Manipulação e Apresentação de Dados

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broom

broom

```
modelo.aov <- aov(Sepal.Length ~ Species, data=iris)
modelo.lm  <- lm(Sepal.Width ~ Petal.Width, data=iris)
modelo.wt  <- wilcox.test(iris$Petal.Length, g=iris$Species)
```

broom

```r
library(broom)
tidy(modelo.aov)
```

```
## # A tibble: 2 x 6
##   term         df sumsq meansq statistic   p.value
##   <chr>     <dbl> <dbl>  <dbl>     <dbl>     <dbl>
## 1 Species       2  63.2 31.6        119.  1.67e-31
## 2 Residuals   147  39.0  0.265        NA  NA
```

```r
tidy(modelo.lm)
```

```
## # A tibble: 2 x 5
##   term        estimate std.error statistic  p.value
##   <chr>          <dbl>     <dbl>     <dbl>    <dbl>
## 1 (Intercept)    3.31     0.0621     53.3  1.84e-98
## 2 Petal.Width   -0.209    0.0437     -4.79 4.07e- 6
```

```r
tidy(modelo.wt)
```

```
## # A tibble: 1 x 4
##   statistic  p.value method                                     alterna
##       <dbl>    <dbl> <chr>                                      <chr>
## 1     11325 2.25e-26 Wilcoxon signed rank test with continuity corr~ two.sid
```

broom

```r
glance(modelo.aov)
```

```
## # A tibble: 1 x 6
##   logLik   AIC   BIC deviance  nobs r.squared
##    <dbl> <dbl> <dbl>    <dbl> <int>     <dbl>
## 1  -112.  231.  243.     39.0   150     0.619
```

```r
glance(modelo.lm)
```

```
## # A tibble: 1 x 12
##   r.squared adj.r.squared sigma statistic    p.value    df logLik   AIC   BI
##       <dbl>         <dbl> <dbl>     <dbl>      <dbl> <dbl>  <dbl> <dbl> <dbl
## 1     0.134         0.128 0.407      22.9 0.00000407     1  -77.0  160.  169
## # i 3 more variables: deviance <dbl>, df.residual <int>, nobs <int>
```

```r
glance(modelo.wt)
```

```
## # A tibble: 1 x 4
##   statistic  p.value method                                          alterna
##       <dbl>    <dbl> <chr>                                           <chr>
## 1     11325 2.25e-26 Wilcoxon signed rank test with continuity corr~ two.sid
```

broom

```r
augment(modelo.lm, interval="confidence")
```

```
## # A tibble: 150 x 10
##    Sepal.Width Petal.Width .fitted .lower .upper  .resid   .hat .sig
##          <dbl>       <dbl>   <dbl>  <dbl>  <dbl>   <dbl>  <dbl> <db
##  1         3.5         0.2    3.27   3.16   3.38  0.233  0.0182 0.4
##  2         3           0.2    3.27   3.16   3.38 -0.267  0.0182 0.4
##  3         3.2         0.2    3.27   3.16   3.38 -0.0666 0.0182 0.4
##  4         3.1         0.2    3.27   3.16   3.38 -0.167  0.0182 0.4
##  5         3.6         0.2    3.27   3.16   3.38  0.333  0.0182 0.4
##  6         3.9         0.4    3.22   3.13   3.32  0.675  0.0140 0.4
##  7         3.4         0.3    3.25   3.14   3.35  0.154  0.0160 0.4
##  8         3.4         0.2    3.27   3.16   3.38  0.133  0.0182 0.4
##  9         2.9         0.2    3.27   3.16   3.38 -0.367  0.0182 0.4
## 10         3.1         0.1    3.29   3.17   3.40 -0.187  0.0206 0.4
## # i 140 more rows
## # i 1 more variable: .std.resid <dbl>
```

purrr

purrr

```r
lapply(seq(1,5), function(x) {
  paste(x, "é", ifelse(x%%2==0, "par", "ímpar"))
})
```

```
## [[1]]
## [1] "1 é ímpar"
##
## [[2]]
## [1] "2 é par"
##
## [[3]]
## [1] "3 é ímpar"
##
## [[4]]
## [1] "4 é par"
##
## [[5]]
## [1] "5 é ímpar"
```

purrr

```r
library(purrr)
map(seq(1,5), function(x) {
  paste(x, "é", ifelse(x%%2==0, "par", "ímpar"))
})
```

```
## [[1]]
## [1] "1 é ímpar"
##
## [[2]]
## [1] "2 é par"
##
## [[3]]
## [1] "3 é ímpar"
##
## [[4]]
## [1] "4 é par"
##
## [[5]]
## [1] "5 é ímpar"
```

