Creating Data Visualizations using ggplot
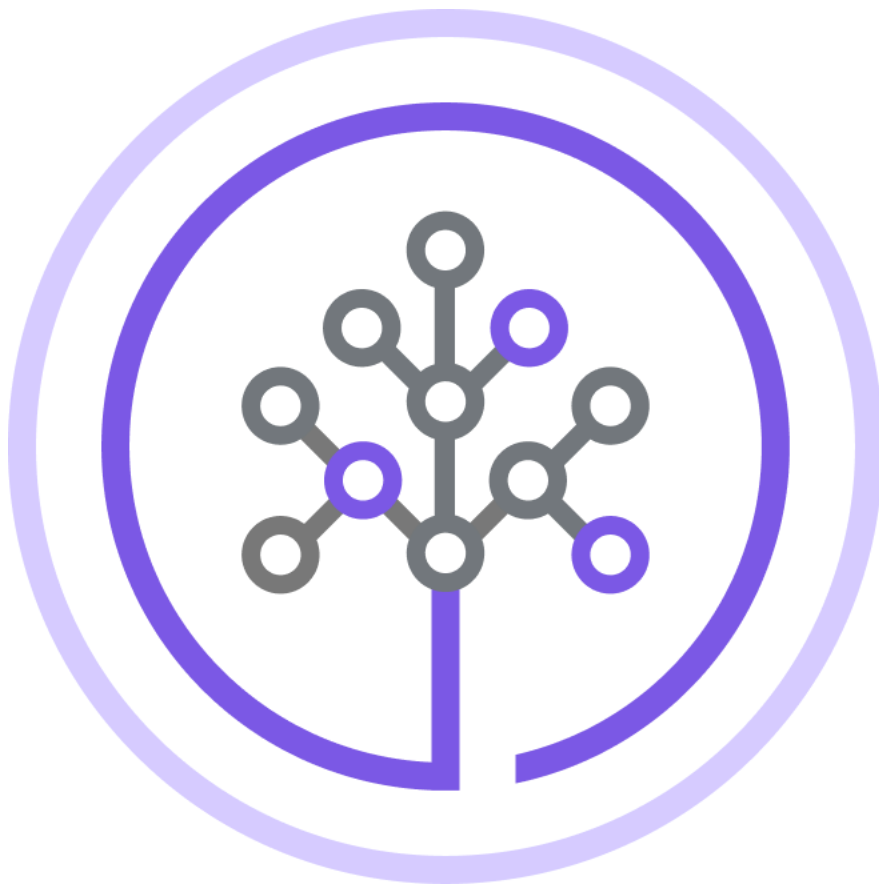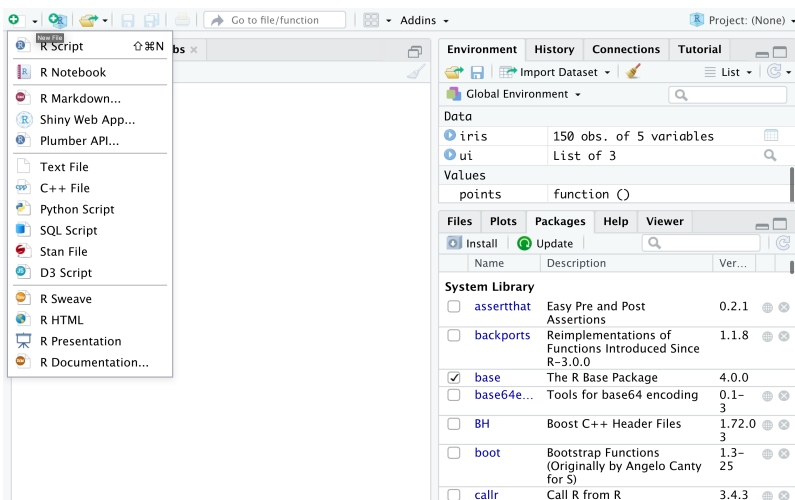

Objective for Exercise

We will create different data visualizations using the `ggplot` package using the inbuilt dataset in R called `mtcars`

1. Click on the + symbol on the top left and choose R Script from the menu to open a new R edit window in RStudio:

2. Read and view the first 5 rows of the Data using the following:

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9

1. `library(datasets)`
2.

```
3.  #Load Data
4.
5.  data(mtcars)
6.
7.  #View first 5 rows
8.
9.  head(mtcars, 5)
```

[Copied!]

3. Type this ?mtcars to get information about the variables. This will print the information at the bottom right panel, on the Help tab

4. Copy and paste the following code to load the ggplot package and create a scatterplot of disp and mpg.

```
1.  1
2.  2
3.  3
4.  4
5.  5
6.  6
```

```
1.  #load ggplot package
2.  library(ggplot2)
3.
4.  #create a scatterplot of displacement (disp) and miles per gallon (mpg)
5.
6.  ggplot(aes(x=disp,y=mpg,),data=mtcars)+geom_point()
```

[Copied!]

5. Use the following code to add a title.

```
1.  1
2.  2
3.  3
4.  4
```

```
1.
2.  #Add a title
3.
4.  ggplot(aes(x=disp,y=mpg,),data=mtcars)+geom_point()+ggtitle("displacement vs miles per gallon")
```

[Copied!]

6. Use the following code to change the name of the x-axis and y-axis

```
1.  1
2.  2
3.  3
4.  4
```

```
1.
2.  #change axis name
3.
4.  ggplot(aes(x=disp,y=mpg,),data=mtcars)+geom_point()+ggtitle("displacement vs miles per gallon") + labs(x = "Displacement", y = "Miles pe
```

[Copied!]

7. Use the following to create a boxplot of the the distribution of mpg for the individual Engine types vs Engine (0 = V-shaped, 1 = straight)
   To do this you have to make vs a string or factor.

```
1.  1
2.  2
3.  3
4.  4
5.  5
6.  6
```

```
1.  #make vs a factor
2.  mtcars$vs <- as.factor(mtcars$vs)
3.
4.  #create boxplot of the distribution for v-shaped and straight Engine
5.
6.  ggplot(aes(x=vs, y=mpg), data = mtcars) + geom_boxplot()
```

[Copied!]

8. Add color to the boxplots to help differentiate:

```
1.  1
2.  2
3.  3
```

```
1.  ggplot(aes(x=vs, y=mpg, fill = vs), data = mtcars) +
2.     geom_boxplot(alpha=0.3) +
3.     theme(legend.position="none")
```

[Copied!]

9. Finally, let us create the histogram of weight wt.

```
1.  1
```

```
1.  ggplot(aes(x=wt),data=mtcars) + geom_histogram(binwidth=0.5)
```

Copied!

This concludes this lab, we hope that you had fun!

Author(s)

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Change log

Date	Version	Changed by	Change Description
2023-05-04	1.1	Benny	Added page numbers and republished
2020-12-14	1.0	Aije	Created initial version of the lab