



GETTING STARTED

1. Install

In the console:
`install.packages('plotly')`

2. Sign Up & Configure

plot.ly/r/getting-started

3. A Hello World Figure

```
library(plotly)
p <- plot_ly (
  x = rnorm( 1000 ),
  y = rnorm( 1000 ),
  mode = 'markers' )
```

4. Plot the Figure!

In the console, either:

Plot Offline by printing the figure:
`p` OR `print (p)`

Plot and Save in Cloud:
`plotly_POST (p)`

BASIC CHARTS

Line Plots

```
plot_ly (
  x = c( 1, 2, 3 ),
  y = c( 5, 6, 7 ),
  type = 'scatter',
  mode = 'lines' )
```

Bubble Charts

```
plot_ly (
  x = c( 1, 2, 3 ),
  y = c( 5, 6, 7 ),
  type = 'scatter',
  mode = 'markers',
  size = c( 1, 5, 10 ),
  marker = list(
    color = c( 'red', 'blue',
              'green' )))
```

Scatter Plots

```
plot_ly (
  x = c( 1, 2, 3 ),
  y = c( 5, 6, 7 ),
  type = 'scatter',
  mode = 'markers' )
```

Heatmaps

```
plot_ly (
  z = volcano ,
  type = 'heatmap' )
```

Bar Charts

```
plot_ly (
  x = c( 1, 2, 3 ),
  y = c( 5, 6, 7 ),
  type = 'bar',
  mode = 'markers' )
```

Area Plots

```
plot_ly (
  x = c( 1, 2, 3 ),
  y = c( 5, 6, 7 ),
  type = 'scatter',
  mode = 'lines',
  fill = 'tozeroy' )
```

LAYOUT

Legends

```
set.seed( 123 )
x = 1 : 100
y1 = 2*x + rnorm( 100 )
y2 = -2*x + rnorm( 100 )
```

```
plot_ly (
  x = x ,
  y = y1 ,
  type = 'scatter' ) %>%
```

```
add_trace(
  x = x ,
  y = y2 ) %>%
```

```
layout(
  legend =
    list( x = 0.5 ,
          y = 1 ,
          bgcolor = '#F3F3F3' ) )
```

Axes

```
set.seed( 123 )
x = 1 : 100
y1 = 2*x + rnorm( 100 )
y2 = -2*x + rnorm( 100 )
```

```
axis_template <- list(
  showgrid = F ,
  zeroline = F ,
  nticks = 20 ,
  showline = T ,
  title = 'AXIS',
  mirror = 'all' )
```

```
plot_ly (
  x = x ,
  y = y1 ,
  type = 'scatter' ) %>%
```

```
layout(
  xaxis = axis_template ,
  yaxis = axis_template )
```

R CLIENT BASIC CHART

[PLOT.LY/R](https://plot.ly/r)

ALL LAYOUTS [PLOT.LY/REFERENCE/#LAYOUT](https://plot.ly/reference/#layout)

STATISTICAL CHARTS

Histograms

```
x <- rchisq(100, 5, 0)
plot_ly(
  x = x,
  type = 'histogram')
```

Box Plots

```
plot_ly(
  y = rnorm(50),
  type = 'box') %>%
add_trace(y = rnorm(50, 1))
```

2D Histogram

```
plot_ly(
  x = rnorm(1000, sd = 10),
  y = rnorm(1000, sd = 5),
  type = 'histogram2d')
```

MAPS

Bubble Map

```
plot_ly(
  type = 'scattergeo',
  lon = c(-73.5, 151.2),
  lat = c(45.5, -33.8),
  marker = list(
    color = c('red', 'blue'),
    size = c(30, 50),
    mode = 'markers'))
```

Choropleth Map

```
plot_ly(
  type = 'choropleth',
  locations = c('AZ', 'CA', 'VT'),
  locationmode = 'USA-states',
  colorscale = 'Viridis',
  z = c(10, 20, 40)) %>%
layout(geo = list(scope = 'usa'))
```

Scatter Map

```
plot_ly(
  type = 'scattergeo',
  lon = c(42, 39),
  lat = c(12, 22),
  text = c('Rome', 'Greece'),
  mode = 'markers')
```

3D CHARTS

3D Surface Plots

```
# Using a dataframe:
plot_ly(
  type = 'surface',
  z = ~volcano)
```

3D Line Plots

```
plot_ly(
  type = 'scatter3d',
  x = c(9, 8, 5, 1),
  y = c(1, 2, 4, 8),
  z = c(11, 8, 15, 3),
  mode = 'lines')
```

3D Scatter Plots

```
plot_ly(
  type = 'scatter3d',
  x = c(9, 8, 5, 1),
  y = c(1, 2, 4, 8),
  z = c(11, 8, 15, 3),
  mode = 'markers')
```

FIGURE HIERARCHY

Figure { }

```
plot_ly(
  data data.frame
  add_trace list()
  x, y, z, c()
  color, text, size c()
  colorscale 'string' or c()
  marker list()
  color 'string'
  symbol list()
  line list()
  color 'string'
  width 123
```

```
layout(
  title 'string'
  xaxis, yaxis list()
  scenelist()
  xaxis, yaxis, zaxis list()
  geo list()
  legend list()
  annotations list()
```

```
c() = array
list() = list
'string' = string
123 = number
```