purrr

```r
map_dfr(seq(1,5), function(x) {
  tibble(par=paste(x, "é", ifelse(x%%2==0, "par", "ímpar")))
})
```

```
## # A tibble: 5 x 1
##   par
##   <chr>
## 1 1 é ímpar
## 2 2 é par
## 3 3 é ímpar
## 4 4 é par
## 5 5 é ímpar
```

purrr

```r
map_dfc(tibble(um=1, dois=2, tres=3), function(x) {
  x * seq(1,5)
})
```

```
## # A tibble: 5 x 3
##      um  dois  tres
##   <dbl> <dbl> <dbl>
## 1     1     2     3
## 2     2     4     6
## 3     3     6     9
## 4     4     8    12
## 5     5    10    15
```

purrr

```r
library(agridat)
caribbean.maize
```

```
##         isle site block plot  trt ears yield
## 1    Antigua DBAN    B1    1 T111   42  4.96
## 2    Antigua DBAN    B1    2 T000   41  3.94
## 3    Antigua DBAN    B1    3 T311   49  6.35
## 4    Antigua DBAN    B1    4 T202   48  5.56
## 5    Antigua DBAN    B1    5 T111   45  5.36
## 6    Antigua DBAN    B1    6 T220   46  6.18
## 7    Antigua DBAN    B1    7 T113   42  4.71
## 8    Antigua DBAN    B1    8 T131   44  6.03
## 9    Antigua DBAN    B1    9 T022   42  2.88
## 10   Antigua DBAN    B2   10 T222   44  5.68
## 11   Antigua DBAN    B2   11 T311   42  5.80
## 12   Antigua DBAN    B2   12 T020   42  4.16
## 13   Antigua DBAN    B2   13 T200   46  4.90
## 14   Antigua DBAN    B2   14 T111   44  5.25
## 15   Antigua DBAN    B2   15 T131   48  5.80
## 16   Antigua DBAN    B2   16 T002   46  2.18
```

purrr

```r
caribbean.maize %>%
  group_split(isle)
```

```
## <list_of<
##   tbl_df<
##     isle : factor<2a195>
##     site : factor<459f2>
##     block: factor<cfca5>
##     plot : integer
##     trt  : factor<ed0b9>
##     ears : integer
##     yield: double
##   >
## >[2]>
## [[1]]
## # A tibble: 288 x 7
##    isle    site  block  plot trt    ears yield
##    <fct>   <fct> <fct> <int> <fct> <int> <dbl>
##  1 Antigua DBAN  B1        1 T111     42  4.96
```

purrr

```r
caribbean.maize %>%
  group_split(isle) %>%
  map(function(x) x %>%
        pivot_wider(id_cols=c(block,plot), names_from=site,
                    values_from=yield))
```

```
## [[1]]
## # A tibble: 36 x 10
##    block  plot  DBAN  LFAN  TEAN  WEAN  WLAN  NSAN  OVAN  ORA
##    <fct> <int> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl
##  1 B1        1  4.96  2.92  1.27  4.02  2      2.43  2.04  5.2
##  2 B1        2  3.94  1.68  2.1   5.8   2.39  1.28  3.88  6.8
##  3 B1        3  6.35  4.5   2.37  2.16  2.04  0.83  5.53  7.7
##  4 B1        4  5.56  4.74  2.08  5.31  1.64  2.44  6.61  6.7
##  5 B1        5  5.36  4.44  1.74  5.12  1.83  1.3   2.97  6.5
##  6 B1        6  6.18  4.66  3.16  5.98  2.08  1.34  4.47  6.4
##  7 B1        7  4.71  2.94  4.55  5.46  3.13  2.06  4.06  6.7
##  8 B1        8  6.03  1.6   3.2   3.45  1.96  3.02  5.02  6.7
##  9 B1        9  2.88  1.82  3.69  4.96  1.3   2.18  4.56  6.9
## 10 B2       10  5.68  4.44  1.52  4.26  2.16  2.35  3.5   3.7
```

purrr

```r
caribbean.maize %>%
  group_split(isle) %>%
  map(\(x) x %>%
        pivot_wider(id_cols=c(block,plot), names_from=site,
                    values_from=yield))
```

```
## [[1]]
## # A tibble: 36 x 10
##    block  plot  DBAN  LFAN  TEAN  WEAN  WLAN  NSAN  OVAN  ORA
##    <fct> <int> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl
##  1 B1        1  4.96  2.92  1.27  4.02  2     2.43  2.04  5.2
##  2 B1        2  3.94  1.68  2.1   5.8   2.39  1.28  3.88  6.8
##  3 B1        3  6.35  4.5   2.37  2.16  2.04  0.83  5.53  7.7
##  4 B1        4  5.56  4.74  2.08  5.31  1.64  2.44  6.61  6.7
##  5 B1        5  5.36  4.44  1.74  5.12  1.83  1.3   2.97  6.5
##  6 B1        6  6.18  4.66  3.16  5.98  2.08  1.34  4.47  6.4
##  7 B1        7  4.71  2.94  4.55  5.46  3.13  2.06  4.06  6.7
##  8 B1        8  6.03  1.6   3.2   3.45  1.96  3.02  5.02  6.7
##  9 B1        9  2.88  1.82  3.69  4.96  1.3   2.18  4.56  6.9
## 10 B2       10  5.68  4.44  1.52  4.26  2.16  2.35  3.5   3.7
```

