Introdução ao GGPLOT2

output: html_document

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Elementos Básicos do GGPLOT2

- Carregamento das bibliotecas necessárias:

```
library(ggplot2)
```

- Conjunto de dados:

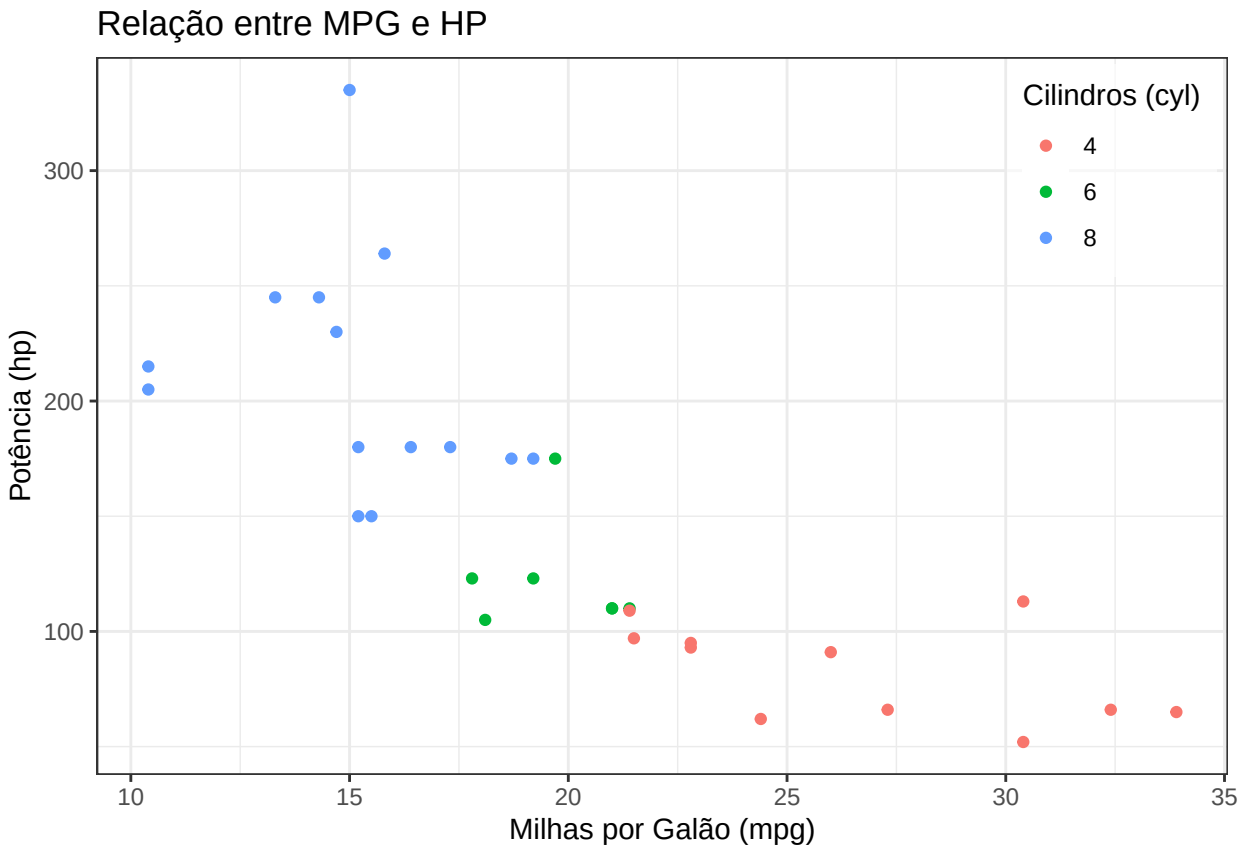
```
data = mtcars
head(data)
```

```
##                    mpg cyl
## Mazda RX4         21.0   6
## Mazda RX4 Wag     21.0   6
## Datsun 710        22.8   4
## Hornet 4 Drive    21.4   6
## Hornet Sportabout 18.7   8
## Valiant           18.1   6
##                   disp  hp
## Mazda RX4          160 110
## Mazda RX4 Wag      160 110
## Datsun 710         108  93
## Hornet 4 Drive     258 110
## Hornet Sportabout  360 175
## Valiant            225 105
##                   drat    wt
## Mazda RX4         3.90 2.620
## Mazda RX4 Wag     3.90 2.875
## Datsun 710        3.85 2.320
## Hornet 4 Drive    3.08 3.215
## Hornet Sportabout 3.15 3.440
## Valiant           2.76 3.460
##                    qsec vs am
## Mazda RX4         16.46  0  1
## Mazda RX4 Wag     17.02  0  1
## Datsun 710        18.61  1  1
## Hornet 4 Drive    19.44  1  0
## Hornet Sportabout 17.02  0  0
## Valiant           20.22  1  0
##                   gear carb
```

```
## Mazda RX4             4    4
## Mazda RX4 Wag         4    4
## Datsun 710            4    1
## Hornet 4 Drive        3    1
## Hornet Sportabout     3    2
## Valiant               3    1
```

