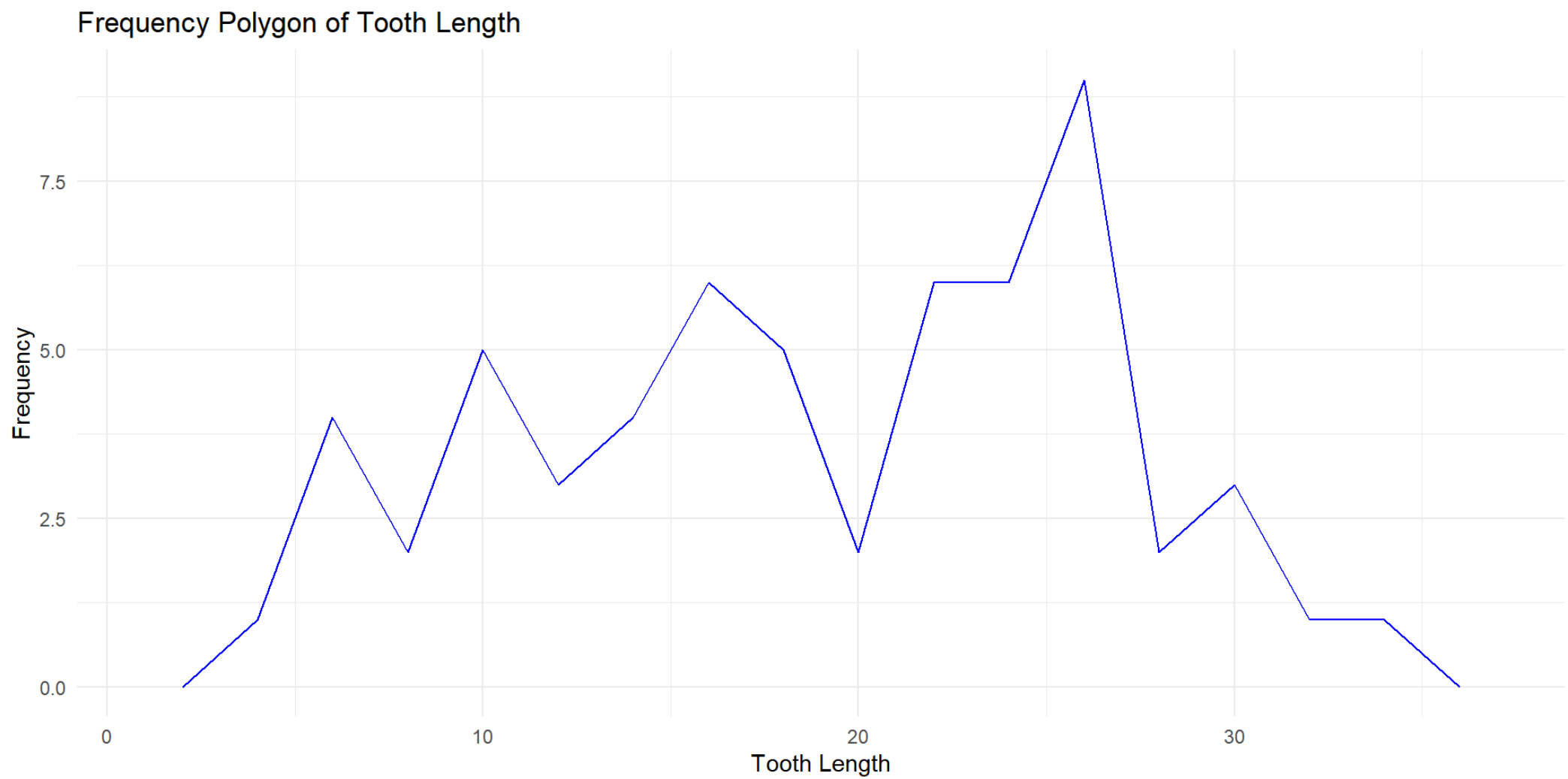


Frequency Polygon

Frequency Polygon

- Similar to a histogram
- Used to visualize the underlying distribution of a continuous variable

Frequency Polygon



Frequency polygon from histogram