purrr

```r
caribbean.maize %>%
  group_split(isle) %>%
  map(. %>%
        pivot_wider(id_cols=c(block,plot), names_from=site,
                    values_from=yield))
```

```
## [[1]]
## # A tibble: 36 x 10
##    block  plot  DBAN  LFAN  TEAN  WEAN  WLAN  NSAN  OVAN  ORA
##    <fct> <int> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl
##  1 B1        1  4.96  2.92  1.27  4.02  2     2.43  2.04  5.2
##  2 B1        2  3.94  1.68  2.1   5.8   2.39  1.28  3.88  6.8
##  3 B1        3  6.35  4.5   2.37  2.16  2.04  0.83  5.53  7.7
##  4 B1        4  5.56  4.74  2.08  5.31  1.64  2.44  6.61  6.7
##  5 B1        5  5.36  4.44  1.74  5.12  1.83  1.3   2.97  6.5
##  6 B1        6  6.18  4.66  3.16  5.98  2.08  1.34  4.47  6.4
##  7 B1        7  4.71  2.94  4.55  5.46  3.13  2.06  4.06  6.7
##  8 B1        8  6.03  1.6   3.2   3.45  1.96  3.02  5.02  6.7
##  9 B1        9  2.88  1.82  3.69  4.96  1.3   2.18  4.56  6.9
## 10 B2       10  5.68  4.44  1.52  4.26  2.16  2.35  3.5   3.7
```

purrr

```r
iris %>%
  select(-Species) %>%
  as.list() %>%
  map(\(x) x %>%
        enframe() %>%
        cbind(Species=iris$Species) %>%
        aov(value ~ Species, data=.) %>%
        residuals() %>%
        shapiro.test() %>%
        tidy()) %>%
  bind_rows(.id="Variável")
```

```
## # A tibble: 4 x 4
##   Variável     statistic p.value method
##   <chr>            <dbl>   <dbl> <chr>
## 1 Sepal.Length     0.988 0.219   Shapiro-Wilk normality test
## 2 Sepal.Width      0.989 0.323   Shapiro-Wilk normality test
## 3 Petal.Length     0.981 0.0368  Shapiro-Wilk normality test
## 4 Petal.Width      0.972 0.00387 Shapiro-Wilk normality test
```

purrr

```r
iris %>%
  select(starts_with("Sepal")) %>%
  as.list() %>%
  map(. %>%
        enframe() %>%
        cbind(Species=iris$Species) %>%
        aov(value ~ Species, data=.) %>%
        tidy()) %>%
  bind_rows(.id="Variável")
```

```
## # A tibble: 4 x 7
##   Variável     term         df sumsq meansq statistic   p.val
##   <chr>        <chr>     <dbl> <dbl>  <dbl>     <dbl>     <db
## 1 Sepal.Length Species       2  63.2 31.6       119.   1.67e-
## 2 Sepal.Length Residuals   147  39.0  0.265      NA    NA
## 3 Sepal.Width  Species       2  11.3  5.67       49.2  4.49e-
## 4 Sepal.Width  Residuals   147  17.0  0.115      NA    NA
```

purrr

```r
iris %>%
  select(starts_with("Sepal")) %>%
  as.list() %>%
  map_dfr(. %>%
            enframe() %>%
            cbind(Species=iris$Species) %>%
            aov(value ~ Species, data=.) %>%
            tidy())
```

```
## # A tibble: 4 x 6
##   term         df sumsq meansq statistic   p.value
##   <chr>     <dbl> <dbl>  <dbl>     <dbl>     <dbl>
## 1 Species       2  63.2 31.6       119.   1.67e-31
## 2 Residuals   147  39.0  0.265      NA   NA
## 3 Species       2  11.3  5.67       49.2  4.49e-17
## 4 Residuals   147  17.0  0.115      NA   NA
```

```r
cor(iris[-5])
```

```
##              Sepal.Length Sepal.Width Petal.Length Petal.Widt
## Sepal.Length    1.0000000  -0.1175698    0.8717538    0.817941
## Sepal.Width    -0.1175698   1.0000000   -0.4284401   -0.366125
## Petal.Length    0.8717538  -0.4284401    1.0000000    0.962865
## Petal.Width     0.8179411  -0.3661259    0.9628654    1.000000
```

```r
cor.test(iris[-5])
```

```
## Error in cor.test.default(iris[-5]): 'X' deve ser um vetor nu
```

