R Plot Guide with Examples and Illustrations
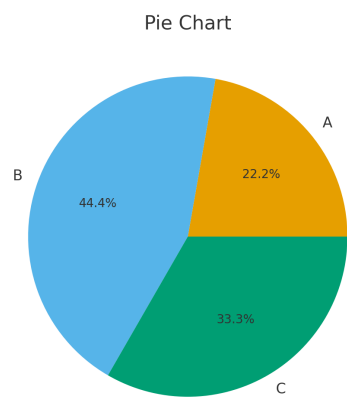
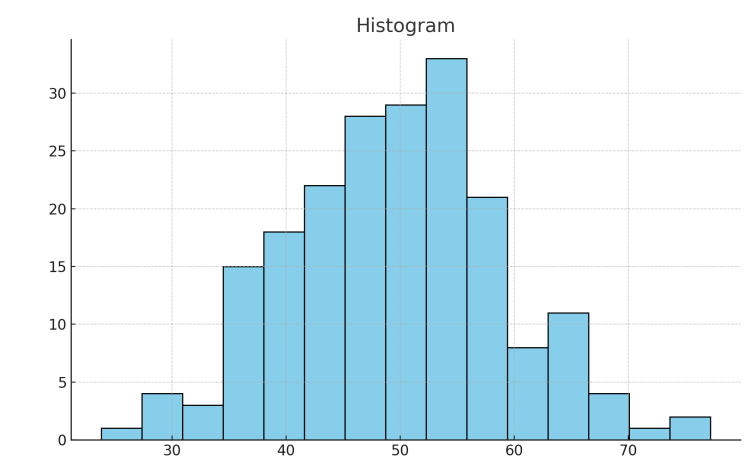| Plot Type	Best For	Key R Function(s)	Example
Bar Plot	Categorical (counts/frequencies)	barplot(), ggplot2::geom_bar()	Number of males vs females in a dataset
Pie Chart	Categorical (proportions)	pie()	Proportion of students by major
Histogram	Continuous (distribution)	hist(), ggplot2::geom_histogram()	Distribution of exam scores
Density Plot	Continuous (distribution, smooth)	density(), ggplot2::geom_density()	Test score distributions for two schools
Boxplot	Continuous vs Categorical	boxplot(), ggplot2::geom_boxplot()	Gene expression in treated vs control
Violin Plot	Continuous vs Categorical	ggplot2::geom_violin()	Height distributions between males and females
Scatter Plot	Continuous vs Continuous	plot(), ggplot2::geom_point()	Relationship between height and weight
Line Plot	Continuous vs Continuous (time/ordered)	plot(type='l'), ggplot2::geom_line()	Heart rate over 10 minutes
Bar Plot w/ Error Bars	Means + error across groups	geom_bar(stat='identity') + geom_errorbar()	Average monthly sales per region
Heatmap	Multivariate (matrix-like)	heatmap(), pheatmap	Gene expression heatmap
Faceted Plot	Comparing groups side by side	ggplot2::facet_wrap(), facet_grid()	Income vs education by gender
3D Plot	Three continuous variables	scatterplot3d, plotly	Car horsepower, weight, and mpg
Survival Curve	Time-to-event analysis	survival::survfit(), survminer::ggsurvplot()	Kaplan-Meier survival curve
Manhattan Plot	GWAS results	qqman::manhattan()	Manhattan plot of GWAS results
Network Graph	Node-relationship data	igraph, ggraph	Social network graph of students

Bar Plot
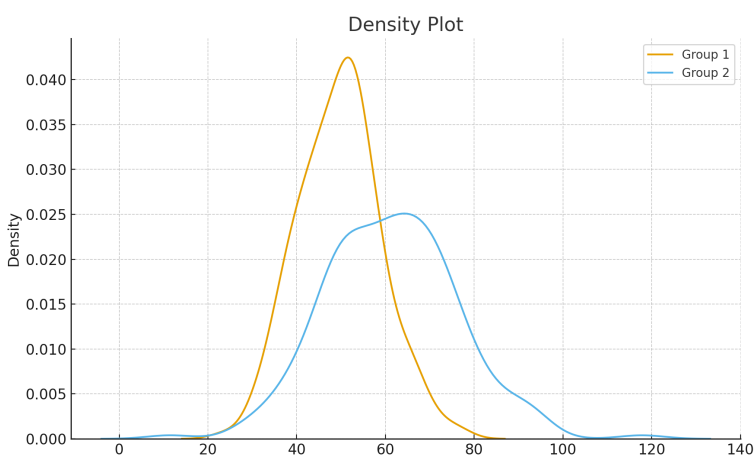

Example of bar plot.