Exemplo 1: Gráfico de dispersão (*Scatter Plot*)

```
ggplot(data = mtcars,
       aes(
         x = mpg, y = hp
       )) +
  geom_point(aes(color=factor(cyl))) +
  labs(title = "Relação entre MPG e HP",
       x = "Milhas por Galão (mpg)",
       y = "Potência (hp)",
       color = "Cilindros (cyl)") +
  theme_bw() +
  theme(
    legend.position = c(.99, .99),
    legend.justification = c("right", "top"),
    legend.box.just = "right",
    legend.margin = margin(6, 6, 6, 6),
    legend.background=element_rect(fill = alpha("white", 0.6))
  )
```



Exemplo 2: Gráfico de Linhas

Dados:

```
TM=c(23.4,19.8,12.8,16.3,20.8,17.4,20.0,21.8,21.8,20.6,20.3,20.6,20.4,18.1,20.2,19.3,17.2,20.8,
     20.7,17.4,21.8,23.8,25.8,26.3,25.3,24.5,21.4,23.3,24.3,21.2,24.3,23.6,23.5,22.3,21.4,19.7,
     22.1,20.5,22.3,21.8,18.0,21.3,24.1,23.9,23.6,23.3,23.2,22.0,22.4,20.8,20.2,22.6,23.7,19.9,
     19.7,21.4,22.5,21.4,20.4,24.5,22.7,20.3,23.7,24.0,23.6,21.6,22.0,22.6,21.3,22.5,22.2,26.3,
     27.2,28.3,25.9,25.8,26.6,24.9,20.8,19.4,21.6,22.2,23.8,20.9,22.9,25.0,23.7,23.8,24.8,24.8,
     24.8,25.4,24.4,23.5,24.7,25.3,25.2,23.8,22.8,22.2,26.0,27.8,28.1,25.8,26.8,25.3,25.0,26.6,
     26.4,26.7,26.8,25.5,24.0,23.2,22.6,23.4,24.5,25.7,25.0,26.4,26.2,26.2,26.9,24.7,25.6,25.0,
     23.7,22.8,25.5,26.3,26.9,25.1,26.7,25.6,24.5,26.2,26.2,24.4,26.3,25.6,24.4,24.0,26.7,28.2,
     26.3,26.7,25.4,24.8,24.6,26.3,28.7,28.6,26.3,28.6,29.0,28.2,24.3,23.0,22.9,24.6,26.6,28.5,
     28.0,25.5,23.2,23.7,23.0,22.4,23.6,23.6,23.5,23.5,22.9,23.5)
UR=c(68,93,86,55,54,51,45,43,55,54,58,57,64,89,73,80,96,71,86,95,74,62,49,43,51,62,86,73,64,95,
     68,77,86,93,76,63,69,94,88,89,88,67,76,84,71,88,83,83,74,54,51,61,74,97,94,97,66,58,65,56,
     82,93,66,64,67,65,67,67,63,62,76,51,57,54,80,65,65,65,93,88,63,68,65,98,83,64,67,62,59,78,
     75,70,63,62,53,46,42,55,60,51,51,47,42,60,62,77,74,58,63,67,66,83,81,87,95,80,71,68,74,69,
     75,74,75,90,86,91,91,98,84,81,74,82,69,77,84,78,74,87,75,80,89,90,77,73,82,80,82,75,79,70,
     61,63,74,63,58,62,76,76,74,69,64,56,61,86,94,85,78,91,82,80,81,85,89,84)
TEMPO=c(1:174)
```