purrr

```r
expand_grid(Var1=names(iris)[-5],
            Var2=names(iris)[-5]) %>%
  pmap_dbl(\(Var1, Var2){
    cor.test(iris[,Var1], iris[,Var2])$p.value
  }) %>%
  matrix(nrow=4)
```

```
##              [,1]         [,2]         [,3]         [,4]
## [1,] 0.000000e+00 1.518983e-01 1.038667e-47 2.325498e-37
## [2,] 1.518983e-01 0.000000e+00 4.513314e-08 4.073229e-06
## [3,] 1.038667e-47 4.513314e-08 0.000000e+00 4.675004e-86
## [4,] 2.325498e-37 4.073229e-06 4.675004e-86 0.000000e+00
```

purrr

```r
expand_grid(Var1=names(iris)[-5],
            Var2=names(iris)[-5]) %>%
  pmap_chr(\(Var1, Var2){
    if(Var1==Var2) return("-")
    cor.test(iris[,Var1], iris[,Var2]) %>%
      .$p.value %>%
      scales::pvalue(acc=.0001, dec=",")
  }) %>%
  matrix(nrow=4)
```

```
##      [,1]      [,2]      [,3]      [,4]
## [1,] "-"       "0,1519"  "<0,0001" "<0,0001"
## [2,] "0,1519"  "-"       "<0,0001" "<0,0001"
## [3,] "<0,0001" "<0,0001" "-"       "<0,0001"
## [4,] "<0,0001" "<0,0001" "<0,0001" "-"
```

purrr

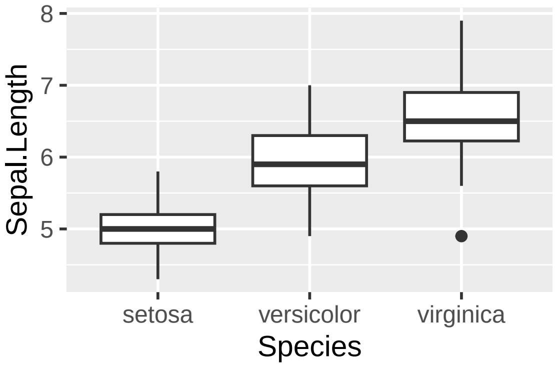
```r
map2(c(1,2,3,4), c("a","b","c","d"),
     \(num, chr) paste0("Número: ", num, "; Caractere: ", chr))
```

```
## [[1]]
## [1] "Número: 1; Caractere: a"
##
## [[2]]
## [1] "Número: 2; Caractere: b"
##
## [[3]]
## [1] "Número: 3; Caractere: c"
##
## [[4]]
## [1] "Número: 4; Caractere: d"
```

ggplot2

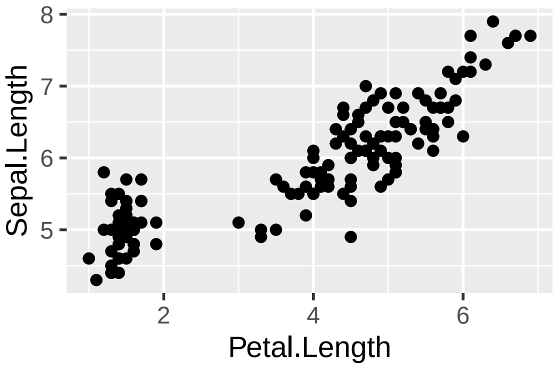
ggplot2

```r
library(ggplot2)
iris %>%
  ggplot(aes(x=Species, y=Sepal.Length)) +
  geom_boxplot()
```



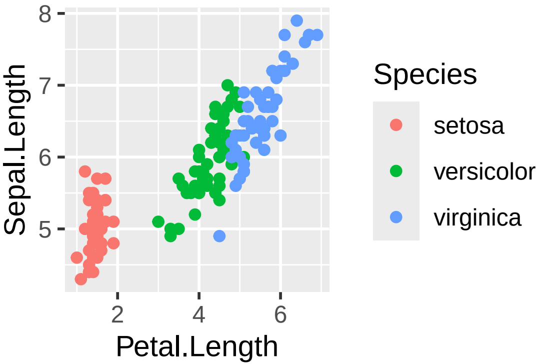
ggplot2

```
iris %>%
  ggplot(aes(x=Petal.Length, y=Sepal.Length)) +
  geom_point()
```