Pie Chart

Example of pie chart.
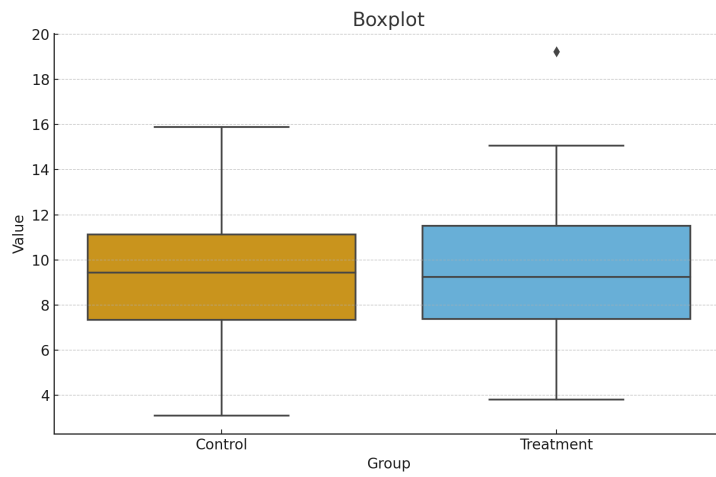
Histogram

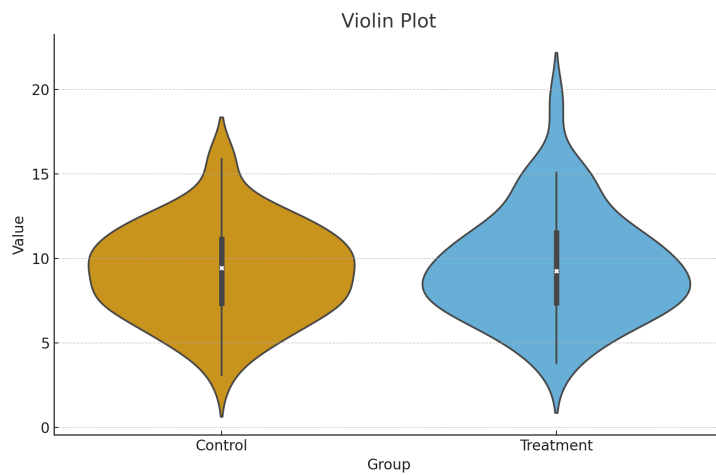Example of histogram.

Density Plot

Example of density plot.
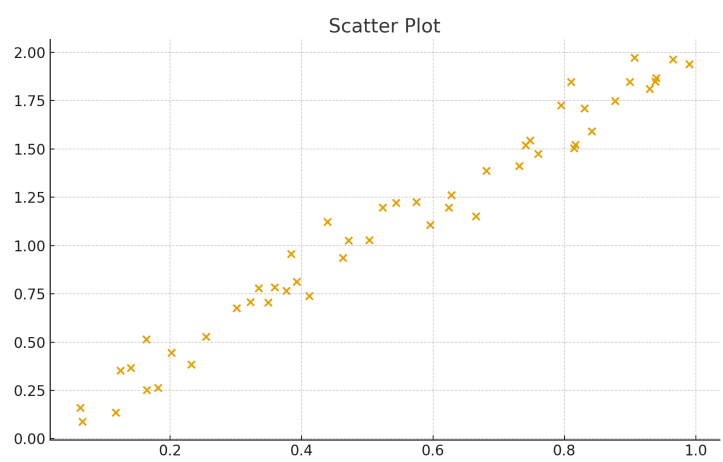
Boxplot

Example of boxplot.

Violin Plot

Example of violin plot.

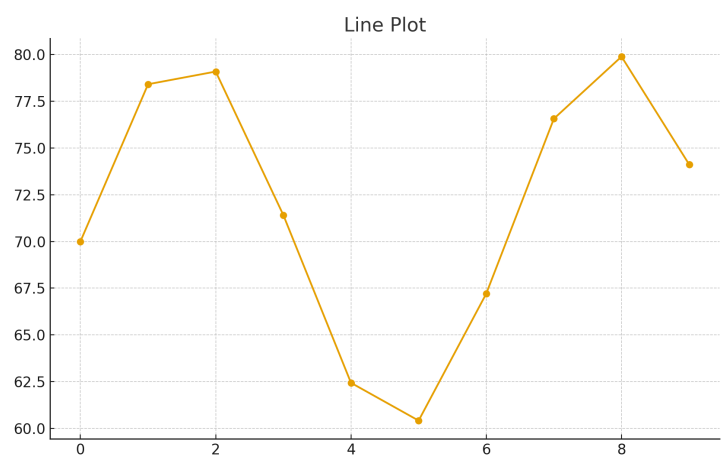## Scatter Plot

Example of scatter plot.

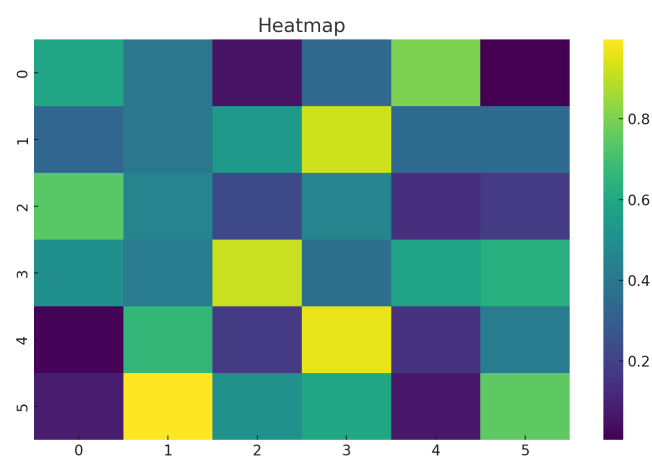## Line Plot

Example of line plot.

Heatmap

Example of heatmap.