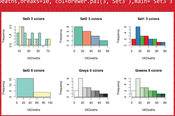
Data Visualization in R CHEATSHEET

R Programming offers a set of inbuilt functions & libraries (such as ggplot2, leaflet, lattice) to create visualizations & present data stories. Below is a guide to create basic and advanced visualizations in R

BASIC VISUALIZATIONS

Histogram

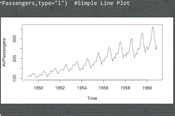
```
library(RColorBrewer)

data(VADeaths)
par(mfrow=c(2,3))
hist(VADeaths,breaks=10, col=brewer.pal(3,"Set3"),main="Set3 3 colors")
```



Bar/ Line Chart

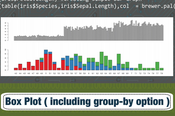
Line Chart

```
plot(AirPassengers,type="l")  #Simple Line Plot
```



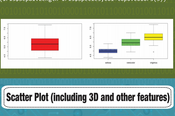
Bar Chart

```
barplot(iris$Petal.Length) #Creating simple Bar Graph
barplot(table(iris$Species,iris$Sepal.Length),col  = brewer.pal(3,"Set1"))
```



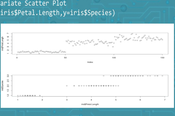
Box Plot (including group-by option)

```
data(iris)
par(mfrow=c(2,2))
boxplot(iris$Sepal.Length,col="red")

boxplot(iris$Sepal.Length~iris$Species,col=topo.colors(3))
```



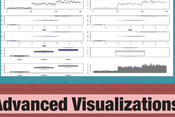
Scatter Plot (including 3D and other features)

```
#Simple Scatter Plot
plot(x=iris$Petal.Length)
#Multivariate Scatter Plot
plot(x=iris$Petal.Length,y=iris$Species)
```




```
plot(iris,col=brewer.pal(3,"Set1"))
```

```
pie(table(iris$Species))
```

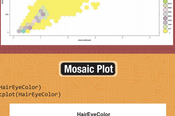


Advanced Visualizations

Hexbin Binning

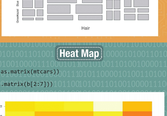
```
>library(hexbin)
>a=hexbin(diamonds$price,diamonds$carat,xbins=40)
>library(RColorBrewer)
>plot(a)
```

```
>library(RColorBrewer)
>rf <- colorRampPalette(rev(brewer.pal(40,'Set3')))
>hexbinplot(diamonds$price~diamonds$carat, data=diamonds, colramp=rf)
```



Mosaic Plot

```
> data(HairEyeColor)
> mosaicplot(HairEyeColor)
```



Heat Map

```
> heatmap(as.matrix(mtcars))
> image(as.matrix(b[2:7]))
```

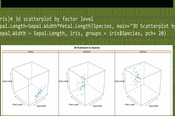
Map Visualization

```
devtools::install_github("rstudio/leaflet")
```

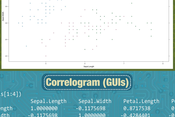
```
library(magrittr)
library(leaflet)
m <- leaflet() %>%
addTiles() %>% # Add default OpenStreetMap map tiles
addMarkers(lng=77.2310, lat=28.6560, popup="food of chandni chowk")
m  # Print the map
```

3D Graphs

```
>data(iris, package="datasets")
>scatter3d(Petal.Width~Petal.Length+Sepal.Length|Species, data=iris, fit="linear"
>residual=TRUE, parallel=FALSE, bg="black", axis.scales=TRUE, grid=TRUE, ellipsoid=FALSE)
```




```
>attach(iris)# bd scatterplot by factor level
>cloud(Sepal.Length~Sepal.Width*Petal.Length|Species, main="3D Scatterplot by Species")
>xyplot(Sepal.Width ~ Sepal.Length, iris, groups = iris$Species, pch= 30)
```



Correlogram (GUIs)

```
> cor(iris[1:4])
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width
Sepal.Length	1.0000000	-0.1175698	0.8717538	0.8179411
Sepal.Width	-0.1175698	1.0000000	-0.4284401	-0.3661259
Petal.Length	0.8717538	-0.4284401	1.0000000	0.9628654
Petal.Width	0.8179411	-0.3661259	0.9628654	1.0000000

```
> corrgram(iris)
```