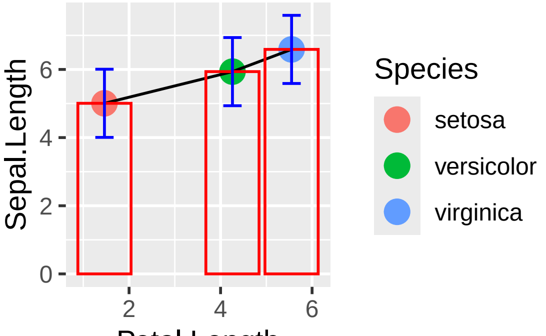
ggplot2

```r
iris %>%
  ggplot(aes(x=Petal.Length, y=Sepal.Length,
             color=Species)) +
  geom_point()
```



ggplot2

```
iris %>%
  group_by(Species) %>%
  summarise_at(vars(Petal.Length, Sepal.Length), mean) %>%
  ggplot(aes(x=Petal.Length, y=Sepal.Length, col=Species)) +
  geom_point(size=4) +
  geom_line(col="black") +
  geom_col(col="red", fill="transparent") +
  geom_errorbar(aes(ymax=Sepal.Length+1, ymin=Sepal.Length-1),
                col="blue", width=.4)
```

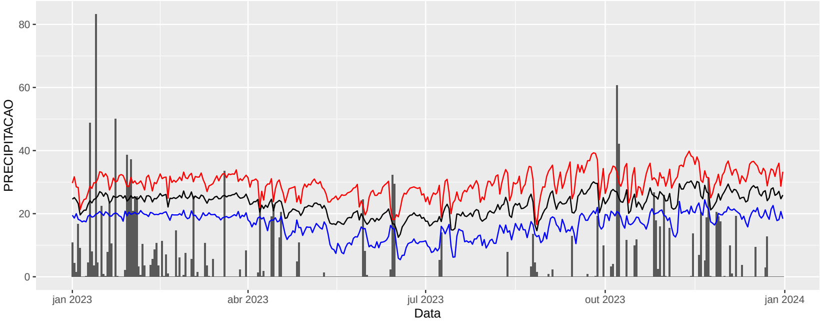


ggplot2

```r
linhas <- read_lines(
  "http://www.leb.esalq.usp.br/leb/exceldados/DCE2023.TXT")

inicio <- which(str_starts(linhas, "="))[c(1, seq(3, 37, 3))]
final <- which(str_starts(linhas, "="))[c(2, seq(5,37,3), 37)]
pular <- sapply(seq(1,13), function(i){
  seq(inicio[i], final[i])
})
pular2 <- which(linhas=="")

linhas2 <- linhas[-c(unlist(pular),pular2)]

dados_metereologicos <- as_tibble(linhas2) %>%
  separate(value,
           c("No", "ANO", "DIA", "MES", "R.GLOBA",
             "INSOLACAO", "PRECIPITACAO", "UMIDADE RELATIV",
             "VENTO MAXIMO", "VENTO MEDIO", "TEMPER MAXIMA",
             "TEMPER MINIMA", "TEMPER MEDIA", "EVAPORACAO"),
           sep=" +") %>%
  unite(Data, DIA, MES, ANO) %>%
  mutate(Data=lubridate::dmy(Data)) %>%
  mutate_at(vars(-Data), str_replace, ",", ".") %>%
  mutate_at(vars(-Data), parse_number) %>%
  filter(!is.na(Data))
```

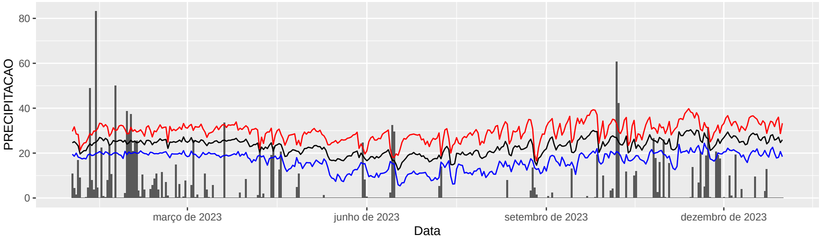
ggplot2

```
dados_metereologicos %>%
  ggplot(aes(x=Data)) +
  geom_col(aes(y=PRECIPITACAO)) +
  geom_line(aes(y=`TEMPER MEDIA`)) +
  geom_line(aes(y=`TEMPER MINIMA`), col="blue") +
  geom_line(aes(y=`TEMPER MAXIMA`), col="red")
```



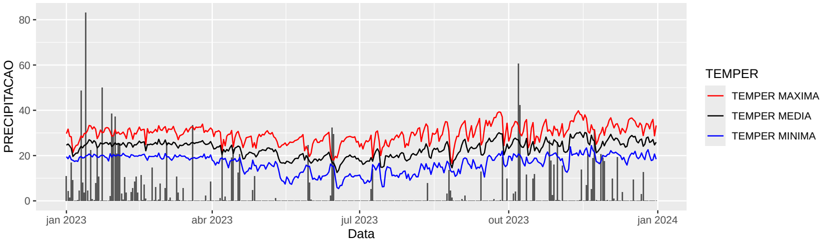
ggplot2

```
dados_metereologicos %>%
  ggplot(aes(x=Data)) +
  scale_x_date(date_breaks="3 months",
               date_labels="%B de %Y") +
  geom_col(aes(y=PRECIPITACAO)) +
  geom_line(aes(y=`TEMPER MEDIA`)) +
  geom_line(aes(y=`TEMPER MINIMA`), col="blue") +
  geom_line(aes(y=`TEMPER MAXIMA`), col="red")
```



