Summary of Statistics Onramp

**Import and Prepare Data**

| **Function** | **Description** |
| --- | --- |
| [readtable](https://www.mathworks.com/help/matlab/ref/readtable.html) | Create a table from a file. |
| [categorical](https://www.mathworks.com/help/matlab/ref/categorical.html) | Create a categorical variable. |

**Visualizing Data**

| **Function** | **Example** | **Description** |
| --- | --- | --- |
| [scatter](https://www.mathworks.com/help/matlab/ref/scatter.html) | scatter(x,y) | Create a scatter plot with circular markers at the locations specified by the vectors x and y. |
| [gscatter](https://www.mathworks.com/help/stats/gscatter.html) | gscatter(x,y,g) | Create a scatter plot of x and y, grouped by g |
| [histogram](https://www.mathworks.com/help/matlab/ref/matlab.graphics.chart.primitive.histogram.html) | histogram(x,"BinWidth",0.5) | Create a histogram of the data in x using 0.5 as the bin width. |
| [boxchart](https://www.mathworks.com/help/matlab/ref/boxchart.html) | boxchart(xgroupdata,ydata) | Create a box plot of y data according to x groups. |
| [scatterhistogram](https://www.mathworks.com/help/matlab/ref/scatterhistogram.html) | scatterhistogram(x,y) | Create a scatter plot of x and y with histograms. |

**Descriptive Statistics**

**Measures of Center**

| **Function** | **Description** |
| --- | --- |
| [mean](https://www.mathworks.com/help/matlab/ref/mean.html) | Average of the data. |
| [median](https://www.mathworks.com/help/matlab/ref/median.html) | Middle point of the data. |

**Measures of Spread**

| **Function** | **Description** |
| --- | --- |
| [std](https://www.mathworks.com/help/matlab/ref/std.html) | Standard deviation of the data. |
| [range](https://www.mathworks.com/help/stats/range.html) | Range of the data, difference between maximum and minimum value. |
| [iqr](https://www.mathworks.com/help/matlab/ref/iqr.html) | Interquartile range, or IQR, range of the middle 50% of the data. |

**Measures of Shape**

| **Function** | **Description** |
| --- | --- |
| [skewness](https://www.mathworks.com/help/stats/skewness.html) | Skewness of the data. |
| [kurtosis](https://www.mathworks.com/help/stats/kurtosis.html) | Tailedness of the data. |

**Normal Distributions**

| **Function** | **Description** |
| --- | --- |
| [randn](https://www.mathworks.com/help/matlab/ref/randn.html) | Generate random numbers from the standard normal distribution. |
| [normrnd](https://www.mathworks.com/help/stats/normrnd.html) | Generate random numbers from a normal distribution with known mean and standard deviation. |
| [normpdf](https://www.mathworks.com/help/stats/normpdf.html) | Returns the probability density function from the normal distribution evaluated at x. |
| [normcdf](https://www.mathworks.com/help/stats/normcdf.html) | Returns the cumulative density function (cdf) from the normal distribution evaluated at x. |
| [fitdist](https://www.mathworks.com/help/stats/fitdist.html) | Fit a distribution to data. |
| [qqplot](https://www.mathworks.com/help/stats/qqplot.html) | Displays a quantile-quantile plot. |

**Hypothesis Testing**

| **Function** | **Description** |
| --- | --- |
| [ttest2](https://www.mathworks.com/help/stats/ttest2.html) | Test for the difference in mean between two populations. |
| [jbtest](https://www.mathworks.com/help/stats/jbtest.html) | Jarque-Bera test for normality. |
| [lillietest](https://www.mathworks.com/help/stats/lillietest.html) | Lilliefors test for normality. |

Certificate Link

<https://matlabacademy.mathworks.com/progress/share/certificate.html?id=0b6aab26-79aa-4dff-8e15-e848e69eb8d3&>