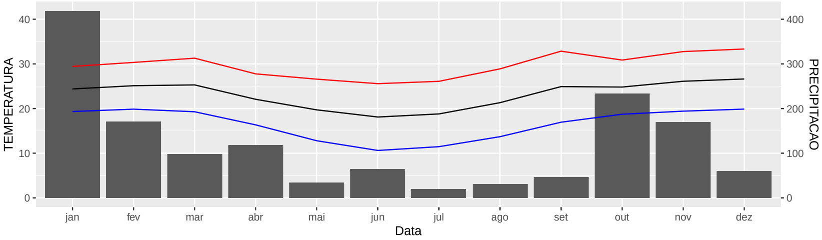
ggplot2

```r
dados_metereologicos %>%
  select(Data, PRECIPITACAO, starts_with("TEMPER")) %>%
  pivot_longer(starts_with("TEMPER"), names_to="TEMPER") %>%
  ggplot(aes(x=Data)) +
  geom_bar(stat="unique", aes(y=PRECIPITACAO)) +
  geom_line(aes(y=value, color=TEMPER)) +
  scale_color_manual(values=c("red", "black", "blue"))
```



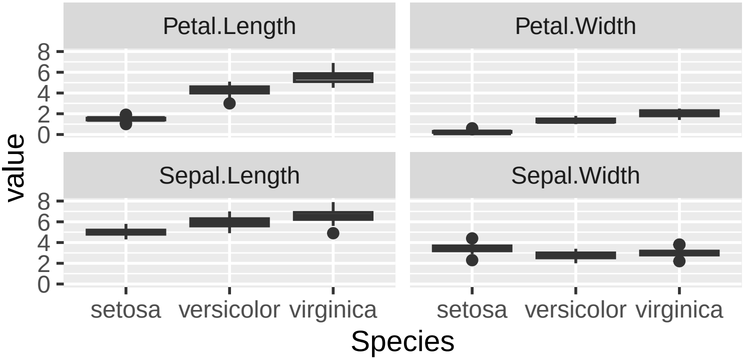
ggplot2

```
dados_metereologicos %>%
  mutate_at(vars(Data), month, label=T) %>%
  group_by(Data) %>%
  summarise(PRECIPITACAO = sum(PRECIPITACAO),
            `TEMPER MEDIA` = mean(`TEMPER MEDIA`),
            `TEMPER MINIMA` = mean(`TEMPER MINIMA`),
            `TEMPER MAXIMA` = mean(`TEMPER MAXIMA`)) %>%
  ggplot(aes(x=Data)) +
  scale_y_continuous(name="TEMPERATURA",
                     sec.axis = sec_axis(~.*10, name="PRECIPITACAO")) +
  geom_col(aes(y=PRECIPITACAO/10)) +
  geom_line(aes(y=`TEMPER MEDIA`, group=1)) +
  geom_line(aes(y=`TEMPER MINIMA`, group=1), col="blue") +
  geom_line(aes(y=`TEMPER MAXIMA`, group=1), col="red")
```



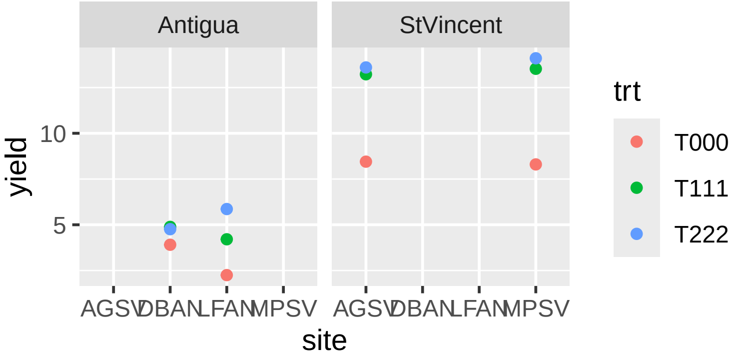
ggplot2

```r
iris %>%
  pivot_longer(-Species) %>%
  ggplot(aes(x=Species, y=value)) +
  geom_boxplot() +
  facet_wrap(~name)
```



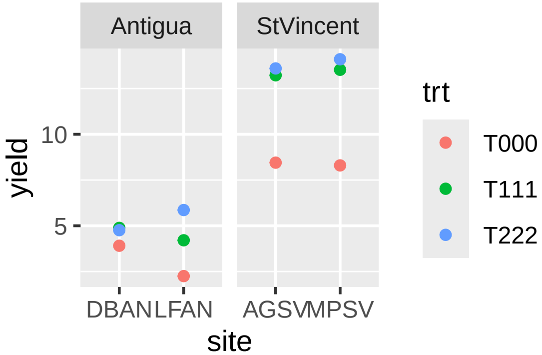
ggplot2

```r
agridat::caribbean.maize %>%
  filter(site %in% c("DBAN", "LFAN", "MPSV", "AGSV")) %>%
  filter(trt %in% c("T000", "T111", "T222")) %>%
  group_by(isle, site, trt) %>%
  summarise_at(vars(yield), mean) %>%
  ggplot(aes(x=site, col=trt, y=yield)) +
  geom_point() +
  facet_wrap(~isle)
```



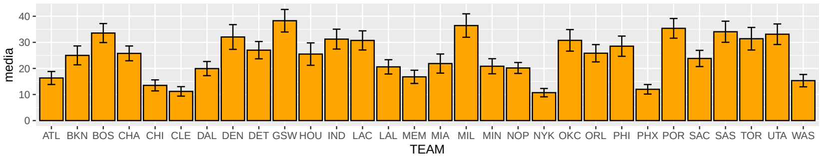
ggplot2

```
agridat::caribbean.maize %>%
  filter(site %in% c("DBAN", "LFAN", "MPSV", "AGSV")) %>%
  filter(trt %in% c("T000", "T111", "T222")) %>%
  group_by(isle, site, trt) %>%
  summarise_at(vars(yield), mean) %>%
  ggplot(aes(x=site, col=trt, y=yield)) +
  geom_point() +
  facet_wrap(~isle, scales = "free_x")
```



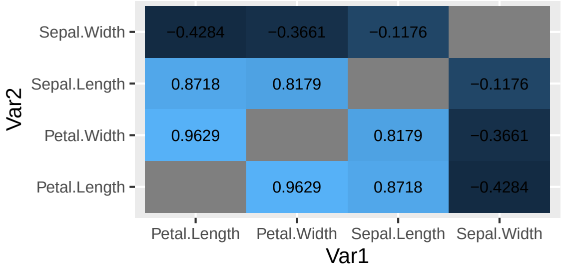
ggplot2

```r
library(datasetsICR)
data(NBA.game)
NBA.game %>%
  group_by(TEAM) %>%
  summarise_at(vars(W),
               list(media=mean,
                    erro=\(x) sd(x)/sqrt(length(x)))) %>%
  ggplot(aes(x=TEAM, y=media)) +
  geom_col(fill="orange", col="black") +
  geom_errorbar(aes(ymin=media-erro, ymax=media+erro),
                width=.3, col="black")
```

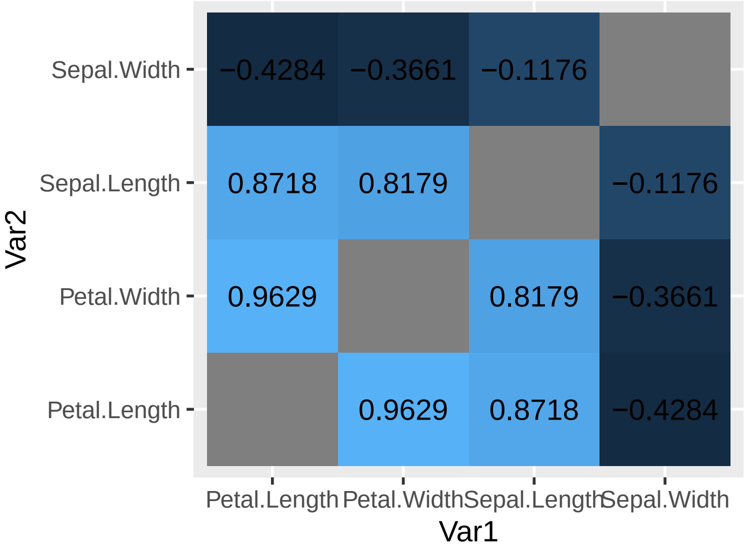


ggplot2

```
iris %>%
  select(-Species) %>%
  cor() %>%
  as.data.frame() %>%
  rownames_to_column("Var1") %>%
  pivot_longer(-Var1, names_to="Var2", values_to="Cor") %>%
  mutate(Cor = ifelse(Var1==Var2, NA, Cor)) %>%
  ggplot(aes(x=Var1, y=Var2, fill=Cor)) +
  geom_tile(show.legend=F) +
  geom_text(aes(label=round(Cor, 4)), size=2) +
  theme_grey(base_size = 8)
```



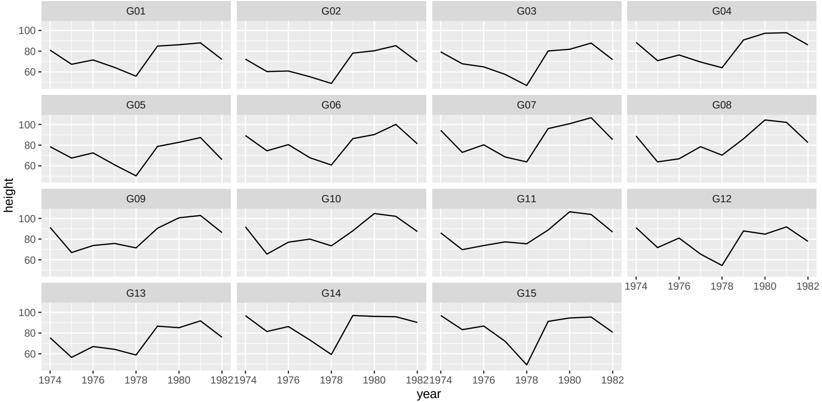
ggplot2



Sepal.Width
Sepal.Length
Petal.Width
Petal.Length
Var2
−0.4284
−0.3661
−0.1176
0.8718
0.8179
−0.1176
0.9629
0.8179
−0.3661
0.9629
0.8718
−0.4284
Petal.Length
Petal.Width
Sepal.Length
Sepal.Width
Var1

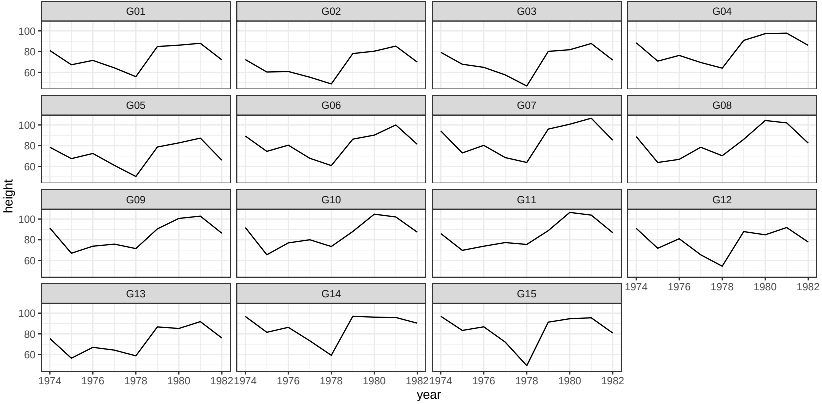
ggplot2

```r
agridat::aastveit.barley.height %>%
  ggplot(aes(x=year, y=height)) +
  facet_wrap(~gen) +
  geom_line()
```



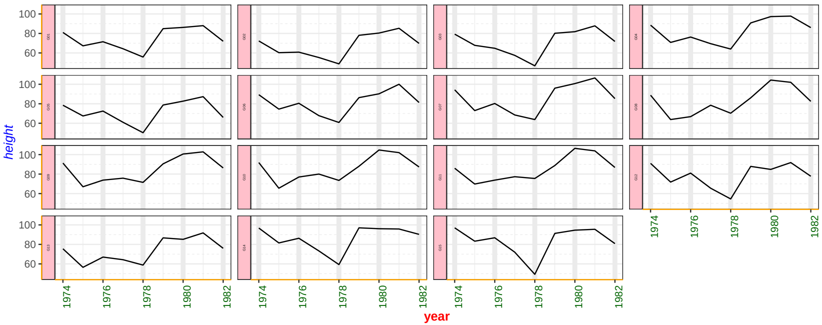
ggplot2

```r
agridat::aastveit.barley.height %>%
  ggplot(aes(x=year, y=height)) +
  facet_wrap(~gen) +
  geom_line() +
  theme_bw()
```



ggplot2

```r
agridat::aastveit.barley.height %>%
  ggplot(aes(x=year, y=height)) +
  facet_wrap(~gen, strip.position = "left") +
  geom_line() +
  theme_bw() +
  theme(axis.title.x = element_text(color="red", face="bold"),
        axis.title.y = element_text(color="blue", face="italic"),
        axis.text.x = element_text(color="darkgreen", angle=90),
        strip.background = element_rect(fill="pink"),
        strip.text = element_text(size=3),
        axis.line = element_line(color="orange"),
        panel.grid.major.x = element_line(linewidth=2),
        panel.grid.minor.y = element_line(linetype="dashed"))
```



Exercícios

Exercício 1

Personalizar o gráfico a seguir:

```
dados_metereologicos %>%
  select(Data, PRECIPITACAO, starts_with("TEMPER")) %>%
  pivot_longer(starts_with("TEMPER")) %>%
  ggplot(aes(x=Data)) +
  geom_bar(stat="unique", aes(y=PRECIPITACAO)) +
  geom_line(aes(y=value, color=name))
```

Exemplo: