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Preface

Sobre esse projeto...

1 Introduction

This is a book created from markdown and executable code.

See Knuth (1984) for additional discussion of literate programming.

```
1 + 1
```

```
[1] 2
```

2 Tidyverse basics

Welcome to Chapter 2 of our tutorial on the tidyverse! In this chapter, we delve into the heart of data manipulation with R using the basic tidyverse packages, particularly focusing on the fundamental functionalities of dplyr.

The tidyverse, a collection of R packages designed for data science, has revolutionized the way we work with data in R. At its core, the tidyverse emphasizes clarity, simplicity, and consistency, making it easier for users to manipulate, visualize, and model data effectively.

In this chapter, we'll explore the basic dplyr verbs, which serve as the building blocks for data manipulation tasks. These verbs provide intuitive and powerful tools for transforming, summarizing, filtering, and arranging data, enabling you to perform complex data manipulations with ease.

Whether you're new to R or looking to streamline your data analysis workflow, mastering the basic tidyverse tools will empower you to tackle real-world data challenges efficiently and effectively. By the end of this chapter, you'll have a solid understanding of how to use dplyr to wrangle, clean, and explore your data, setting the stage for more advanced analyses in subsequent chapters.

So, let's dive in and uncover the power of the basic tidyverse, starting with the essential dplyr verbs that form the backbone of data manipulation in R. Get ready to unleash the full potential of your data with the tidyverse!

2.1 {dplyr} verbs

- `mutate()`
- `filter()`
- `select()`
- `arrange()`
- `summarise()`

`iris`

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3.0	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	4.6	3.1	1.5	0.2	setosa
5	5.0	3.6	1.4	0.2	setosa
6	5.4	3.9	1.7	0.4	setosa
7	4.6	3.4	1.4	0.3	setosa
8	5.0	3.4	1.5	0.2	setosa
9	4.4	2.9	1.4	0.2	setosa
10	4.9	3.1	1.5	0.1	setosa
11	5.4	3.7	1.5	0.2	setosa
12	4.8	3.4	1.6	0.2	setosa
13	4.8	3.0	1.4	0.1	setosa
14	4.3	3.0	1.1	0.1	setosa
15	5.8	4.0	1.2	0.2	setosa
16	5.7	4.4	1.5	0.4	setosa
17	5.4	3.9	1.3	0.4	setosa
18	5.1	3.5	1.4	0.3	setosa
19	5.7	3.8	1.7	0.3	setosa
20	5.1	3.8	1.5	0.3	setosa
21	5.4	3.4	1.7	0.2	setosa
22	5.1	3.7	1.5	0.4	setosa
23	4.6	3.6	1.0	0.2	setosa
24	5.1	3.3	1.7	0.5	setosa
25	4.8	3.4	1.9	0.2	setosa
26	5.0	3.0	1.6	0.2	setosa
27	5.0	3.4	1.6	0.4	setosa
28	5.2	3.5	1.5	0.2	setosa
29	5.2	3.4	1.4	0.2	setosa
30	4.7	3.2	1.6	0.2	setosa
31	4.8	3.1	1.6	0.2	setosa
32	5.4	3.4	1.5	0.4	setosa
33	5.2	4.1	1.5	0.1	setosa
34	5.5	4.2	1.4	0.2	setosa
35	4.9	3.1	1.5	0.2	setosa
36	5.0	3.2	1.2	0.2	setosa
37	5.5	3.5	1.3	0.2	setosa
38	4.9	3.6	1.4	0.1	setosa
39	4.4	3.0	1.3	0.2	setosa
40	5.1	3.4	1.5	0.2	setosa
41	5.0	3.5	1.3	0.3	setosa
42	4.5	2.3	1.3	0.3	setosa

43	4.4	3.2	1.3	0.2	setosa
44	5.0	3.5	1.6	0.6	setosa
45	5.1	3.8	1.9	0.4	setosa
46	4.8	3.0	1.4	0.3	setosa
47	5.1	3.8	1.6	0.2	setosa
48	4.6	3.2	1.4	0.2	setosa
49	5.3	3.7	1.5	0.2	setosa
50	5.0	3.3	1.4	0.2	setosa
51	7.0	3.2	4.7	1.4	versicolor
52	6.4	3.2	4.5	1.5	versicolor
53	6.9	3.1	4.9	1.5	versicolor
54	5.5	2.3	4.0	1.3	versicolor
55	6.5	2.8	4.6	1.5	versicolor
56	5.7	2.8	4.5	1.3	versicolor
57	6.3	3.3	4.7	1.6	versicolor
58	4.9	2.4	3.3	1.0	versicolor
59	6.6	2.9	4.6	1.3	versicolor
60	5.2	2.7	3.9	1.4	versicolor
61	5.0	2.0	3.5	1.0	versicolor
62	5.9	3.0	4.2	1.5	versicolor
63	6.0	2.2	4.0	1.0	versicolor
64	6.1	2.9	4.7	1.4	versicolor
65	5.6	2.9	3.6	1.3	versicolor
66	6.7	3.1	4.4	1.4	versicolor
67	5.6	3.0	4.5	1.5	versicolor
68	5.8	2.7	4.1	1.0	versicolor
69	6.2	2.2	4.5	1.5	versicolor
70	5.6	2.5	3.9	1.1	versicolor
71	5.9	3.2	4.8	1.8	versicolor
72	6.1	2.8	4.0	1.3	versicolor
73	6.3	2.5	4.9	1.5	versicolor
74	6.1	2.8	4.7	1.2	versicolor
75	6.4	2.9	4.3	1.3	versicolor
76	6.6	3.0	4.4	1.4	versicolor
77	6.8	2.8	4.8	1.4	versicolor
78	6.7	3.0	5.0	1.7	versicolor
79	6.0	2.9	4.5	1.5	versicolor
80	5.7	2.6	3.5	1.0	versicolor
81	5.5	2.4	3.8	1.1	versicolor
82	5.5	2.4	3.7	1.0	versicolor
83	5.8	2.7	3.9	1.2	versicolor
84	6.0	2.7	5.1	1.6	versicolor
85	5.4	3.0	4.5	1.5	versicolor

86	6.0	3.4	4.5	1.6 versicolor
87	6.7	3.1	4.7	1.5 versicolor
88	6.3	2.3	4.4	1.3 versicolor
89	5.6	3.0	4.1	1.3 versicolor
90	5.5	2.5	4.0	1.3 versicolor
91	5.5	2.6	4.4	1.2 versicolor
92	6.1	3.0	4.6	1.4 versicolor
93	5.8	2.6	4.0	1.2 versicolor
94	5.0	2.3	3.3	1.0 versicolor
95	5.6	2.7	4.2	1.3 versicolor
96	5.7	3.0	4.2	1.2 versicolor
97	5.7	2.9	4.2	1.3 versicolor
98	6.2	2.9	4.3	1.3 versicolor
99	5.1	2.5	3.0	1.1 versicolor
100	5.7	2.8	4.1	1.3 versicolor
101	6.3	3.3	6.0	2.5 virginica
102	5.8	2.7	5.1	1.9 virginica
103	7.1	3.0	5.9	2.1 virginica
104	6.3	2.9	5.6	1.8 virginica
105	6.5	3.0	5.8	2.2 virginica
106	7.6	3.0	6.6	2.1 virginica
107	4.9	2.5	4.5	1.7 virginica
108	7.3	2.9	6.3	1.8 virginica
109	6.7	2.5	5.8	1.8 virginica
110	7.2	3.6	6.1	2.5 virginica
111	6.5	3.2	5.1	2.0 virginica
112	6.4	2.7	5.3	1.9 virginica
113	6.8	3.0	5.5	2.1 virginica
114	5.7	2.5	5.0	2.0 virginica
115	5.8	2.8	5.1	2.4 virginica
116	6.4	3.2	5.3	2.3 virginica
117	6.5	3.0	5.5	1.8 virginica
118	7.7	3.8	6.7	2.2 virginica
119	7.7	2.6	6.9	2.3 virginica
120	6.0	2.2	5.0	1.5 virginica
121	6.9	3.2	5.7	2.3 virginica
122	5.6	2.8	4.9	2.0 virginica
123	7.7	2.8	6.7	2.0 virginica
124	6.3	2.7	4.9	1.8 virginica
125	6.7	3.3	5.7	2.1 virginica
126	7.2	3.2	6.0	1.8 virginica
127	6.2	2.8	4.8	1.8 virginica
128	6.1	3.0	4.9	1.8 virginica

129	6.4	2.8	5.6	2.1	virginica
130	7.2	3.0	5.8	1.6	virginica
131	7.4	2.8	6.1	1.9	virginica
132	7.9	3.8	6.4	2.0	virginica
133	6.4	2.8	5.6	2.2	virginica
134	6.3	2.8	5.1	1.5	virginica
135	6.1	2.6	5.6	1.4	virginica
136	7.7	3.0	6.1	2.3	virginica
137	6.3	3.4	5.6	2.4	virginica
138	6.4	3.1	5.5	1.8	virginica
139	6.0	3.0	4.8	1.8	virginica
140	6.9	3.1	5.4	2.1	virginica
141	6.7	3.1	5.6	2.4	virginica
142	6.9	3.1	5.1	2.3	virginica
143	5.8	2.7	5.1	1.9	virginica
144	6.8	3.2	5.9	2.3	virginica
145	6.7	3.3	5.7	2.5	virginica
146	6.7	3.0	5.2	2.3	virginica
147	6.3	2.5	5.0	1.9	virginica
148	6.5	3.0	5.2	2.0	virginica
149	6.2	3.4	5.4	2.3	virginica
150	5.9	3.0	5.1	1.8	virginica

```
library(dplyr)
```

Attaching package: 'dplyr'

The following objects are masked from 'package:stats':

filter, lag

The following objects are masked from 'package:base':

intersect, setdiff, setequal, union

```
dplyr::glimpse(iris)
```



```

Rows: 150
Columns: 5
$ Sepal.Length <dbl> 5.1, 4.9, 4.7, 4.6, 5.0, 5.4, 4.6, 5.0, 4.4, 4.9, 5.4, 4.~
$ Sepal.Width <dbl> 3.5, 3.0, 3.2, 3.1, 3.6, 3.9, 3.4, 3.4, 2.9, 3.1, 3.7, 3.~
$ Petal.Length <dbl> 1.4, 1.4, 1.3, 1.5, 1.4, 1.7, 1.4, 1.5, 1.4, 1.5, 1.5, 1.~
$ Petal.Width <dbl> 0.2, 0.2, 0.2, 0.2, 0.2, 0.4, 0.3, 0.2, 0.2, 0.1, 0.2, 0.~
$ Species <fct> setosa, setosa, setosa, setosa, setosa, setosa, setosa, setosa, s~

```

2.1.1 mutate

$$A = \pi lw$$

```
mutate(.data = iris, area_Sepal = pi*Sepal.Length*Sepal.Width)
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species	area_Sepal
1	5.1	3.5	1.4	0.2	setosa	56.07743
2	4.9	3.0	1.4	0.2	setosa	46.18141
3	4.7	3.2	1.3	0.2	setosa	47.24955
4	4.6	3.1	1.5	0.2	setosa	44.79911
5	5.0	3.6	1.4	0.2	setosa	56.54867
6	5.4	3.9	1.7	0.4	setosa	66.16194
7	4.6	3.4	1.4	0.3	setosa	49.13451
8	5.0	3.4	1.5	0.2	setosa	53.40708
9	4.4	2.9	1.4	0.2	setosa	40.08672
10	4.9	3.1	1.5	0.1	setosa	47.72079
11	5.4	3.7	1.5	0.2	setosa	62.76902
12	4.8	3.4	1.6	0.2	setosa	51.27079
13	4.8	3.0	1.4	0.1	setosa	45.23893
14	4.3	3.0	1.1	0.1	setosa	40.52655
15	5.8	4.0	1.2	0.2	setosa	72.88495
16	5.7	4.4	1.5	0.4	setosa	78.79114
17	5.4	3.9	1.3	0.4	setosa	66.16194
18	5.1	3.5	1.4	0.3	setosa	56.07743
19	5.7	3.8	1.7	0.3	setosa	68.04690
20	5.1	3.8	1.5	0.3	setosa	60.88407
21	5.4	3.4	1.7	0.2	setosa	57.67964
22	5.1	3.7	1.5	0.4	setosa	59.28185
23	4.6	3.6	1.0	0.2	setosa	52.02477
24	5.1	3.3	1.7	0.5	setosa	52.87300
25	4.8	3.4	1.9	0.2	setosa	51.27079
26	5.0	3.0	1.6	0.2	setosa	47.12389

27	5.0	3.4	1.6	0.4	setosa	53.40708
28	5.2	3.5	1.5	0.2	setosa	57.17699
29	5.2	3.4	1.4	0.2	setosa	55.54336
30	4.7	3.2	1.6	0.2	setosa	47.24955
31	4.8	3.1	1.6	0.2	setosa	46.74690
32	5.4	3.4	1.5	0.4	setosa	57.67964
33	5.2	4.1	1.5	0.1	setosa	66.97876
34	5.5	4.2	1.4	0.2	setosa	72.57079
35	4.9	3.1	1.5	0.2	setosa	47.72079
36	5.0	3.2	1.2	0.2	setosa	50.26548
37	5.5	3.5	1.3	0.2	setosa	60.47566
38	4.9	3.6	1.4	0.1	setosa	55.41769
39	4.4	3.0	1.3	0.2	setosa	41.46902
40	5.1	3.4	1.5	0.2	setosa	54.47522
41	5.0	3.5	1.3	0.3	setosa	54.97787
42	4.5	2.3	1.3	0.3	setosa	32.51548
43	4.4	3.2	1.3	0.2	setosa	44.23362
44	5.0	3.5	1.6	0.6	setosa	54.97787
45	5.1	3.8	1.9	0.4	setosa	60.88407
46	4.8	3.0	1.4	0.3	setosa	45.23893
47	5.1	3.8	1.6	0.2	setosa	60.88407
48	4.6	3.2	1.4	0.2	setosa	46.24424
49	5.3	3.7	1.5	0.2	setosa	61.60663
50	5.0	3.3	1.4	0.2	setosa	51.83628
51	7.0	3.2	4.7	1.4	versicolor	70.37168
52	6.4	3.2	4.5	1.5	versicolor	64.33982
53	6.9	3.1	4.9	1.5	versicolor	67.19867
54	5.5	2.3	4.0	1.3	versicolor	39.74115
55	6.5	2.8	4.6	1.5	versicolor	57.17699
56	5.7	2.8	4.5	1.3	versicolor	50.13982
57	6.3	3.3	4.7	1.6	versicolor	65.31371
58	4.9	2.4	3.3	1.0	versicolor	36.94513
59	6.6	2.9	4.6	1.3	versicolor	60.13008
60	5.2	2.7	3.9	1.4	versicolor	44.10796
61	5.0	2.0	3.5	1.0	versicolor	31.41593
62	5.9	3.0	4.2	1.5	versicolor	55.60619
63	6.0	2.2	4.0	1.0	versicolor	41.46902
64	6.1	2.9	4.7	1.4	versicolor	55.57477
65	5.6	2.9	3.6	1.3	versicolor	51.01946
66	6.7	3.1	4.4	1.4	versicolor	65.25088
67	5.6	3.0	4.5	1.5	versicolor	52.77876
68	5.8	2.7	4.1	1.0	versicolor	49.19734
69	6.2	2.2	4.5	1.5	versicolor	42.85132

70	5.6	2.5	3.9	1.1 versicolor	43.98230
71	5.9	3.2	4.8	1.8 versicolor	59.31327
72	6.1	2.8	4.0	1.3 versicolor	53.65840
73	6.3	2.5	4.9	1.5 versicolor	49.48008
74	6.1	2.8	4.7	1.2 versicolor	53.65840
75	6.4	2.9	4.3	1.3 versicolor	58.30796
76	6.6	3.0	4.4	1.4 versicolor	62.20353
77	6.8	2.8	4.8	1.4 versicolor	59.81592
78	6.7	3.0	5.0	1.7 versicolor	63.14601
79	6.0	2.9	4.5	1.5 versicolor	54.66371
80	5.7	2.6	3.5	1.0 versicolor	46.55840
81	5.5	2.4	3.8	1.1 versicolor	41.46902
82	5.5	2.4	3.7	1.0 versicolor	41.46902
83	5.8	2.7	3.9	1.2 versicolor	49.19734
84	6.0	2.7	5.1	1.6 versicolor	50.89380
85	5.4	3.0	4.5	1.5 versicolor	50.89380
86	6.0	3.4	4.5	1.6 versicolor	64.08849
87	6.7	3.1	4.7	1.5 versicolor	65.25088
88	6.3	2.3	4.4	1.3 versicolor	45.52168
89	5.6	3.0	4.1	1.3 versicolor	52.77876
90	5.5	2.5	4.0	1.3 versicolor	43.19690
91	5.5	2.6	4.4	1.2 versicolor	44.92477
92	6.1	3.0	4.6	1.4 versicolor	57.49115
93	5.8	2.6	4.0	1.2 versicolor	47.37522
94	5.0	2.3	3.3	1.0 versicolor	36.12832
95	5.6	2.7	4.2	1.3 versicolor	47.50088
96	5.7	3.0	4.2	1.2 versicolor	53.72123
97	5.7	2.9	4.2	1.3 versicolor	51.93053
98	6.2	2.9	4.3	1.3 versicolor	56.48584
99	5.1	2.5	3.0	1.1 versicolor	40.05531
100	5.7	2.8	4.1	1.3 versicolor	50.13982
101	6.3	3.3	6.0	2.5 virginica	65.31371
102	5.8	2.7	5.1	1.9 virginica	49.19734
103	7.1	3.0	5.9	2.1 virginica	66.91592
104	6.3	2.9	5.6	1.8 virginica	57.39690
105	6.5	3.0	5.8	2.2 virginica	61.26106
106	7.6	3.0	6.6	2.1 virginica	71.62831
107	4.9	2.5	4.5	1.7 virginica	38.48451
108	7.3	2.9	6.3	1.8 virginica	66.50752
109	6.7	2.5	5.8	1.8 virginica	52.62168
110	7.2	3.6	6.1	2.5 virginica	81.43008
111	6.5	3.2	5.1	2.0 virginica	65.34513
112	6.4	2.7	5.3	1.9 virginica	54.28672

113	6.8	3.0	5.5	2.1	virginica	64.08849
114	5.7	2.5	5.0	2.0	virginica	44.76770
115	5.8	2.8	5.1	2.4	virginica	51.01946
116	6.4	3.2	5.3	2.3	virginica	64.33982
117	6.5	3.0	5.5	1.8	virginica	61.26106
118	7.7	3.8	6.7	2.2	virginica	91.92300
119	7.7	2.6	6.9	2.3	virginica	62.89468
120	6.0	2.2	5.0	1.5	virginica	41.46902
121	6.9	3.2	5.7	2.3	virginica	69.36637
122	5.6	2.8	4.9	2.0	virginica	49.26017
123	7.7	2.8	6.7	2.0	virginica	67.73274
124	6.3	2.7	4.9	1.8	virginica	53.43849
125	6.7	3.3	5.7	2.1	virginica	69.46061
126	7.2	3.2	6.0	1.8	virginica	72.38229
127	6.2	2.8	4.8	1.8	virginica	54.53805
128	6.1	3.0	4.9	1.8	virginica	57.49115
129	6.4	2.8	5.6	2.1	virginica	56.29734
130	7.2	3.0	5.8	1.6	virginica	67.85840
131	7.4	2.8	6.1	1.9	virginica	65.09380
132	7.9	3.8	6.4	2.0	virginica	94.31061
133	6.4	2.8	5.6	2.2	virginica	56.29734
134	6.3	2.8	5.1	1.5	virginica	55.41769
135	6.1	2.6	5.6	1.4	virginica	49.82566
136	7.7	3.0	6.1	2.3	virginica	72.57079
137	6.3	3.4	5.6	2.4	virginica	67.29291
138	6.4	3.1	5.5	1.8	virginica	62.32920
139	6.0	3.0	4.8	1.8	virginica	56.54867
140	6.9	3.1	5.4	2.1	virginica	67.19867
141	6.7	3.1	5.6	2.4	virginica	65.25088
142	6.9	3.1	5.1	2.3	virginica	67.19867
143	5.8	2.7	5.1	1.9	virginica	49.19734
144	6.8	3.2	5.9	2.3	virginica	68.36106
145	6.7	3.3	5.7	2.5	virginica	69.46061
146	6.7	3.0	5.2	2.3	virginica	63.14601
147	6.3	2.5	5.0	1.9	virginica	49.48008
148	6.5	3.0	5.2	2.0	virginica	61.26106
149	6.2	3.4	5.4	2.3	virginica	66.22477
150	5.9	3.0	5.1	1.8	virginica	55.60619

```
iris %>% mutate(area_Sepal = pi*Sepal.Length*Sepal.Width)
```

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species	area_Sepal
--------------	-------------	--------------	-------------	---------	------------

1	5.1	3.5	1.4	0.2	setosa	56.07743
2	4.9	3.0	1.4	0.2	setosa	46.18141
3	4.7	3.2	1.3	0.2	setosa	47.24955
4	4.6	3.1	1.5	0.2	setosa	44.79911
5	5.0	3.6	1.4	0.2	setosa	56.54867
6	5.4	3.9	1.7	0.4	setosa	66.16194
7	4.6	3.4	1.4	0.3	setosa	49.13451
8	5.0	3.4	1.5	0.2	setosa	53.40708
9	4.4	2.9	1.4	0.2	setosa	40.08672
10	4.9	3.1	1.5	0.1	setosa	47.72079
11	5.4	3.7	1.5	0.2	setosa	62.76902
12	4.8	3.4	1.6	0.2	setosa	51.27079
13	4.8	3.0	1.4	0.1	setosa	45.23893
14	4.3	3.0	1.1	0.1	setosa	40.52655
15	5.8	4.0	1.2	0.2	setosa	72.88495
16	5.7	4.4	1.5	0.4	setosa	78.79114
17	5.4	3.9	1.3	0.4	setosa	66.16194
18	5.1	3.5	1.4	0.3	setosa	56.07743
19	5.7	3.8	1.7	0.3	setosa	68.04690
20	5.1	3.8	1.5	0.3	setosa	60.88407
21	5.4	3.4	1.7	0.2	setosa	57.67964
22	5.1	3.7	1.5	0.4	setosa	59.28185
23	4.6	3.6	1.0	0.2	setosa	52.02477
24	5.1	3.3	1.7	0.5	setosa	52.87300
25	4.8	3.4	1.9	0.2	setosa	51.27079
26	5.0	3.0	1.6	0.2	setosa	47.12389
27	5.0	3.4	1.6	0.4	setosa	53.40708
28	5.2	3.5	1.5	0.2	setosa	57.17699
29	5.2	3.4	1.4	0.2	setosa	55.54336
30	4.7	3.2	1.6	0.2	setosa	47.24955
31	4.8	3.1	1.6	0.2	setosa	46.74690
32	5.4	3.4	1.5	0.4	setosa	57.67964
33	5.2	4.1	1.5	0.1	setosa	66.97876
34	5.5	4.2	1.4	0.2	setosa	72.57079
35	4.9	3.1	1.5	0.2	setosa	47.72079
36	5.0	3.2	1.2	0.2	setosa	50.26548
37	5.5	3.5	1.3	0.2	setosa	60.47566
38	4.9	3.6	1.4	0.1	setosa	55.41769
39	4.4	3.0	1.3	0.2	setosa	41.46902
40	5.1	3.4	1.5	0.2	setosa	54.47522
41	5.0	3.5	1.3	0.3	setosa	54.97787
42	4.5	2.3	1.3	0.3	setosa	32.51548
43	4.4	3.2	1.3	0.2	setosa	44.23362

44	5.0	3.5	1.6	0.6	setosa	54.97787
45	5.1	3.8	1.9	0.4	setosa	60.88407
46	4.8	3.0	1.4	0.3	setosa	45.23893
47	5.1	3.8	1.6	0.2	setosa	60.88407
48	4.6	3.2	1.4	0.2	setosa	46.24424
49	5.3	3.7	1.5	0.2	setosa	61.60663
50	5.0	3.3	1.4	0.2	setosa	51.83628
51	7.0	3.2	4.7	1.4	versicolor	70.37168
52	6.4	3.2	4.5	1.5	versicolor	64.33982
53	6.9	3.1	4.9	1.5	versicolor	67.19867
54	5.5	2.3	4.0	1.3	versicolor	39.74115
55	6.5	2.8	4.6	1.5	versicolor	57.17699
56	5.7	2.8	4.5	1.3	versicolor	50.13982
57	6.3	3.3	4.7	1.6	versicolor	65.31371
58	4.9	2.4	3.3	1.0	versicolor	36.94513
59	6.6	2.9	4.6	1.3	versicolor	60.13008
60	5.2	2.7	3.9	1.4	versicolor	44.10796
61	5.0	2.0	3.5	1.0	versicolor	31.41593
62	5.9	3.0	4.2	1.5	versicolor	55.60619
63	6.0	2.2	4.0	1.0	versicolor	41.46902
64	6.1	2.9	4.7	1.4	versicolor	55.57477
65	5.6	2.9	3.6	1.3	versicolor	51.01946
66	6.7	3.1	4.4	1.4	versicolor	65.25088
67	5.6	3.0	4.5	1.5	versicolor	52.77876
68	5.8	2.7	4.1	1.0	versicolor	49.19734
69	6.2	2.2	4.5	1.5	versicolor	42.85132
70	5.6	2.5	3.9	1.1	versicolor	43.98230
71	5.9	3.2	4.8	1.8	versicolor	59.31327
72	6.1	2.8	4.0	1.3	versicolor	53.65840
73	6.3	2.5	4.9	1.5	versicolor	49.48008
74	6.1	2.8	4.7	1.2	versicolor	53.65840
75	6.4	2.9	4.3	1.3	versicolor	58.30796
76	6.6	3.0	4.4	1.4	versicolor	62.20353
77	6.8	2.8	4.8	1.4	versicolor	59.81592
78	6.7	3.0	5.0	1.7	versicolor	63.14601
79	6.0	2.9	4.5	1.5	versicolor	54.66371
80	5.7	2.6	3.5	1.0	versicolor	46.55840
81	5.5	2.4	3.8	1.1	versicolor	41.46902
82	5.5	2.4	3.7	1.0	versicolor	41.46902
83	5.8	2.7	3.9	1.2	versicolor	49.19734
84	6.0	2.7	5.1	1.6	versicolor	50.89380
85	5.4	3.0	4.5	1.5	versicolor	50.89380
86	6.0	3.4	4.5	1.6	versicolor	64.08849

87	6.7	3.1	4.7	1.5 versicolor	65.25088
88	6.3	2.3	4.4	1.3 versicolor	45.52168
89	5.6	3.0	4.1	1.3 versicolor	52.77876
90	5.5	2.5	4.0	1.3 versicolor	43.19690
91	5.5	2.6	4.4	1.2 versicolor	44.92477
92	6.1	3.0	4.6	1.4 versicolor	57.49115
93	5.8	2.6	4.0	1.2 versicolor	47.37522
94	5.0	2.3	3.3	1.0 versicolor	36.12832
95	5.6	2.7	4.2	1.3 versicolor	47.50088
96	5.7	3.0	4.2	1.2 versicolor	53.72123
97	5.7	2.9	4.2	1.3 versicolor	51.93053
98	6.2	2.9	4.3	1.3 versicolor	56.48584
99	5.1	2.5	3.0	1.1 versicolor	40.05531
100	5.7	2.8	4.1	1.3 versicolor	50.13982
101	6.3	3.3	6.0	2.5 virginica	65.31371
102	5.8	2.7	5.1	1.9 virginica	49.19734
103	7.1	3.0	5.9	2.1 virginica	66.91592
104	6.3	2.9	5.6	1.8 virginica	57.39690
105	6.5	3.0	5.8	2.2 virginica	61.26106
106	7.6	3.0	6.6	2.1 virginica	71.62831
107	4.9	2.5	4.5	1.7 virginica	38.48451
108	7.3	2.9	6.3	1.8 virginica	66.50752
109	6.7	2.5	5.8	1.8 virginica	52.62168
110	7.2	3.6	6.1	2.5 virginica	81.43008
111	6.5	3.2	5.1	2.0 virginica	65.34513
112	6.4	2.7	5.3	1.9 virginica	54.28672
113	6.8	3.0	5.5	2.1 virginica	64.08849
114	5.7	2.5	5.0	2.0 virginica	44.76770
115	5.8	2.8	5.1	2.4 virginica	51.01946
116	6.4	3.2	5.3	2.3 virginica	64.33982
117	6.5	3.0	5.5	1.8 virginica	61.26106
118	7.7	3.8	6.7	2.2 virginica	91.92300
119	7.7	2.6	6.9	2.3 virginica	62.89468
120	6.0	2.2	5.0	1.5 virginica	41.46902
121	6.9	3.2	5.7	2.3 virginica	69.36637
122	5.6	2.8	4.9	2.0 virginica	49.26017
123	7.7	2.8	6.7	2.0 virginica	67.73274
124	6.3	2.7	4.9	1.8 virginica	53.43849
125	6.7	3.3	5.7	2.1 virginica	69.46061
126	7.2	3.2	6.0	1.8 virginica	72.38229
127	6.2	2.8	4.8	1.8 virginica	54.53805
128	6.1	3.0	4.9	1.8 virginica	57.49115
129	6.4	2.8	5.6	2.1 virginica	56.29734

130	7.2	3.0	5.8	1.6	virginica	67.85840
131	7.4	2.8	6.1	1.9	virginica	65.09380
132	7.9	3.8	6.4	2.0	virginica	94.31061
133	6.4	2.8	5.6	2.2	virginica	56.29734
134	6.3	2.8	5.1	1.5	virginica	55.41769
135	6.1	2.6	5.6	1.4	virginica	49.82566
136	7.7	3.0	6.1	2.3	virginica	72.57079
137	6.3	3.4	5.6	2.4	virginica	67.29291
138	6.4	3.1	5.5	1.8	virginica	62.32920
139	6.0	3.0	4.8	1.8	virginica	56.54867
140	6.9	3.1	5.4	2.1	virginica	67.19867
141	6.7	3.1	5.6	2.4	virginica	65.25088
142	6.9	3.1	5.1	2.3	virginica	67.19867
143	5.8	2.7	5.1	1.9	virginica	49.19734
144	6.8	3.2	5.9	2.3	virginica	68.36106
145	6.7	3.3	5.7	2.5	virginica	69.46061
146	6.7	3.0	5.2	2.3	virginica	63.14601
147	6.3	2.5	5.0	1.9	virginica	49.48008
148	6.5	3.0	5.2	2.0	virginica	61.26106
149	6.2	3.4	5.4	2.3	virginica	66.22477
150	5.9	3.0	5.1	1.8	virginica	55.60619

Você errou a coluna `petal.lenght` e precisa multiplicar por 2.

```
iris %>% mutate(Petal.Length = Petal.Length*2)
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	5.1	3.5	2.8	0.2	setosa
2	4.9	3.0	2.8	0.2	setosa
3	4.7	3.2	2.6	0.2	setosa
4	4.6	3.1	3.0	0.2	setosa
5	5.0	3.6	2.8	0.2	setosa
6	5.4	3.9	3.4	0.4	setosa
7	4.6	3.4	2.8	0.3	setosa
8	5.0	3.4	3.0	0.2	setosa
9	4.4	2.9	2.8	0.2	setosa
10	4.9	3.1	3.0	0.1	setosa
11	5.4	3.7	3.0	0.2	setosa
12	4.8	3.4	3.2	0.2	setosa
13	4.8	3.0	2.8	0.1	setosa
14	4.3	3.0	2.2	0.1	setosa
15	5.8	4.0	2.4	0.2	setosa

16	5.7	4.4	3.0	0.4	setosa
17	5.4	3.9	2.6	0.4	setosa
18	5.1	3.5	2.8	0.3	setosa
19	5.7	3.8	3.4	0.3	setosa
20	5.1	3.8	3.0	0.3	setosa
21	5.4	3.4	3.4	0.2	setosa
22	5.1	3.7	3.0	0.4	setosa
23	4.6	3.6	2.0	0.2	setosa
24	5.1	3.3	3.4	0.5	setosa
25	4.8	3.4	3.8	0.2	setosa
26	5.0	3.0	3.2	0.2	setosa
27	5.0	3.4	3.2	0.4	setosa
28	5.2	3.5	3.0	0.2	setosa
29	5.2	3.4	2.8	0.2	setosa
30	4.7	3.2	3.2	0.2	setosa
31	4.8	3.1	3.2	0.2	setosa
32	5.4	3.4	3.0	0.4	setosa
33	5.2	4.1	3.0	0.1	setosa
34	5.5	4.2	2.8	0.2	setosa
35	4.9	3.1	3.0	0.2	setosa
36	5.0	3.2	2.4	0.2	setosa
37	5.5	3.5	2.6	0.2	setosa
38	4.9	3.6	2.8	0.1	setosa
39	4.4	3.0	2.6	0.2	setosa
40	5.1	3.4	3.0	0.2	setosa
41	5.0	3.5	2.6	0.3	setosa
42	4.5	2.3	2.6	0.3	setosa
43	4.4	3.2	2.6	0.2	setosa
44	5.0	3.5	3.2	0.6	setosa
45	5.1	3.8	3.8	0.4	setosa
46	4.8	3.0	2.8	0.3	setosa
47	5.1	3.8	3.2	0.2	setosa
48	4.6	3.2	2.8	0.2	setosa
49	5.3	3.7	3.0	0.2	setosa
50	5.0	3.3	2.8	0.2	setosa
51	7.0	3.2	9.4	1.4	versicolor
52	6.4	3.2	9.0	1.5	versicolor
53	6.9	3.1	9.8	1.5	versicolor
54	5.5	2.3	8.0	1.3	versicolor
55	6.5	2.8	9.2	1.5	versicolor
56	5.7	2.8	9.0	1.3	versicolor
57	6.3	3.3	9.4	1.6	versicolor
58	4.9	2.4	6.6	1.0	versicolor

59	6.6	2.9	9.2	1.3 versicolor
60	5.2	2.7	7.8	1.4 versicolor
61	5.0	2.0	7.0	1.0 versicolor
62	5.9	3.0	8.4	1.5 versicolor
63	6.0	2.2	8.0	1.0 versicolor
64	6.1	2.9	9.4	1.4 versicolor
65	5.6	2.9	7.2	1.3 versicolor
66	6.7	3.1	8.8	1.4 versicolor
67	5.6	3.0	9.0	1.5 versicolor
68	5.8	2.7	8.2	1.0 versicolor
69	6.2	2.2	9.0	1.5 versicolor
70	5.6	2.5	7.8	1.1 versicolor
71	5.9	3.2	9.6	1.8 versicolor
72	6.1	2.8	8.0	1.3 versicolor
73	6.3	2.5	9.8	1.5 versicolor
74	6.1	2.8	9.4	1.2 versicolor
75	6.4	2.9	8.6	1.3 versicolor
76	6.6	3.0	8.8	1.4 versicolor
77	6.8	2.8	9.6	1.4 versicolor
78	6.7	3.0	10.0	1.7 versicolor
79	6.0	2.9	9.0	1.5 versicolor
80	5.7	2.6	7.0	1.0 versicolor
81	5.5	2.4	7.6	1.1 versicolor
82	5.5	2.4	7.4	1.0 versicolor
83	5.8	2.7	7.8	1.2 versicolor
84	6.0	2.7	10.2	1.6 versicolor
85	5.4	3.0	9.0	1.5 versicolor
86	6.0	3.4	9.0	1.6 versicolor
87	6.7	3.1	9.4	1.5 versicolor
88	6.3	2.3	8.8	1.3 versicolor
89	5.6	3.0	8.2	1.3 versicolor
90	5.5	2.5	8.0	1.3 versicolor
91	5.5	2.6	8.8	1.2 versicolor
92	6.1	3.0	9.2	1.4 versicolor
93	5.8	2.6	8.0	1.2 versicolor
94	5.0	2.3	6.6	1.0 versicolor
95	5.6	2.7	8.4	1.3 versicolor
96	5.7	3.0	8.4	1.2 versicolor
97	5.7	2.9	8.4	1.3 versicolor
98	6.2	2.9	8.6	1.3 versicolor
99	5.1	2.5	6.0	1.1 versicolor
100	5.7	2.8	8.2	1.3 versicolor
101	6.3	3.3	12.0	2.5 virginica

102	5.8	2.7	10.2	1.9	virginica
103	7.1	3.0	11.8	2.1	virginica
104	6.3	2.9	11.2	1.8	virginica
105	6.5	3.0	11.6	2.2	virginica
106	7.6	3.0	13.2	2.1	virginica
107	4.9	2.5	9.0	1.7	virginica
108	7.3	2.9	12.6	1.8	virginica
109	6.7	2.5	11.6	1.8	virginica
110	7.2	3.6	12.2	2.5	virginica
111	6.5	3.2	10.2	2.0	virginica
112	6.4	2.7	10.6	1.9	virginica
113	6.8	3.0	11.0	2.1	virginica
114	5.7	2.5	10.0	2.0	virginica
115	5.8	2.8	10.2	2.4	virginica
116	6.4	3.2	10.6	2.3	virginica
117	6.5	3.0	11.0	1.8	virginica
118	7.7	3.8	13.4	2.2	virginica
119	7.7	2.6	13.8	2.3	virginica
120	6.0	2.2	10.0	1.5	virginica
121	6.9	3.2	11.4	2.3	virginica
122	5.6	2.8	9.8	2.0	virginica
123	7.7	2.8	13.4	2.0	virginica
124	6.3	2.7	9.8	1.8	virginica
125	6.7	3.3	11.4	2.1	virginica
126	7.2	3.2	12.0	1.8	virginica
127	6.2	2.8	9.6	1.8	virginica
128	6.1	3.0	9.8	1.8	virginica
129	6.4	2.8	11.2	2.1	virginica
130	7.2	3.0	11.6	1.6	virginica
131	7.4	2.8	12.2	1.9	virginica
132	7.9	3.8	12.8	2.0	virginica
133	6.4	2.8	11.2	2.2	virginica
134	6.3	2.8	10.2	1.5	virginica
135	6.1	2.6	11.2	1.4	virginica
136	7.7	3.0	12.2	2.3	virginica
137	6.3	3.4	11.2	2.4	virginica
138	6.4	3.1	11.0	1.8	virginica
139	6.0	3.0	9.6	1.8	virginica
140	6.9	3.1	10.8	2.1	virginica
141	6.7	3.1	11.2	2.4	virginica
142	6.9	3.1	10.2	2.3	virginica
143	5.8	2.7	10.2	1.9	virginica
144	6.8	3.2	11.8	2.3	virginica

145	6.7	3.3	11.4	2.5	virginica
146	6.7	3.0	10.4	2.3	virginica
147	6.3	2.5	10.0	1.9	virginica
148	6.5	3.0	10.4	2.0	virginica
149	6.2	3.4	10.8	2.3	virginica
150	5.9	3.0	10.2	1.8	virginica

Usando informações externas

```
iris %>% mutate(reino = "planta")
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species	reino
1	5.1	3.5	1.4	0.2	setosa	planta
2	4.9	3.0	1.4	0.2	setosa	planta
3	4.7	3.2	1.3	0.2	setosa	planta
4	4.6	3.1	1.5	0.2	setosa	planta
5	5.0	3.6	1.4	0.2	setosa	planta
6	5.4	3.9	1.7	0.4	setosa	planta
7	4.6	3.4	1.4	0.3	setosa	planta
8	5.0	3.4	1.5	0.2	setosa	planta
9	4.4	2.9	1.4	0.2	setosa	planta
10	4.9	3.1	1.5	0.1	setosa	planta
11	5.4	3.7	1.5	0.2	setosa	planta
12	4.8	3.4	1.6	0.2	setosa	planta
13	4.8	3.0	1.4	0.1	setosa	planta
14	4.3	3.0	1.1	0.1	setosa	planta
15	5.8	4.0	1.2	0.2	setosa	planta
16	5.7	4.4	1.5	0.4	setosa	planta
17	5.4	3.9	1.3	0.4	setosa	planta
18	5.1	3.5	1.4	0.3	setosa	planta
19	5.7	3.8	1.7	0.3	setosa	planta
20	5.1	3.8	1.5	0.3	setosa	planta
21	5.4	3.4	1.7	0.2	setosa	planta
22	5.1	3.7	1.5	0.4	setosa	planta
23	4.6	3.6	1.0	0.2	setosa	planta
24	5.1	3.3	1.7	0.5	setosa	planta
25	4.8	3.4	1.9	0.2	setosa	planta
26	5.0	3.0	1.6	0.2	setosa	planta
27	5.0	3.4	1.6	0.4	setosa	planta
28	5.2	3.5	1.5	0.2	setosa	planta
29	5.2	3.4	1.4	0.2	setosa	planta
30	4.7	3.2	1.6	0.2	setosa	planta

31	4.8	3.1	1.6	0.2	setosa planta
32	5.4	3.4	1.5	0.4	setosa planta
33	5.2	4.1	1.5	0.1	setosa planta
34	5.5	4.2	1.4	0.2	setosa planta
35	4.9	3.1	1.5	0.2	setosa planta
36	5.0	3.2	1.2	0.2	setosa planta
37	5.5	3.5	1.3	0.2	setosa planta
38	4.9	3.6	1.4	0.1	setosa planta
39	4.4	3.0	1.3	0.2	setosa planta
40	5.1	3.4	1.5	0.2	setosa planta
41	5.0	3.5	1.3	0.3	setosa planta
42	4.5	2.3	1.3	0.3	setosa planta
43	4.4	3.2	1.3	0.2	setosa planta
44	5.0	3.5	1.6	0.6	setosa planta
45	5.1	3.8	1.9	0.4	setosa planta
46	4.8	3.0	1.4	0.3	setosa planta
47	5.1	3.8	1.6	0.2	setosa planta
48	4.6	3.2	1.4	0.2	setosa planta
49	5.3	3.7	1.5	0.2	setosa planta
50	5.0	3.3	1.4	0.2	setosa planta
51	7.0	3.2	4.7	1.4	versicolor planta
52	6.4	3.2	4.5	1.5	versicolor planta
53	6.9	3.1	4.9	1.5	versicolor planta
54	5.5	2.3	4.0	1.3	versicolor planta
55	6.5	2.8	4.6	1.5	versicolor planta
56	5.7	2.8	4.5	1.3	versicolor planta
57	6.3	3.3	4.7	1.6	versicolor planta
58	4.9	2.4	3.3	1.0	versicolor planta
59	6.6	2.9	4.6	1.3	versicolor planta
60	5.2	2.7	3.9	1.4	versicolor planta
61	5.0	2.0	3.5	1.0	versicolor planta
62	5.9	3.0	4.2	1.5	versicolor planta
63	6.0	2.2	4.0	1.0	versicolor planta
64	6.1	2.9	4.7	1.4	versicolor planta
65	5.6	2.9	3.6	1.3	versicolor planta
66	6.7	3.1	4.4	1.4	versicolor planta
67	5.6	3.0	4.5	1.5	versicolor planta
68	5.8	2.7	4.1	1.0	versicolor planta
69	6.2	2.2	4.5	1.5	versicolor planta
70	5.6	2.5	3.9	1.1	versicolor planta
71	5.9	3.2	4.8	1.8	versicolor planta
72	6.1	2.8	4.0	1.3	versicolor planta
73	6.3	2.5	4.9	1.5	versicolor planta

74	6.1	2.8	4.7	1.2 versicolor planta
75	6.4	2.9	4.3	1.3 versicolor planta
76	6.6	3.0	4.4	1.4 versicolor planta
77	6.8	2.8	4.8	1.4 versicolor planta
78	6.7	3.0	5.0	1.7 versicolor planta
79	6.0	2.9	4.5	1.5 versicolor planta
80	5.7	2.6	3.5	1.0 versicolor planta
81	5.5	2.4	3.8	1.1 versicolor planta
82	5.5	2.4	3.7	1.0 versicolor planta
83	5.8	2.7	3.9	1.2 versicolor planta
84	6.0	2.7	5.1	1.6 versicolor planta
85	5.4	3.0	4.5	1.5 versicolor planta
86	6.0	3.4	4.5	1.6 versicolor planta
87	6.7	3.1	4.7	1.5 versicolor planta
88	6.3	2.3	4.4	1.3 versicolor planta
89	5.6	3.0	4.1	1.3 versicolor planta
90	5.5	2.5	4.0	1.3 versicolor planta
91	5.5	2.6	4.4	1.2 versicolor planta
92	6.1	3.0	4.6	1.4 versicolor planta
93	5.8	2.6	4.0	1.2 versicolor planta
94	5.0	2.3	3.3	1.0 versicolor planta
95	5.6	2.7	4.2	1.3 versicolor planta
96	5.7	3.0	4.2	1.2 versicolor planta
97	5.7	2.9	4.2	1.3 versicolor planta
98	6.2	2.9	4.3	1.3 versicolor planta
99	5.1	2.5	3.0	1.1 versicolor planta
100	5.7	2.8	4.1	1.3 versicolor planta
101	6.3	3.3	6.0	2.5 virginica planta
102	5.8	2.7	5.1	1.9 virginica planta
103	7.1	3.0	5.9	2.1 virginica planta
104	6.3	2.9	5.6	1.8 virginica planta
105	6.5	3.0	5.8	2.2 virginica planta
106	7.6	3.0	6.6	2.1 virginica planta
107	4.9	2.5	4.5	1.7 virginica planta
108	7.3	2.9	6.3	1.8 virginica planta
109	6.7	2.5	5.8	1.8 virginica planta
110	7.2	3.6	6.1	2.5 virginica planta
111	6.5	3.2	5.1	2.0 virginica planta
112	6.4	2.7	5.3	1.9 virginica planta
113	6.8	3.0	5.5	2.1 virginica planta
114	5.7	2.5	5.0	2.0 virginica planta
115	5.8	2.8	5.1	2.4 virginica planta
116	6.4	3.2	5.3	2.3 virginica planta

117	6.5	3.0	5.5	1.8	virginica	planta
118	7.7	3.8	6.7	2.2	virginica	planta
119	7.7	2.6	6.9	2.3	virginica	planta
120	6.0	2.2	5.0	1.5	virginica	planta
121	6.9	3.2	5.7	2.3	virginica	planta
122	5.6	2.8	4.9	2.0	virginica	planta
123	7.7	2.8	6.7	2.0	virginica	planta
124	6.3	2.7	4.9	1.8	virginica	planta
125	6.7	3.3	5.7	2.1	virginica	planta
126	7.2	3.2	6.0	1.8	virginica	planta
127	6.2	2.8	4.8	1.8	virginica	planta
128	6.1	3.0	4.9	1.8	virginica	planta
129	6.4	2.8	5.6	2.1	virginica	planta
130	7.2	3.0	5.8	1.6	virginica	planta
131	7.4	2.8	6.1	1.9	virginica	planta
132	7.9	3.8	6.4	2.0	virginica	planta
133	6.4	2.8	5.6	2.2	virginica	planta
134	6.3	2.8	5.1	1.5	virginica	planta
135	6.1	2.6	5.6	1.4	virginica	planta
136	7.7	3.0	6.1	2.3	virginica	planta
137	6.3	3.4	5.6	2.4	virginica	planta
138	6.4	3.1	5.5	1.8	virginica	planta
139	6.0	3.0	4.8	1.8	virginica	planta
140	6.9	3.1	5.4	2.1	virginica	planta
141	6.7	3.1	5.6	2.4	virginica	planta
142	6.9	3.1	5.1	2.3	virginica	planta
143	5.8	2.7	5.1	1.9	virginica	planta
144	6.8	3.2	5.9	2.3	virginica	planta
145	6.7	3.3	5.7	2.5	virginica	planta
146	6.7	3.0	5.2	2.3	virginica	planta
147	6.3	2.5	5.0	1.9	virginica	planta
148	6.5	3.0	5.2	2.0	virginica	planta
149	6.2	3.4	5.4	2.3	virginica	planta
150	5.9	3.0	5.1	1.8	virginica	planta

```
iris %>% mutate(reino = c("planta","fungo"))
```

```
iris %>% mutate(reino = 1:150)
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species	reino
1	5.1	3.5	1.4	0.2	setosa	1

2	4.9	3.0	1.4	0.2	setosa	2
3	4.7	3.2	1.3	0.2	setosa	3
4	4.6	3.1	1.5	0.2	setosa	4
5	5.0	3.6	1.4	0.2	setosa	5
6	5.4	3.9	1.7	0.4	setosa	6
7	4.6	3.4	1.4	0.3	setosa	7
8	5.0	3.4	1.5	0.2	setosa	8
9	4.4	2.9	1.4	0.2	setosa	9
10	4.9	3.1	1.5	0.1	setosa	10
11	5.4	3.7	1.5	0.2	setosa	11
12	4.8	3.4	1.6	0.2	setosa	12
13	4.8	3.0	1.4	0.1	setosa	13
14	4.3	3.0	1.1	0.1	setosa	14
15	5.8	4.0	1.2	0.2	setosa	15
16	5.7	4.4	1.5	0.4	setosa	16
17	5.4	3.9	1.3	0.4	setosa	17
18	5.1	3.5	1.4	0.3	setosa	18
19	5.7	3.8	1.7	0.3	setosa	19
20	5.1	3.8	1.5	0.3	setosa	20
21	5.4	3.4	1.7	0.2	setosa	21
22	5.1	3.7	1.5	0.4	setosa	22
23	4.6	3.6	1.0	0.2	setosa	23
24	5.1	3.3	1.7	0.5	setosa	24
25	4.8	3.4	1.9	0.2	setosa	25
26	5.0	3.0	1.6	0.2	setosa	26
27	5.0	3.4	1.6	0.4	setosa	27
28	5.2	3.5	1.5	0.2	setosa	28
29	5.2	3.4	1.4	0.2	setosa	29
30	4.7	3.2	1.6	0.2	setosa	30
31	4.8	3.1	1.6	0.2	setosa	31
32	5.4	3.4	1.5	0.4	setosa	32
33	5.2	4.1	1.5	0.1	setosa	33
34	5.5	4.2	1.4	0.2	setosa	34
35	4.9	3.1	1.5	0.2	setosa	35
36	5.0	3.2	1.2	0.2	setosa	36
37	5.5	3.5	1.3	0.2	setosa	37
38	4.9	3.6	1.4	0.1	setosa	38
39	4.4	3.0	1.3	0.2	setosa	39
40	5.1	3.4	1.5	0.2	setosa	40
41	5.0	3.5	1.3	0.3	setosa	41
42	4.5	2.3	1.3	0.3	setosa	42
43	4.4	3.2	1.3	0.2	setosa	43
44	5.0	3.5	1.6	0.6	setosa	44

45	5.1	3.8	1.9	0.4	setosa	45
46	4.8	3.0	1.4	0.3	setosa	46
47	5.1	3.8	1.6	0.2	setosa	47
48	4.6	3.2	1.4	0.2	setosa	48
49	5.3	3.7	1.5	0.2	setosa	49
50	5.0	3.3	1.4	0.2	setosa	50
51	7.0	3.2	4.7	1.4	versicolor	51
52	6.4	3.2	4.5	1.5	versicolor	52
53	6.9	3.1	4.9	1.5	versicolor	53
54	5.5	2.3	4.0	1.3	versicolor	54
55	6.5	2.8	4.6	1.5	versicolor	55
56	5.7	2.8	4.5	1.3	versicolor	56
57	6.3	3.3	4.7	1.6	versicolor	57
58	4.9	2.4	3.3	1.0	versicolor	58
59	6.6	2.9	4.6	1.3	versicolor	59
60	5.2	2.7	3.9	1.4	versicolor	60
61	5.0	2.0	3.5	1.0	versicolor	61
62	5.9	3.0	4.2	1.5	versicolor	62
63	6.0	2.2	4.0	1.0	versicolor	63
64	6.1	2.9	4.7	1.4	versicolor	64
65	5.6	2.9	3.6	1.3	versicolor	65
66	6.7	3.1	4.4	1.4	versicolor	66
67	5.6	3.0	4.5	1.5	versicolor	67
68	5.8	2.7	4.1	1.0	versicolor	68
69	6.2	2.2	4.5	1.5	versicolor	69
70	5.6	2.5	3.9	1.1	versicolor	70
71	5.9	3.2	4.8	1.8	versicolor	71
72	6.1	2.8	4.0	1.3	versicolor	72
73	6.3	2.5	4.9	1.5	versicolor	73
74	6.1	2.8	4.7	1.2	versicolor	74
75	6.4	2.9	4.3	1.3	versicolor	75
76	6.6	3.0	4.4	1.4	versicolor	76
77	6.8	2.8	4.8	1.4	versicolor	77
78	6.7	3.0	5.0	1.7	versicolor	78
79	6.0	2.9	4.5	1.5	versicolor	79
80	5.7	2.6	3.5	1.0	versicolor	80
81	5.5	2.4	3.8	1.1	versicolor	81
82	5.5	2.4	3.7	1.0	versicolor	82
83	5.8	2.7	3.9	1.2	versicolor	83
84	6.0	2.7	5.1	1.6	versicolor	84
85	5.4	3.0	4.5	1.5	versicolor	85
86	6.0	3.4	4.5	1.6	versicolor	86
87	6.7	3.1	4.7	1.5	versicolor	87

88	6.3	2.3	4.4	1.3 versicolor	88
89	5.6	3.0	4.1	1.3 versicolor	89
90	5.5	2.5	4.0	1.3 versicolor	90
91	5.5	2.6	4.4	1.2 versicolor	91
92	6.1	3.0	4.6	1.4 versicolor	92
93	5.8	2.6	4.0	1.2 versicolor	93
94	5.0	2.3	3.3	1.0 versicolor	94
95	5.6	2.7	4.2	1.3 versicolor	95
96	5.7	3.0	4.2	1.2 versicolor	96
97	5.7	2.9	4.2	1.3 versicolor	97
98	6.2	2.9	4.3	1.3 versicolor	98
99	5.1	2.5	3.0	1.1 versicolor	99
100	5.7	2.8	4.1	1.3 versicolor	100
101	6.3	3.3	6.0	2.5 virginica	101
102	5.8	2.7	5.1	1.9 virginica	102
103	7.1	3.0	5.9	2.1 virginica	103
104	6.3	2.9	5.6	1.8 virginica	104
105	6.5	3.0	5.8	2.2 virginica	105
106	7.6	3.0	6.6	2.1 virginica	106
107	4.9	2.5	4.5	1.7 virginica	107
108	7.3	2.9	6.3	1.8 virginica	108
109	6.7	2.5	5.8	1.8 virginica	109
110	7.2	3.6	6.1	2.5 virginica	110
111	6.5	3.2	5.1	2.0 virginica	111
112	6.4	2.7	5.3	1.9 virginica	112
113	6.8	3.0	5.5	2.1 virginica	113
114	5.7	2.5	5.0	2.0 virginica	114
115	5.8	2.8	5.1	2.4 virginica	115
116	6.4	3.2	5.3	2.3 virginica	116
117	6.5	3.0	5.5	1.8 virginica	117
118	7.7	3.8	6.7	2.2 virginica	118
119	7.7	2.6	6.9	2.3 virginica	119
120	6.0	2.2	5.0	1.5 virginica	120
121	6.9	3.2	5.7	2.3 virginica	121
122	5.6	2.8	4.9	2.0 virginica	122
123	7.7	2.8	6.7	2.0 virginica	123
124	6.3	2.7	4.9	1.8 virginica	124
125	6.7	3.3	5.7	2.1 virginica	125
126	7.2	3.2	6.0	1.8 virginica	126
127	6.2	2.8	4.8	1.8 virginica	127
128	6.1	3.0	4.9	1.8 virginica	128
129	6.4	2.8	5.6	2.1 virginica	129
130	7.2	3.0	5.8	1.6 virginica	130

131	7.4	2.8	6.1	1.9	virginica	131
132	7.9	3.8	6.4	2.0	virginica	132
133	6.4	2.8	5.6	2.2	virginica	133
134	6.3	2.8	5.1	1.5	virginica	134
135	6.1	2.6	5.6	1.4	virginica	135
136	7.7	3.0	6.1	2.3	virginica	136
137	6.3	3.4	5.6	2.4	virginica	137
138	6.4	3.1	5.5	1.8	virginica	138
139	6.0	3.0	4.8	1.8	virginica	139
140	6.9	3.1	5.4	2.1	virginica	140
141	6.7	3.1	5.6	2.4	virginica	141
142	6.9	3.1	5.1	2.3	virginica	142
143	5.8	2.7	5.1	1.9	virginica	143
144	6.8	3.2	5.9	2.3	virginica	144
145	6.7	3.3	5.7	2.5	virginica	145
146	6.7	3.0	5.2	2.3	virginica	146
147	6.3	2.5	5.0	1.9	virginica	147
148	6.5	3.0	5.2	2.0	virginica	148
149	6.2	3.4	5.4	2.3	virginica	149
150	5.9	3.0	5.1	1.8	virginica	150

```
iris %>% mutate(reino = rep(LETTERS[1:5],30))
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species	reino
1	5.1	3.5	1.4	0.2	setosa	A
2	4.9	3.0	1.4	0.2	setosa	B
3	4.7	3.2	1.3	0.2	setosa	C
4	4.6	3.1	1.5	0.2	setosa	D
5	5.0	3.6	1.4	0.2	setosa	E
6	5.4	3.9	1.7	0.4	setosa	A
7	4.6	3.4	1.4	0.3	setosa	B
8	5.0	3.4	1.5	0.2	setosa	C
9	4.4	2.9	1.4	0.2	setosa	D
10	4.9	3.1	1.5	0.1	setosa	E
11	5.4	3.7	1.5	0.2	setosa	A
12	4.8	3.4	1.6	0.2	setosa	B
13	4.8	3.0	1.4	0.1	setosa	C
14	4.3	3.0	1.1	0.1	setosa	D
15	5.8	4.0	1.2	0.2	setosa	E
16	5.7	4.4	1.5	0.4	setosa	A
17	5.4	3.9	1.3	0.4	setosa	B

18	5.1	3.5	1.4	0.3	setosa	C
19	5.7	3.8	1.7	0.3	setosa	D
20	5.1	3.8	1.5	0.3	setosa	E
21	5.4	3.4	1.7	0.2	setosa	A
22	5.1	3.7	1.5	0.4	setosa	B
23	4.6	3.6	1.0	0.2	setosa	C
24	5.1	3.3	1.7	0.5	setosa	D
25	4.8	3.4	1.9	0.2	setosa	E
26	5.0	3.0	1.6	0.2	setosa	A
27	5.0	3.4	1.6	0.4	setosa	B
28	5.2	3.5	1.5	0.2	setosa	C
29	5.2	3.4	1.4	0.2	setosa	D
30	4.7	3.2	1.6	0.2	setosa	E
31	4.8	3.1	1.6	0.2	setosa	A
32	5.4	3.4	1.5	0.4	setosa	B
33	5.2	4.1	1.5	0.1	setosa	C
34	5.5	4.2	1.4	0.2	setosa	D
35	4.9	3.1	1.5	0.2	setosa	E
36	5.0	3.2	1.2	0.2	setosa	A
37	5.5	3.5	1.3	0.2	setosa	B
38	4.9	3.6	1.4	0.1	setosa	C
39	4.4	3.0	1.3	0.2	setosa	D
40	5.1	3.4	1.5	0.2	setosa	E
41	5.0	3.5	1.3	0.3	setosa	A
42	4.5	2.3	1.3	0.3	setosa	B
43	4.4	3.2	1.3	0.2	setosa	C
44	5.0	3.5	1.6	0.6	setosa	D
45	5.1	3.8	1.9	0.4	setosa	E
46	4.8	3.0	1.4	0.3	setosa	A
47	5.1	3.8	1.6	0.2	setosa	B
48	4.6	3.2	1.4	0.2	setosa	C
49	5.3	3.7	1.5	0.2	setosa	D
50	5.0	3.3	1.4	0.2	setosa	E
51	7.0	3.2	4.7	1.4	versicolor	A
52	6.4	3.2	4.5	1.5	versicolor	B
53	6.9	3.1	4.9	1.5	versicolor	C
54	5.5	2.3	4.0	1.3	versicolor	D
55	6.5	2.8	4.6	1.5	versicolor	E
56	5.7	2.8	4.5	1.3	versicolor	A
57	6.3	3.3	4.7	1.6	versicolor	B
58	4.9	2.4	3.3	1.0	versicolor	C
59	6.6	2.9	4.6	1.3	versicolor	D
60	5.2	2.7	3.9	1.4	versicolor	E

61	5.0	2.0	3.5	1.0 versicolor	A
62	5.9	3.0	4.2	1.5 versicolor	B
63	6.0	2.2	4.0	1.0 versicolor	C
64	6.1	2.9	4.7	1.4 versicolor	D
65	5.6	2.9	3.6	1.3 versicolor	E
66	6.7	3.1	4.4	1.4 versicolor	A
67	5.6	3.0	4.5	1.5 versicolor	B
68	5.8	2.7	4.1	1.0 versicolor	C
69	6.2	2.2	4.5	1.5 versicolor	D
70	5.6	2.5	3.9	1.1 versicolor	E
71	5.9	3.2	4.8	1.8 versicolor	A
72	6.1	2.8	4.0	1.3 versicolor	B
73	6.3	2.5	4.9	1.5 versicolor	C
74	6.1	2.8	4.7	1.2 versicolor	D
75	6.4	2.9	4.3	1.3 versicolor	E
76	6.6	3.0	4.4	1.4 versicolor	A
77	6.8	2.8	4.8	1.4 versicolor	B
78	6.7	3.0	5.0	1.7 versicolor	C
79	6.0	2.9	4.5	1.5 versicolor	D
80	5.7	2.6	3.5	1.0 versicolor	E
81	5.5	2.4	3.8	1.1 versicolor	A
82	5.5	2.4	3.7	1.0 versicolor	B
83	5.8	2.7	3.9	1.2 versicolor	C
84	6.0	2.7	5.1	1.6 versicolor	D
85	5.4	3.0	4.5	1.5 versicolor	E
86	6.0	3.4	4.5	1.6 versicolor	A
87	6.7	3.1	4.7	1.5 versicolor	B
88	6.3	2.3	4.4	1.3 versicolor	C
89	5.6	3.0	4.1	1.3 versicolor	D
90	5.5	2.5	4.0	1.3 versicolor	E
91	5.5	2.6	4.4	1.2 versicolor	A
92	6.1	3.0	4.6	1.4 versicolor	B
93	5.8	2.6	4.0	1.2 versicolor	C
94	5.0	2.3	3.3	1.0 versicolor	D
95	5.6	2.7	4.2	1.3 versicolor	E
96	5.7	3.0	4.2	1.2 versicolor	A
97	5.7	2.9	4.2	1.3 versicolor	B
98	6.2	2.9	4.3	1.3 versicolor	C
99	5.1	2.5	3.0	1.1 versicolor	D
100	5.7	2.8	4.1	1.3 versicolor	E
101	6.3	3.3	6.0	2.5 virginica	A
102	5.8	2.7	5.1	1.9 virginica	B
103	7.1	3.0	5.9	2.1 virginica	C

104	6.3	2.9	5.6	1.8	virginica	D
105	6.5	3.0	5.8	2.2	virginica	E
106	7.6	3.0	6.6	2.1	virginica	A
107	4.9	2.5	4.5	1.7	virginica	B
108	7.3	2.9	6.3	1.8	virginica	C
109	6.7	2.5	5.8	1.8	virginica	D
110	7.2	3.6	6.1	2.5	virginica	E
111	6.5	3.2	5.1	2.0	virginica	A
112	6.4	2.7	5.3	1.9	virginica	B
113	6.8	3.0	5.5	2.1	virginica	C
114	5.7	2.5	5.0	2.0	virginica	D
115	5.8	2.8	5.1	2.4	virginica	E
116	6.4	3.2	5.3	2.3	virginica	A
117	6.5	3.0	5.5	1.8	virginica	B
118	7.7	3.8	6.7	2.2	virginica	C
119	7.7	2.6	6.9	2.3	virginica	D
120	6.0	2.2	5.0	1.5	virginica	E
121	6.9	3.2	5.7	2.3	virginica	A
122	5.6	2.8	4.9	2.0	virginica	B
123	7.7	2.8	6.7	2.0	virginica	C
124	6.3	2.7	4.9	1.8	virginica	D
125	6.7	3.3	5.7	2.1	virginica	E
126	7.2	3.2	6.0	1.8	virginica	A
127	6.2	2.8	4.8	1.8	virginica	B
128	6.1	3.0	4.9	1.8	virginica	C
129	6.4	2.8	5.6	2.1	virginica	D
130	7.2	3.0	5.8	1.6	virginica	E
131	7.4	2.8	6.1	1.9	virginica	A
132	7.9	3.8	6.4	2.0	virginica	B
133	6.4	2.8	5.6	2.2	virginica	C
134	6.3	2.8	5.1	1.5	virginica	D
135	6.1	2.6	5.6	1.4	virginica	E
136	7.7	3.0	6.1	2.3	virginica	A
137	6.3	3.4	5.6	2.4	virginica	B
138	6.4	3.1	5.5	1.8	virginica	C
139	6.0	3.0	4.8	1.8	virginica	D
140	6.9	3.1	5.4	2.1	virginica	E
141	6.7	3.1	5.6	2.4	virginica	A
142	6.9	3.1	5.1	2.3	virginica	B
143	5.8	2.7	5.1	1.9	virginica	C
144	6.8	3.2	5.9	2.3	virginica	D
145	6.7	3.3	5.7	2.5	virginica	E
146	6.7	3.0	5.2	2.3	virginica	A

147	6.3	2.5	5.0	1.9	virginica	B
148	6.5	3.0	5.2	2.0	virginica	C
149	6.2	3.4	5.4	2.3	virginica	D
150	5.9	3.0	5.1	1.8	virginica	E

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iris %>% mutate(Code = paste("spc",Species,Petal.Length,Petal.Width,
                             sep = '_'))
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	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
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2	4.9	3.0	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	4.6	3.1	1.5	0.2	setosa
5	5.0	3.6	1.4	0.2	setosa
6	5.4	3.9	1.7	0.4	setosa
7	4.6	3.4	1.4	0.3	setosa
8	5.0	3.4	1.5	0.2	setosa
9	4.4	2.9	1.4	0.2	setosa
10	4.9	3.1	1.5	0.1	setosa
11	5.4	3.7	1.5	0.2	setosa
12	4.8	3.4	1.6	0.2	setosa
13	4.8	3.0	1.4	0.1	setosa
14	4.3	3.0	1.1	0.1	setosa
15	5.8	4.0	1.2	0.2	setosa
16	5.7	4.4	1.5	0.4	setosa
17	5.4	3.9	1.3	0.4	setosa
18	5.1	3.5	1.4	0.3	setosa
19	5.7	3.8	1.7	0.3	setosa
20	5.1	3.8	1.5	0.3	setosa
21	5.4	3.4	1.7	0.2	setosa
22	5.1	3.7	1.5	0.4	setosa
23	4.6	3.6	1.0	0.2	setosa
24	5.1	3.3	1.7	0.5	setosa
25	4.8	3.4	1.9	0.2	setosa
26	5.0	3.0	1.6	0.2	setosa
27	5.0	3.4	1.6	0.4	setosa
28	5.2	3.5	1.5	0.2	setosa
29	5.2	3.4	1.4	0.2	setosa
30	4.7	3.2	1.6	0.2	setosa
31	4.8	3.1	1.6	0.2	setosa
32	5.4	3.4	1.5	0.4	setosa

33	5.2	4.1	1.5	0.1	setosa
34	5.5	4.2	1.4	0.2	setosa
35	4.9	3.1	1.5	0.2	setosa
36	5.0	3.2	1.2	0.2	setosa
37	5.5	3.5	1.3	0.2	setosa
38	4.9	3.6	1.4	0.1	setosa
39	4.4	3.0	1.3	0.2	setosa
40	5.1	3.4	1.5	0.2	setosa
41	5.0	3.5	1.3	0.3	setosa
42	4.5	2.3	1.3	0.3	setosa
43	4.4	3.2	1.3	0.2	setosa
44	5.0	3.5	1.6	0.6	setosa
45	5.1	3.8	1.9	0.4	setosa
46	4.8	3.0	1.4	0.3	setosa
47	5.1	3.8	1.6	0.2	setosa
48	4.6	3.2	1.4	0.2	setosa
49	5.3	3.7	1.5	0.2	setosa
50	5.0	3.3	1.4	0.2	setosa
51	7.0	3.2	4.7	1.4	versicolor
52	6.4	3.2	4.5	1.5	versicolor
53	6.9	3.1	4.9	1.5	versicolor
54	5.5	2.3	4.0	1.3	versicolor
55	6.5	2.8	4.6	1.5	versicolor
56	5.7	2.8	4.5	1.3	versicolor
57	6.3	3.3	4.7	1.6	versicolor
58	4.9	2.4	3.3	1.0	versicolor
59	6.6	2.9	4.6	1.3	versicolor
60	5.2	2.7	3.9	1.4	versicolor
61	5.0	2.0	3.5	1.0	versicolor
62	5.9	3.0	4.2	1.5	versicolor
63	6.0	2.2	4.0	1.0	versicolor
64	6.1	2.9	4.7	1.4	versicolor
65	5.6	2.9	3.6	1.3	versicolor
66	6.7	3.1	4.4	1.4	versicolor
67	5.6	3.0	4.5	1.5	versicolor
68	5.8	2.7	4.1	1.0	versicolor
69	6.2	2.2	4.5	1.5	versicolor
70	5.6	2.5	3.9	1.1	versicolor
71	5.9	3.2	4.8	1.8	versicolor
72	6.1	2.8	4.0	1.3	versicolor
73	6.3	2.5	4.9	1.5	versicolor
74	6.1	2.8	4.7	1.2	versicolor
75	6.4	2.9	4.3	1.3	versicolor

76	6.6	3.0	4.4	1.4 versicolor
77	6.8	2.8	4.8	1.4 versicolor
78	6.7	3.0	5.0	1.7 versicolor
79	6.0	2.9	4.5	1.5 versicolor
80	5.7	2.6	3.5	1.0 versicolor
81	5.5	2.4	3.8	1.1 versicolor
82	5.5	2.4	3.7	1.0 versicolor
83	5.8	2.7	3.9	1.2 versicolor
84	6.0	2.7	5.1	1.6 versicolor
85	5.4	3.0	4.5	1.5 versicolor
86	6.0	3.4	4.5	1.6 versicolor
87	6.7	3.1	4.7	1.5 versicolor
88	6.3	2.3	4.4	1.3 versicolor
89	5.6	3.0	4.1	1.3 versicolor
90	5.5	2.5	4.0	1.3 versicolor
91	5.5	2.6	4.4	1.2 versicolor
92	6.1	3.0	4.6	1.4 versicolor
93	5.8	2.6	4.0	1.2 versicolor
94	5.0	2.3	3.3	1.0 versicolor
95	5.6	2.7	4.2	1.3 versicolor
96	5.7	3.0	4.2	1.2 versicolor
97	5.7	2.9	4.2	1.3 versicolor
98	6.2	2.9	4.3	1.3 versicolor
99	5.1	2.5	3.0	1.1 versicolor
100	5.7	2.8	4.1	1.3 versicolor
101	6.3	3.3	6.0	2.5 virginica
102	5.8	2.7	5.1	1.9 virginica
103	7.1	3.0	5.9	2.1 virginica
104	6.3	2.9	5.6	1.8 virginica
105	6.5	3.0	5.8	2.2 virginica
106	7.6	3.0	6.6	2.1 virginica
107	4.9	2.5	4.5	1.7 virginica
108	7.3	2.9	6.3	1.8 virginica
109	6.7	2.5	5.8	1.8 virginica
110	7.2	3.6	6.1	2.5 virginica
111	6.5	3.2	5.1	2.0 virginica
112	6.4	2.7	5.3	1.9 virginica
113	6.8	3.0	5.5	2.1 virginica
114	5.7	2.5	5.0	2.0 virginica
115	5.8	2.8	5.1	2.4 virginica
116	6.4	3.2	5.3	2.3 virginica
117	6.5	3.0	5.5	1.8 virginica
118	7.7	3.8	6.7	2.2 virginica

119	7.7	2.6	6.9	2.3	virginica
120	6.0	2.2	5.0	1.5	virginica
121	6.9	3.2	5.7	2.3	virginica
122	5.6	2.8	4.9	2.0	virginica
123	7.7	2.8	6.7	2.0	virginica
124	6.3	2.7	4.9	1.8	virginica
125	6.7	3.3	5.7	2.1	virginica
126	7.2	3.2	6.0	1.8	virginica
127	6.2	2.8	4.8	1.8	virginica
128	6.1	3.0	4.9	1.8	virginica
129	6.4	2.8	5.6	2.1	virginica
130	7.2	3.0	5.8	1.6	virginica
131	7.4	2.8	6.1	1.9	virginica
132	7.9	3.8	6.4	2.0	virginica
133	6.4	2.8	5.6	2.2	virginica
134	6.3	2.8	5.1	1.5	virginica
135	6.1	2.6	5.6	1.4	virginica
136	7.7	3.0	6.1	2.3	virginica
137	6.3	3.4	5.6	2.4	virginica
138	6.4	3.1	5.5	1.8	virginica
139	6.0	3.0	4.8	1.8	virginica
140	6.9	3.1	5.4	2.1	virginica
141	6.7	3.1	5.6	2.4	virginica
142	6.9	3.1	5.1	2.3	virginica
143	5.8	2.7	5.1	1.9	virginica
144	6.8	3.2	5.9	2.3	virginica
145	6.7	3.3	5.7	2.5	virginica
146	6.7	3.0	5.2	2.3	virginica
147	6.3	2.5	5.0	1.9	virginica
148	6.5	3.0	5.2	2.0	virginica
149	6.2	3.4	5.4	2.3	virginica
150	5.9	3.0	5.1	1.8	virginica

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139 spc_virginica_4.8_1.8

```

140 spc_virginica_5.4_2.1
141 spc_virginica_5.6_2.4
142 spc_virginica_5.1_2.3
143 spc_virginica_5.1_1.9
144 spc_virginica_5.9_2.3
145 spc_virginica_5.7_2.5
146 spc_virginica_5.2_2.3
147   spc_virginica_5.1.9
148   spc_virginica_5.2_2
149 spc_virginica_5.4_2.3
150 spc_virginica_5.1_1.8

```

```
iris %>% mutate(Code = glue::glue("Spc:{Species}_Len:{Petal.Length}_Wid:{Petal.Width}"))
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3.0	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	4.6	3.1	1.5	0.2	setosa
5	5.0	3.6	1.4	0.2	setosa
6	5.4	3.9	1.7	0.4	setosa
7	4.6	3.4	1.4	0.3	setosa
8	5.0	3.4	1.5	0.2	setosa
9	4.4	2.9	1.4	0.2	setosa
10	4.9	3.1	1.5	0.1	setosa
11	5.4	3.7	1.5	0.2	setosa
12	4.8	3.4	1.6	0.2	setosa
13	4.8	3.0	1.4	0.1	setosa
14	4.3	3.0	1.1	0.1	setosa
15	5.8	4.0	1.2	0.2	setosa
16	5.7	4.4	1.5	0.4	setosa
17	5.4	3.9	1.3	0.4	setosa
18	5.1	3.5	1.4	0.3	setosa
19	5.7	3.8	1.7	0.3	setosa
20	5.1	3.8	1.5	0.3	setosa
21	5.4	3.4	1.7	0.2	setosa
22	5.1	3.7	1.5	0.4	setosa
23	4.6	3.6	1.0	0.2	setosa
24	5.1	3.3	1.7	0.5	setosa
25	4.8	3.4	1.9	0.2	setosa
26	5.0	3.0	1.6	0.2	setosa

27	5.0	3.4	1.6	0.4	setosa
28	5.2	3.5	1.5	0.2	setosa
29	5.2	3.4	1.4	0.2	setosa
30	4.7	3.2	1.6	0.2	setosa
31	4.8	3.1	1.6	0.2	setosa
32	5.4	3.4	1.5	0.4	setosa
33	5.2	4.1	1.5	0.1	setosa
34	5.5	4.2	1.4	0.2	setosa
35	4.9	3.1	1.5	0.2	setosa
36	5.0	3.2	1.2	0.2	setosa
37	5.5	3.5	1.3	0.2	setosa
38	4.9	3.6	1.4	0.1	setosa
39	4.4	3.0	1.3	0.2	setosa
40	5.1	3.4	1.5	0.2	setosa
41	5.0	3.5	1.3	0.3	setosa
42	4.5	2.3	1.3	0.3	setosa
43	4.4	3.2	1.3	0.2	setosa
44	5.0	3.5	1.6	0.6	setosa
45	5.1	3.8	1.9	0.4	setosa
46	4.8	3.0	1.4	0.3	setosa
47	5.1	3.8	1.6	0.2	setosa
48	4.6	3.2	1.4	0.2	setosa
49	5.3	3.7	1.5	0.2	setosa
50	5.0	3.3	1.4	0.2	setosa
51	7.0	3.2	4.7	1.4	versicolor
52	6.4	3.2	4.5	1.5	versicolor
53	6.9	3.1	4.9	1.5	versicolor
54	5.5	2.3	4.0	1.3	versicolor
55	6.5	2.8	4.6	1.5	versicolor
56	5.7	2.8	4.5	1.3	versicolor
57	6.3	3.3	4.7	1.6	versicolor
58	4.9	2.4	3.3	1.0	versicolor
59	6.6	2.9	4.6	1.3	versicolor
60	5.2	2.7	3.9	1.4	versicolor
61	5.0	2.0	3.5	1.0	versicolor
62	5.9	3.0	4.2	1.5	versicolor
63	6.0	2.2	4.0	1.0	versicolor
64	6.1	2.9	4.7	1.4	versicolor
65	5.6	2.9	3.6	1.3	versicolor
66	6.7	3.1	4.4	1.4	versicolor
67	5.6	3.0	4.5	1.5	versicolor
68	5.8	2.7	4.1	1.0	versicolor
69	6.2	2.2	4.5	1.5	versicolor

70	5.6	2.5	3.9	1.1 versicolor
71	5.9	3.2	4.8	1.8 versicolor
72	6.1	2.8	4.0	1.3 versicolor
73	6.3	2.5	4.9	1.5 versicolor
74	6.1	2.8	4.7	1.2 versicolor
75	6.4	2.9	4.3	1.3 versicolor
76	6.6	3.0	4.4	1.4 versicolor
77	6.8	2.8	4.8	1.4 versicolor
78	6.7	3.0	5.0	1.7 versicolor
79	6.0	2.9	4.5	1.5 versicolor
80	5.7	2.6	3.5	1.0 versicolor
81	5.5	2.4	3.8	1.1 versicolor
82	5.5	2.4	3.7	1.0 versicolor
83	5.8	2.7	3.9	1.2 versicolor
84	6.0	2.7	5.1	1.6 versicolor
85	5.4	3.0	4.5	1.5 versicolor
86	6.0	3.4	4.5	1.6 versicolor
87	6.7	3.1	4.7	1.5 versicolor
88	6.3	2.3	4.4	1.3 versicolor
89	5.6	3.0	4.1	1.3 versicolor
90	5.5	2.5	4.0	1.3 versicolor
91	5.5	2.6	4.4	1.2 versicolor
92	6.1	3.0	4.6	1.4 versicolor
93	5.8	2.6	4.0	1.2 versicolor
94	5.0	2.3	3.3	1.0 versicolor
95	5.6	2.7	4.2	1.3 versicolor
96	5.7	3.0	4.2	1.2 versicolor
97	5.7	2.9	4.2	1.3 versicolor
98	6.2	2.9	4.3	1.3 versicolor
99	5.1	2.5	3.0	1.1 versicolor
100	5.7	2.8	4.1	1.3 versicolor
101	6.3	3.3	6.0	2.5 virginica
102	5.8	2.7	5.1	1.9 virginica
103	7.1	3.0	5.9	2.1 virginica
104	6.3	2.9	5.6	1.8 virginica
105	6.5	3.0	5.8	2.2 virginica
106	7.6	3.0	6.6	2.1 virginica
107	4.9	2.5	4.5	1.7 virginica
108	7.3	2.9	6.3	1.8 virginica
109	6.7	2.5	5.8	1.8 virginica
110	7.2	3.6	6.1	2.5 virginica
111	6.5	3.2	5.1	2.0 virginica
112	6.4	2.7	5.3	1.9 virginica

113	6.8	3.0	5.5	2.1	virginica
114	5.7	2.5	5.0	2.0	virginica
115	5.8	2.8	5.1	2.4	virginica
116	6.4	3.2	5.3	2.3	virginica
117	6.5	3.0	5.5	1.8	virginica
118	7.7	3.8	6.7	2.2	virginica
119	7.7	2.6	6.9	2.3	virginica
120	6.0	2.2	5.0	1.5	virginica
121	6.9	3.2	5.7	2.3	virginica
122	5.6	2.8	4.9	2.0	virginica
123	7.7	2.8	6.7	2.0	virginica
124	6.3	2.7	4.9	1.8	virginica
125	6.7	3.3	5.7	2.1	virginica
126	7.2	3.2	6.0	1.8	virginica
127	6.2	2.8	4.8	1.8	virginica
128	6.1	3.0	4.9	1.8	virginica
129	6.4	2.8	5.6	2.1	virginica
130	7.2	3.0	5.8	1.6	virginica
131	7.4	2.8	6.1	1.9	virginica
132	7.9	3.8	6.4	2.0	virginica
133	6.4	2.8	5.6	2.2	virginica
134	6.3	2.8	5.1	1.5	virginica
135	6.1	2.6	5.6	1.4	virginica
136	7.7	3.0	6.1	2.3	virginica
137	6.3	3.4	5.6	2.4	virginica
138	6.4	3.1	5.5	1.8	virginica
139	6.0	3.0	4.8	1.8	virginica
140	6.9	3.1	5.4	2.1	virginica
141	6.7	3.1	5.6	2.4	virginica
142	6.9	3.1	5.1	2.3	virginica
143	5.8	2.7	5.1	1.9	virginica
144	6.8	3.2	5.9	2.3	virginica
145	6.7	3.3	5.7	2.5	virginica
146	6.7	3.0	5.2	2.3	virginica
147	6.3	2.5	5.0	1.9	virginica
148	6.5	3.0	5.2	2.0	virginica
149	6.2	3.4	5.4	2.3	virginica
150	5.9	3.0	5.1	1.8	virginica

Code

1	Spc:setosa_Len:1.4_Wid:0.2
2	Spc:setosa_Len:1.4_Wid:0.2
3	Spc:setosa_Len:1.3_Wid:0.2
4	Spc:setosa_Len:1.5_Wid:0.2

5 Spc:setosa_Len:1.4_Wid:0.2
6 Spc:setosa_Len:1.7_Wid:0.4
7 Spc:setosa_Len:1.4_Wid:0.3
8 Spc:setosa_Len:1.5_Wid:0.2
9 Spc:setosa_Len:1.4_Wid:0.2
10 Spc:setosa_Len:1.5_Wid:0.1
11 Spc:setosa_Len:1.5_Wid:0.2
12 Spc:setosa_Len:1.6_Wid:0.2
13 Spc:setosa_Len:1.4_Wid:0.1
14 Spc:setosa_Len:1.1_Wid:0.1
15 Spc:setosa_Len:1.2_Wid:0.2
16 Spc:setosa_Len:1.5_Wid:0.4
17 Spc:setosa_Len:1.3_Wid:0.4
18 Spc:setosa_Len:1.4_Wid:0.3
19 Spc:setosa_Len:1.7_Wid:0.3
20 Spc:setosa_Len:1.5_Wid:0.3
21 Spc:setosa_Len:1.7_Wid:0.2
22 Spc:setosa_Len:1.5_Wid:0.4
23 Spc:setosa_Len:1_Wid:0.2
24 Spc:setosa_Len:1.7_Wid:0.5
25 Spc:setosa_Len:1.9_Wid:0.2
26 Spc:setosa_Len:1.6_Wid:0.2
27 Spc:setosa_Len:1.6_Wid:0.4
28 Spc:setosa_Len:1.5_Wid:0.2
29 Spc:setosa_Len:1.4_Wid:0.2
30 Spc:setosa_Len:1.6_Wid:0.2
31 Spc:setosa_Len:1.6_Wid:0.2
32 Spc:setosa_Len:1.5_Wid:0.4
33 Spc:setosa_Len:1.5_Wid:0.1
34 Spc:setosa_Len:1.4_Wid:0.2
35 Spc:setosa_Len:1.5_Wid:0.2
36 Spc:setosa_Len:1.2_Wid:0.2
37 Spc:setosa_Len:1.3_Wid:0.2
38 Spc:setosa_Len:1.4_Wid:0.1
39 Spc:setosa_Len:1.3_Wid:0.2
40 Spc:setosa_Len:1.5_Wid:0.2
41 Spc:setosa_Len:1.3_Wid:0.3
42 Spc:setosa_Len:1.3_Wid:0.3
43 Spc:setosa_Len:1.3_Wid:0.2
44 Spc:setosa_Len:1.6_Wid:0.6
45 Spc:setosa_Len:1.9_Wid:0.4
46 Spc:setosa_Len:1.4_Wid:0.3
47 Spc:setosa_Len:1.6_Wid:0.2

48 Spc:setosa_Len:1.4_Wid:0.2
 49 Spc:setosa_Len:1.5_Wid:0.2
 50 Spc:setosa_Len:1.4_Wid:0.2
 51 Spc:versicolor_Len:4.7_Wid:1.4
 52 Spc:versicolor_Len:4.5_Wid:1.5
 53 Spc:versicolor_Len:4.9_Wid:1.5
 54 Spc:versicolor_Len:4_Wid:1.3
 55 Spc:versicolor_Len:4.6_Wid:1.5
 56 Spc:versicolor_Len:4.5_Wid:1.3
 57 Spc:versicolor_Len:4.7_Wid:1.6
 58 Spc:versicolor_Len:3.3_Wid:1
 59 Spc:versicolor_Len:4.6_Wid:1.3
 60 Spc:versicolor_Len:3.9_Wid:1.4
 61 Spc:versicolor_Len:3.5_Wid:1
 62 Spc:versicolor_Len:4.2_Wid:1.5
 63 Spc:versicolor_Len:4_Wid:1
 64 Spc:versicolor_Len:4.7_Wid:1.4
 65 Spc:versicolor_Len:3.6_Wid:1.3
 66 Spc:versicolor_Len:4.4_Wid:1.4
 67 Spc:versicolor_Len:4.5_Wid:1.5
 68 Spc:versicolor_Len:4.1_Wid:1
 69 Spc:versicolor_Len:4.5_Wid:1.5
 70 Spc:versicolor_Len:3.9_Wid:1.1
 71 Spc:versicolor_Len:4.8_Wid:1.8
 72 Spc:versicolor_Len:4_Wid:1.3
 73 Spc:versicolor_Len:4.9_Wid:1.5
 74 Spc:versicolor_Len:4.7_Wid:1.2
 75 Spc:versicolor_Len:4.3_Wid:1.3
 76 Spc:versicolor_Len:4.4_Wid:1.4
 77 Spc:versicolor_Len:4.8_Wid:1.4
 78 Spc:versicolor_Len:5_Wid:1.7
 79 Spc:versicolor_Len:4.5_Wid:1.5
 80 Spc:versicolor_Len:3.5_Wid:1
 81 Spc:versicolor_Len:3.8_Wid:1.1
 82 Spc:versicolor_Len:3.7_Wid:1
 83 Spc:versicolor_Len:3.9_Wid:1.2
 84 Spc:versicolor_Len:5.1_Wid:1.6
 85 Spc:versicolor_Len:4.5_Wid:1.5
 86 Spc:versicolor_Len:4.5_Wid:1.6
 87 Spc:versicolor_Len:4.7_Wid:1.5
 88 Spc:versicolor_Len:4.4_Wid:1.3
 89 Spc:versicolor_Len:4.1_Wid:1.3
 90 Spc:versicolor_Len:4_Wid:1.3

91 Spc:versicolor_Len:4.4_Wid:1.2
 92 Spc:versicolor_Len:4.6_Wid:1.4
 93 Spc:versicolor_Len:4_Wid:1.2
 94 Spc:versicolor_Len:3.3_Wid:1
 95 Spc:versicolor_Len:4.2_Wid:1.3
 96 Spc:versicolor_Len:4.2_Wid:1.2
 97 Spc:versicolor_Len:4.2_Wid:1.3
 98 Spc:versicolor_Len:4.3_Wid:1.3
 99 Spc:versicolor_Len:3_Wid:1.1
 100 Spc:versicolor_Len:4.1_Wid:1.3
 101 Spc:virginica_Len:6_Wid:2.5
 102 Spc:virginica_Len:5.1_Wid:1.9
 103 Spc:virginica_Len:5.9_Wid:2.1
 104 Spc:virginica_Len:5.6_Wid:1.8
 105 Spc:virginica_Len:5.8_Wid:2.2
 106 Spc:virginica_Len:6.6_Wid:2.1
 107 Spc:virginica_Len:4.5_Wid:1.7
 108 Spc:virginica_Len:6.3_Wid:1.8
 109 Spc:virginica_Len:5.8_Wid:1.8
 110 Spc:virginica_Len:6.1_Wid:2.5
 111 Spc:virginica_Len:5.1_Wid:2
 112 Spc:virginica_Len:5.3_Wid:1.9
 113 Spc:virginica_Len:5.5_Wid:2.1
 114 Spc:virginica_Len:5_Wid:2
 115 Spc:virginica_Len:5.1_Wid:2.4
 116 Spc:virginica_Len:5.3_Wid:2.3
 117 Spc:virginica_Len:5.5_Wid:1.8
 118 Spc:virginica_Len:6.7_Wid:2.2
 119 Spc:virginica_Len:6.9_Wid:2.3
 120 Spc:virginica_Len:5_Wid:1.5
 121 Spc:virginica_Len:5.7_Wid:2.3
 122 Spc:virginica_Len:4.9_Wid:2
 123 Spc:virginica_Len:6.7_Wid:2
 124 Spc:virginica_Len:4.9_Wid:1.8
 125 Spc:virginica_Len:5.7_Wid:2.1
 126 Spc:virginica_Len:6_Wid:1.8
 127 Spc:virginica_Len:4.8_Wid:1.8
 128 Spc:virginica_Len:4.9_Wid:1.8
 129 Spc:virginica_Len:5.6_Wid:2.1
 130 Spc:virginica_Len:5.8_Wid:1.6
 131 Spc:virginica_Len:6.1_Wid:1.9
 132 Spc:virginica_Len:6.4_Wid:2
 133 Spc:virginica_Len:5.6_Wid:2.2

```

134 Spc:virginica_Len:5.1_Wid:1.5
135 Spc:virginica_Len:5.6_Wid:1.4
136 Spc:virginica_Len:6.1_Wid:2.3
137 Spc:virginica_Len:5.6_Wid:2.4
138 Spc:virginica_Len:5.5_Wid:1.8
139 Spc:virginica_Len:4.8_Wid:1.8
140 Spc:virginica_Len:5.4_Wid:2.1
141 Spc:virginica_Len:5.6_Wid:2.4
142 Spc:virginica_Len:5.1_Wid:2.3
143 Spc:virginica_Len:5.1_Wid:1.9
144 Spc:virginica_Len:5.9_Wid:2.3
145 Spc:virginica_Len:5.7_Wid:2.5
146 Spc:virginica_Len:5.2_Wid:2.3
147   Spc:virginica_Len:5_Wid:1.9
148   Spc:virginica_Len:5.2_Wid:2
149 Spc:virginica_Len:5.4_Wid:2.3
150 Spc:virginica_Len:5.1_Wid:1.8

```

2.1.2 select

Serve para selecionar colunas (variáveis).

Nota: se você estiver trabalhando com bioconductor recomendo usar `dplyr::select()`

```
select(iris, Sepal.Length)
```

	Sepal.Length
1	5.1
2	4.9
3	4.7
4	4.6
5	5.0
6	5.4
7	4.6
8	5.0
9	4.4
10	4.9
11	5.4
12	4.8
13	4.8
14	4.3
15	5.8

16	5.7
17	5.4
18	5.1
19	5.7
20	5.1
21	5.4
22	5.1
23	4.6
24	5.1
25	4.8
26	5.0
27	5.0
28	5.2
29	5.2
30	4.7
31	4.8
32	5.4
33	5.2
34	5.5
35	4.9
36	5.0
37	5.5
38	4.9
39	4.4
40	5.1
41	5.0
42	4.5
43	4.4
44	5.0
45	5.1
46	4.8
47	5.1
48	4.6
49	5.3
50	5.0
51	7.0
52	6.4
53	6.9
54	5.5
55	6.5
56	5.7
57	6.3
58	4.9

59	6.6
60	5.2
61	5.0
62	5.9
63	6.0
64	6.1
65	5.6
66	6.7
67	5.6
68	5.8
69	6.2
70	5.6
71	5.9
72	6.1
73	6.3
74	6.1
75	6.4
76	6.6
77	6.8
78	6.7
79	6.0
80	5.7
81	5.5
82	5.5
83	5.8
84	6.0
85	5.4
86	6.0
87	6.7
88	6.3
89	5.6
90	5.5
91	5.5
92	6.1
93	5.8
94	5.0
95	5.6
96	5.7
97	5.7
98	6.2
99	5.1
100	5.7
101	6.3

102	5.8
103	7.1
104	6.3
105	6.5
106	7.6
107	4.9
108	7.3
109	6.7
110	7.2
111	6.5
112	6.4
113	6.8
114	5.7
115	5.8
116	6.4
117	6.5
118	7.7
119	7.7
120	6.0
121	6.9
122	5.6
123	7.7
124	6.3
125	6.7
126	7.2
127	6.2
128	6.1
129	6.4
130	7.2
131	7.4
132	7.9
133	6.4
134	6.3
135	6.1
136	7.7
137	6.3
138	6.4
139	6.0
140	6.9
141	6.7
142	6.9
143	5.8
144	6.8

145	6.7
146	6.7
147	6.3
148	6.5
149	6.2
150	5.9

```
select(iris, Sepal.Length, Sepal.Width)
```

	Sepal.Length	Sepal.Width
1	5.1	3.5
2	4.9	3.0
3	4.7	3.2
4	4.6	3.1
5	5.0	3.6
6	5.4	3.9
7	4.6	3.4
8	5.0	3.4
9	4.4	2.9
10	4.9	3.1
11	5.4	3.7
12	4.8	3.4
13	4.8	3.0
14	4.3	3.0
15	5.8	4.0
16	5.7	4.4
17	5.4	3.9
18	5.1	3.5
19	5.7	3.8
20	5.1	3.8
21	5.4	3.4
22	5.1	3.7
23	4.6	3.6
24	5.1	3.3
25	4.8	3.4
26	5.0	3.0
27	5.0	3.4
28	5.2	3.5
29	5.2	3.4
30	4.7	3.2
31	4.8	3.1

32	5.4	3.4
33	5.2	4.1
34	5.5	4.2
35	4.9	3.1
36	5.0	3.2
37	5.5	3.5
38	4.9	3.6
39	4.4	3.0
40	5.1	3.4
41	5.0	3.5
42	4.5	2.3
43	4.4	3.2
44	5.0	3.5
45	5.1	3.8
46	4.8	3.0
47	5.1	3.8
48	4.6	3.2
49	5.3	3.7
50	5.0	3.3
51	7.0	3.2
52	6.4	3.2
53	6.9	3.1
54	5.5	2.3
55	6.5	2.8
56	5.7	2.8
57	6.3	3.3
58	4.9	2.4
59	6.6	2.9
60	5.2	2.7
61	5.0	2.0
62	5.9	3.0
63	6.0	2.2
64	6.1	2.9
65	5.6	2.9
66	6.7	3.1
67	5.6	3.0
68	5.8	2.7
69	6.2	2.2
70	5.6	2.5
71	5.9	3.2
72	6.1	2.8
73	6.3	2.5
74	6.1	2.8

75	6.4	2.9
76	6.6	3.0
77	6.8	2.8
78	6.7	3.0
79	6.0	2.9
80	5.7	2.6
81	5.5	2.4
82	5.5	2.4
83	5.8	2.7
84	6.0	2.7
85	5.4	3.0
86	6.0	3.4
87	6.7	3.1
88	6.3	2.3
89	5.6	3.0
90	5.5	2.5
91	5.5	2.6
92	6.1	3.0
93	5.8	2.6
94	5.0	2.3
95	5.6	2.7
96	5.7	3.0
97	5.7	2.9
98	6.2	2.9
99	5.1	2.5
100	5.7	2.8
101	6.3	3.3
102	5.8	2.7
103	7.1	3.0
104	6.3	2.9
105	6.5	3.0
106	7.6	3.0
107	4.9	2.5
108	7.3	2.9
109	6.7	2.5
110	7.2	3.6
111	6.5	3.2
112	6.4	2.7
113	6.8	3.0
114	5.7	2.5
115	5.8	2.8
116	6.4	3.2
117	6.5	3.0

118	7.7	3.8
119	7.7	2.6
120	6.0	2.2
121	6.9	3.2
122	5.6	2.8
123	7.7	2.8
124	6.3	2.7
125	6.7	3.3
126	7.2	3.2
127	6.2	2.8
128	6.1	3.0
129	6.4	2.8
130	7.2	3.0
131	7.4	2.8
132	7.9	3.8
133	6.4	2.8
134	6.3	2.8
135	6.1	2.6
136	7.7	3.0
137	6.3	3.4
138	6.4	3.1
139	6.0	3.0
140	6.9	3.1
141	6.7	3.1
142	6.9	3.1
143	5.8	2.7
144	6.8	3.2
145	6.7	3.3
146	6.7	3.0
147	6.3	2.5
148	6.5	3.0
149	6.2	3.4
150	5.9	3.0

```
#select(iris, Sepal.Length, Sepal.Width)
iris %>% select(Length = Sepal.Length,
               Width = Sepal.Width)
```

	Length	Width
1	5.1	3.5
2	4.9	3.0

3	4.7	3.2
4	4.6	3.1
5	5.0	3.6
6	5.4	3.9
7	4.6	3.4
8	5.0	3.4
9	4.4	2.9
10	4.9	3.1
11	5.4	3.7
12	4.8	3.4
13	4.8	3.0
14	4.3	3.0
15	5.8	4.0
16	5.7	4.4
17	5.4	3.9
18	5.1	3.5
19	5.7	3.8
20	5.1	3.8
21	5.4	3.4
22	5.1	3.7
23	4.6	3.6
24	5.1	3.3
25	4.8	3.4
26	5.0	3.0
27	5.0	3.4
28	5.2	3.5
29	5.2	3.4
30	4.7	3.2
31	4.8	3.1
32	5.4	3.4
33	5.2	4.1
34	5.5	4.2
35	4.9	3.1
36	5.0	3.2
37	5.5	3.5
38	4.9	3.6
39	4.4	3.0
40	5.1	3.4
41	5.0	3.5
42	4.5	2.3
43	4.4	3.2
44	5.0	3.5
45	5.1	3.8

46	4.8	3.0
47	5.1	3.8
48	4.6	3.2
49	5.3	3.7
50	5.0	3.3
51	7.0	3.2
52	6.4	3.2
53	6.9	3.1
54	5.5	2.3
55	6.5	2.8
56	5.7	2.8
57	6.3	3.3
58	4.9	2.4
59	6.6	2.9
60	5.2	2.7
61	5.0	2.0
62	5.9	3.0
63	6.0	2.2
64	6.1	2.9
65	5.6	2.9
66	6.7	3.1
67	5.6	3.0
68	5.8	2.7
69	6.2	2.2
70	5.6	2.5
71	5.9	3.2
72	6.1	2.8
73	6.3	2.5
74	6.1	2.8
75	6.4	2.9
76	6.6	3.0
77	6.8	2.8
78	6.7	3.0
79	6.0	2.9
80	5.7	2.6
81	5.5	2.4
82	5.5	2.4
83	5.8	2.7
84	6.0	2.7
85	5.4	3.0
86	6.0	3.4
87	6.7	3.1
88	6.3	2.3

89	5.6	3.0
90	5.5	2.5
91	5.5	2.6
92	6.1	3.0
93	5.8	2.6
94	5.0	2.3
95	5.6	2.7
96	5.7	3.0
97	5.7	2.9
98	6.2	2.9
99	5.1	2.5
100	5.7	2.8
101	6.3	3.3
102	5.8	2.7
103	7.1	3.0
104	6.3	2.9
105	6.5	3.0
106	7.6	3.0
107	4.9	2.5
108	7.3	2.9
109	6.7	2.5
110	7.2	3.6
111	6.5	3.2
112	6.4	2.7
113	6.8	3.0
114	5.7	2.5
115	5.8	2.8
116	6.4	3.2
117	6.5	3.0
118	7.7	3.8
119	7.7	2.6
120	6.0	2.2
121	6.9	3.2
122	5.6	2.8
123	7.7	2.8
124	6.3	2.7
125	6.7	3.3
126	7.2	3.2
127	6.2	2.8
128	6.1	3.0
129	6.4	2.8
130	7.2	3.0
131	7.4	2.8

132	7.9	3.8
133	6.4	2.8
134	6.3	2.8
135	6.1	2.6
136	7.7	3.0
137	6.3	3.4
138	6.4	3.1
139	6.0	3.0
140	6.9	3.1
141	6.7	3.1
142	6.9	3.1
143	5.8	2.7
144	6.8	3.2
145	6.7	3.3
146	6.7	3.0
147	6.3	2.5
148	6.5	3.0
149	6.2	3.4
150	5.9	3.0

```
iris %>% select(starts_with("Sepal"))
```

	Sepal.Length	Sepal.Width
1	5.1	3.5
2	4.9	3.0
3	4.7	3.2
4	4.6	3.1
5	5.0	3.6
6	5.4	3.9
7	4.6	3.4
8	5.0	3.4
9	4.4	2.9
10	4.9	3.1
11	5.4	3.7
12	4.8	3.4
13	4.8	3.0
14	4.3	3.0
15	5.8	4.0
16	5.7	4.4
17	5.4	3.9
18	5.1	3.5

19	5.7	3.8
20	5.1	3.8
21	5.4	3.4
22	5.1	3.7
23	4.6	3.6
24	5.1	3.3
25	4.8	3.4
26	5.0	3.0
27	5.0	3.4
28	5.2	3.5
29	5.2	3.4
30	4.7	3.2
31	4.8	3.1
32	5.4	3.4
33	5.2	4.1
34	5.5	4.2
35	4.9	3.1
36	5.0	3.2
37	5.5	3.5
38	4.9	3.6
39	4.4	3.0
40	5.1	3.4
41	5.0	3.5
42	4.5	2.3
43	4.4	3.2
44	5.0	3.5
45	5.1	3.8
46	4.8	3.0
47	5.1	3.8
48	4.6	3.2
49	5.3	3.7
50	5.0	3.3
51	7.0	3.2
52	6.4	3.2
53	6.9	3.1
54	5.5	2.3
55	6.5	2.8
56	5.7	2.8
57	6.3	3.3
58	4.9	2.4
59	6.6	2.9
60	5.2	2.7
61	5.0	2.0

62	5.9	3.0
63	6.0	2.2
64	6.1	2.9
65	5.6	2.9
66	6.7	3.1
67	5.6	3.0
68	5.8	2.7
69	6.2	2.2
70	5.6	2.5
71	5.9	3.2
72	6.1	2.8
73	6.3	2.5
74	6.1	2.8
75	6.4	2.9
76	6.6	3.0
77	6.8	2.8
78	6.7	3.0
79	6.0	2.9
80	5.7	2.6
81	5.5	2.4
82	5.5	2.4
83	5.8	2.7
84	6.0	2.7
85	5.4	3.0
86	6.0	3.4
87	6.7	3.1
88	6.3	2.3
89	5.6	3.0
90	5.5	2.5
91	5.5	2.6
92	6.1	3.0
93	5.8	2.6
94	5.0	2.3
95	5.6	2.7
96	5.7	3.0
97	5.7	2.9
98	6.2	2.9
99	5.1	2.5
100	5.7	2.8
101	6.3	3.3
102	5.8	2.7
103	7.1	3.0
104	6.3	2.9

105	6.5	3.0
106	7.6	3.0
107	4.9	2.5
108	7.3	2.9
109	6.7	2.5
110	7.2	3.6
111	6.5	3.2
112	6.4	2.7
113	6.8	3.0
114	5.7	2.5
115	5.8	2.8
116	6.4	3.2
117	6.5	3.0
118	7.7	3.8
119	7.7	2.6
120	6.0	2.2
121	6.9	3.2
122	5.6	2.8
123	7.7	2.8
124	6.3	2.7
125	6.7	3.3
126	7.2	3.2
127	6.2	2.8
128	6.1	3.0
129	6.4	2.8
130	7.2	3.0
131	7.4	2.8
132	7.9	3.8
133	6.4	2.8
134	6.3	2.8
135	6.1	2.6
136	7.7	3.0
137	6.3	3.4
138	6.4	3.1
139	6.0	3.0
140	6.9	3.1
141	6.7	3.1
142	6.9	3.1
143	5.8	2.7
144	6.8	3.2
145	6.7	3.3
146	6.7	3.0
147	6.3	2.5

148	6.5	3.0
149	6.2	3.4
150	5.9	3.0

```
iris %>% select(ends_with("Width"))
```

	Sepal.Width	Petal.Width
1	3.5	0.2
2	3.0	0.2
3	3.2	0.2
4	3.1	0.2
5	3.6	0.2
6	3.9	0.4
7	3.4	0.3
8	3.4	0.2
9	2.9	0.2
10	3.1	0.1
11	3.7	0.2
12	3.4	0.2
13	3.0	0.1
14	3.0	0.1
15	4.0	0.2
16	4.4	0.4
17	3.9	0.4
18	3.5	0.3
19	3.8	0.3
20	3.8	0.3
21	3.4	0.2
22	3.7	0.4
23	3.6	0.2
24	3.3	0.5
25	3.4	0.2
26	3.0	0.2
27	3.4	0.4
28	3.5	0.2
29	3.4	0.2
30	3.2	0.2
31	3.1	0.2
32	3.4	0.4
33	4.1	0.1
34	4.2	0.2

35	3.1	0.2
36	3.2	0.2
37	3.5	0.2
38	3.6	0.1
39	3.0	0.2
40	3.4	0.2
41	3.5	0.3
42	2.3	0.3
43	3.2	0.2
44	3.5	0.6
45	3.8	0.4
46	3.0	0.3
47	3.8	0.2
48	3.2	0.2
49	3.7	0.2
50	3.3	0.2
51	3.2	1.4
52	3.2	1.5
53	3.1	1.5
54	2.3	1.3
55	2.8	1.5
56	2.8	1.3
57	3.3	1.6
58	2.4	1.0
59	2.9	1.3
60	2.7	1.4
61	2.0	1.0
62	3.0	1.5
63	2.2	1.0
64	2.9	1.4
65	2.9	1.3
66	3.1	1.4
67	3.0	1.5
68	2.7	1.0
69	2.2	1.5
70	2.5	1.1
71	3.2	1.8
72	2.8	1.3
73	2.5	1.5
74	2.8	1.2
75	2.9	1.3
76	3.0	1.4
77	2.8	1.4

78	3.0	1.7
79	2.9	1.5
80	2.6	1.0
81	2.4	1.1
82	2.4	1.0
83	2.7	1.2
84	2.7	1.6
85	3.0	1.5
86	3.4	1.6
87	3.1	1.5
88	2.3	1.3
89	3.0	1.3
90	2.5	1.3
91	2.6	1.2
92	3.0	1.4
93	2.6	1.2
94	2.3	1.0
95	2.7	1.3
96	3.0	1.2
97	2.9	1.3
98	2.9	1.3
99	2.5	1.1
100	2.8	1.3
101	3.3	2.5
102	2.7	1.9
103	3.0	2.1
104	2.9	1.8
105	3.0	2.2
106	3.0	2.1
107	2.5	1.7
108	2.9	1.8
109	2.5	1.8
110	3.6	2.5
111	3.2	2.0
112	2.7	1.9
113	3.0	2.1
114	2.5	2.0
115	2.8	2.4
116	3.2	2.3
117	3.0	1.8
118	3.8	2.2
119	2.6	2.3
120	2.2	1.5

121	3.2	2.3
122	2.8	2.0
123	2.8	2.0
124	2.7	1.8
125	3.3	2.1
126	3.2	1.8
127	2.8	1.8
128	3.0	1.8
129	2.8	2.1
130	3.0	1.6
131	2.8	1.9
132	3.8	2.0
133	2.8	2.2
134	2.8	1.5
135	2.6	1.4
136	3.0	2.3
137	3.4	2.4
138	3.1	1.8
139	3.0	1.8
140	3.1	2.1
141	3.1	2.4
142	3.1	2.3
143	2.7	1.9
144	3.2	2.3
145	3.3	2.5
146	3.0	2.3
147	2.5	1.9
148	3.0	2.0
149	3.4	2.3
150	3.0	1.8

```
iris %>% select(Species,ends_with("Width"))
```

	Species	Sepal.Width	Petal.Width
1	setosa	3.5	0.2
2	setosa	3.0	0.2
3	setosa	3.2	0.2
4	setosa	3.1	0.2
5	setosa	3.6	0.2
6	setosa	3.9	0.4
7	setosa	3.4	0.3

8	setosa	3.4	0.2
9	setosa	2.9	0.2
10	setosa	3.1	0.1
11	setosa	3.7	0.2
12	setosa	3.4	0.2
13	setosa	3.0	0.1
14	setosa	3.0	0.1
15	setosa	4.0	0.2
16	setosa	4.4	0.4
17	setosa	3.9	0.4
18	setosa	3.5	0.3
19	setosa	3.8	0.3
20	setosa	3.8	0.3
21	setosa	3.4	0.2
22	setosa	3.7	0.4
23	setosa	3.6	0.2
24	setosa	3.3	0.5
25	setosa	3.4	0.2
26	setosa	3.0	0.2
27	setosa	3.4	0.4
28	setosa	3.5	0.2
29	setosa	3.4	0.2
30	setosa	3.2	0.2
31	setosa	3.1	0.2
32	setosa	3.4	0.4
33	setosa	4.1	0.1
34	setosa	4.2	0.2
35	setosa	3.1	0.2
36	setosa	3.2	0.2
37	setosa	3.5	0.2
38	setosa	3.6	0.1
39	setosa	3.0	0.2
40	setosa	3.4	0.2
41	setosa	3.5	0.3
42	setosa	2.3	0.3
43	setosa	3.2	0.2
44	setosa	3.5	0.6
45	setosa	3.8	0.4
46	setosa	3.0	0.3
47	setosa	3.8	0.2
48	setosa	3.2	0.2
49	setosa	3.7	0.2
50	setosa	3.3	0.2

51	versicolor	3.2	1.4
52	versicolor	3.2	1.5
53	versicolor	3.1	1.5
54	versicolor	2.3	1.3
55	versicolor	2.8	1.5
56	versicolor	2.8	1.3
57	versicolor	3.3	1.6
58	versicolor	2.4	1.0
59	versicolor	2.9	1.3
60	versicolor	2.7	1.4
61	versicolor	2.0	1.0
62	versicolor	3.0	1.5
63	versicolor	2.2	1.0
64	versicolor	2.9	1.4
65	versicolor	2.9	1.3
66	versicolor	3.1	1.4
67	versicolor	3.0	1.5
68	versicolor	2.7	1.0
69	versicolor	2.2	1.5
70	versicolor	2.5	1.1
71	versicolor	3.2	1.8
72	versicolor	2.8	1.3
73	versicolor	2.5	1.5
74	versicolor	2.8	1.2
75	versicolor	2.9	1.3
76	versicolor	3.0	1.4
77	versicolor	2.8	1.4
78	versicolor	3.0	1.7
79	versicolor	2.9	1.5
80	versicolor	2.6	1.0
81	versicolor	2.4	1.1
82	versicolor	2.4	1.0
83	versicolor	2.7	1.2
84	versicolor	2.7	1.6
85	versicolor	3.0	1.5
86	versicolor	3.4	1.6
87	versicolor	3.1	1.5
88	versicolor	2.3	1.3
89	versicolor	3.0	1.3
90	versicolor	2.5	1.3
91	versicolor	2.6	1.2
92	versicolor	3.0	1.4
93	versicolor	2.6	1.2

94	versicolor	2.3	1.0
95	versicolor	2.7	1.3
96	versicolor	3.0	1.2
97	versicolor	2.9	1.3
98	versicolor	2.9	1.3
99	versicolor	2.5	1.1
100	versicolor	2.8	1.3
101	virginica	3.3	2.5
102	virginica	2.7	1.9
103	virginica	3.0	2.1
104	virginica	2.9	1.8
105	virginica	3.0	2.2
106	virginica	3.0	2.1
107	virginica	2.5	1.7
108	virginica	2.9	1.8
109	virginica	2.5	1.8
110	virginica	3.6	2.5
111	virginica	3.2	2.0
112	virginica	2.7	1.9
113	virginica	3.0	2.1
114	virginica	2.5	2.0
115	virginica	2.8	2.4
116	virginica	3.2	2.3
117	virginica	3.0	1.8
118	virginica	3.8	2.2
119	virginica	2.6	2.3
120	virginica	2.2	1.5
121	virginica	3.2	2.3
122	virginica	2.8	2.0
123	virginica	2.8	2.0
124	virginica	2.7	1.8
125	virginica	3.3	2.1
126	virginica	3.2	1.8
127	virginica	2.8	1.8
128	virginica	3.0	1.8
129	virginica	2.8	2.1
130	virginica	3.0	1.6
131	virginica	2.8	1.9
132	virginica	3.8	2.0
133	virginica	2.8	2.2
134	virginica	2.8	1.5
135	virginica	2.6	1.4
136	virginica	3.0	2.3

137	virginica	3.4	2.4
138	virginica	3.1	1.8
139	virginica	3.0	1.8
140	virginica	3.1	2.1
141	virginica	3.1	2.4
142	virginica	3.1	2.3
143	virginica	2.7	1.9
144	virginica	3.2	2.3
145	virginica	3.3	2.5
146	virginica	3.0	2.3
147	virginica	2.5	1.9
148	virginica	3.0	2.0
149	virginica	3.4	2.3
150	virginica	3.0	1.8

```
#Não faz muito sentido usar isso - Ou usar o que o icaro disse
(iris_2 <- iris %>% select(2))
```

	Sepal.Width
1	3.5
2	3.0
3	3.2
4	3.1
5	3.6
6	3.9
7	3.4
8	3.4
9	2.9
10	3.1
11	3.7
12	3.4
13	3.0
14	3.0
15	4.0
16	4.4
17	3.9
18	3.5
19	3.8
20	3.8
21	3.4
22	3.7

23	3.6
24	3.3
25	3.4
26	3.0
27	3.4
28	3.5
29	3.4
30	3.2
31	3.1
32	3.4
33	4.1
34	4.2
35	3.1
36	3.2
37	3.5
38	3.6
39	3.0
40	3.4
41	3.5
42	2.3
43	3.2
44	3.5
45	3.8
46	3.0
47	3.8
48	3.2
49	3.7
50	3.3
51	3.2
52	3.2
53	3.1
54	2.3
55	2.8
56	2.8
57	3.3
58	2.4
59	2.9
60	2.7
61	2.0
62	3.0
63	2.2
64	2.9
65	2.9

66	3.1
67	3.0
68	2.7
69	2.2
70	2.5
71	3.2
72	2.8
73	2.5
74	2.8
75	2.9
76	3.0
77	2.8
78	3.0
79	2.9
80	2.6
81	2.4
82	2.4
83	2.7
84	2.7
85	3.0
86	3.4
87	3.1
88	2.3
89	3.0
90	2.5
91	2.6
92	3.0
93	2.6
94	2.3
95	2.7
96	3.0
97	2.9
98	2.9
99	2.5
100	2.8
101	3.3
102	2.7
103	3.0
104	2.9
105	3.0
106	3.0
107	2.5
108	2.9

109	2.5
110	3.6
111	3.2
112	2.7
113	3.0
114	2.5
115	2.8
116	3.2
117	3.0
118	3.8
119	2.6
120	2.2
121	3.2
122	2.8
123	2.8
124	2.7
125	3.3
126	3.2
127	2.8
128	3.0
129	2.8
130	3.0
131	2.8
132	3.8
133	2.8
134	2.8
135	2.6
136	3.0
137	3.4
138	3.1
139	3.0
140	3.1
141	3.1
142	3.1
143	2.7
144	3.2
145	3.3
146	3.0
147	2.5
148	3.0
149	3.4
150	3.0

```
iris_v2 <- iris[,2]
```

2.1.3 pull() - extraí o vetor

```
iris %>% pull(Sepal.Width)
```

```
[1] 3.5 3.0 3.2 3.1 3.6 3.9 3.4 3.4 2.9 3.1 3.7 3.4 3.0 3.0 4.0 4.4 3.9 3.5
[19] 3.8 3.8 3.4 3.7 3.6 3.3 3.4 3.0 3.4 3.5 3.4 3.2 3.1 3.4 4.1 4.2 3.1 3.2
[37] 3.5 3.6 3.0 3.4 3.5 2.3 3.2 3.5 3.8 3.0 3.8 3.2 3.7 3.3 3.2 3.2 3.1 2.3
[55] 2.8 2.8 3.3 2.4 2.9 2.7 2.0 3.0 2.2 2.9 2.9 3.1 3.0 2.7 2.2 2.5 3.2 2.8
[73] 2.5 2.8 2.9 3.0 2.8 3.0 2.9 2.6 2.4 2.4 2.7 2.7 3.0 3.4 3.1 2.3 3.0 2.5
[91] 2.6 3.0 2.6 2.3 2.7 3.0 2.9 2.9 2.5 2.8 3.3 2.7 3.0 2.9 3.0 3.0 2.5 2.9
[109] 2.5 3.6 3.2 2.7 3.0 2.5 2.8 3.2 3.0 3.8 2.6 2.2 3.2 2.8 2.8 2.7 3.3 3.2
[127] 2.8 3.0 2.8 3.0 2.8 3.8 2.8 2.8 2.6 3.0 3.4 3.1 3.0 3.1 3.1 3.1 2.7 3.2
[145] 3.3 3.0 2.5 3.0 3.4 3.0
```

```
pull(iris_2)
```

```
[1] 3.5 3.0 3.2 3.1 3.6 3.9 3.4 3.4 2.9 3.1 3.7 3.4 3.0 3.0 4.0 4.4 3.9 3.5
[19] 3.8 3.8 3.4 3.7 3.6 3.3 3.4 3.0 3.4 3.5 3.4 3.2 3.1 3.4 4.1 4.2 3.1 3.2
[37] 3.5 3.6 3.0 3.4 3.5 2.3 3.2 3.5 3.8 3.0 3.8 3.2 3.7 3.3 3.2 3.2 3.1 2.3
[55] 2.8 2.8 3.3 2.4 2.9 2.7 2.0 3.0 2.2 2.9 2.9 3.1 3.0 2.7 2.2 2.5 3.2 2.8
[73] 2.5 2.8 2.9 3.0 2.8 3.0 2.9 2.6 2.4 2.4 2.7 2.7 3.0 3.4 3.1 2.3 3.0 2.5
[91] 2.6 3.0 2.6 2.3 2.7 3.0 2.9 2.9 2.5 2.8 3.3 2.7 3.0 2.9 3.0 3.0 2.5 2.9
[109] 2.5 3.6 3.2 2.7 3.0 2.5 2.8 3.2 3.0 3.8 2.6 2.2 3.2 2.8 2.8 2.7 3.3 3.2
[127] 2.8 3.0 2.8 3.0 2.8 3.8 2.8 2.8 2.6 3.0 3.4 3.1 3.0 3.1 3.1 3.1 2.7 3.2
[145] 3.3 3.0 2.5 3.0 3.4 3.0
```

2.1.4 filter

Filtra linhas de uma tabela

```
iris
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3.0	1.4	0.2	setosa

3	4.7	3.2	1.3	0.2	setosa
4	4.6	3.1	1.5	0.2	setosa
5	5.0	3.6	1.4	0.2	setosa
6	5.4	3.9	1.7	0.4	setosa
7	4.6	3.4	1.4	0.3	setosa
8	5.0	3.4	1.5	0.2	setosa
9	4.4	2.9	1.4	0.2	setosa
10	4.9	3.1	1.5	0.1	setosa
11	5.4	3.7	1.5	0.2	setosa
12	4.8	3.4	1.6	0.2	setosa
13	4.8	3.0	1.4	0.1	setosa
14	4.3	3.0	1.1	0.1	setosa
15	5.8	4.0	1.2	0.2	setosa
16	5.7	4.4	1.5	0.4	setosa
17	5.4	3.9	1.3	0.4	setosa
18	5.1	3.5	1.4	0.3	setosa
19	5.7	3.8	1.7	0.3	setosa
20	5.1	3.8	1.5	0.3	setosa
21	5.4	3.4	1.7	0.2	setosa
22	5.1	3.7	1.5	0.4	setosa
23	4.6	3.6	1.0	0.2	setosa
24	5.1	3.3	1.7	0.5	setosa
25	4.8	3.4	1.9	0.2	setosa
26	5.0	3.0	1.6	0.2	setosa
27	5.0	3.4	1.6	0.4	setosa
28	5.2	3.5	1.5	0.2	setosa
29	5.2	3.4	1.4	0.2	setosa
30	4.7	3.2	1.6	0.2	setosa
31	4.8	3.1	1.6	0.2	setosa
32	5.4	3.4	1.5	0.4	setosa
33	5.2	4.1	1.5	0.1	setosa
34	5.5	4.2	1.4	0.2	setosa
35	4.9	3.1	1.5	0.2	setosa
36	5.0	3.2	1.2	0.2	setosa
37	5.5	3.5	1.3	0.2	setosa
38	4.9	3.6	1.4	0.1	setosa
39	4.4	3.0	1.3	0.2	setosa
40	5.1	3.4	1.5	0.2	setosa
41	5.0	3.5	1.3	0.3	setosa
42	4.5	2.3	1.3	0.3	setosa
43	4.4	3.2	1.3	0.2	setosa
44	5.0	3.5	1.6	0.6	setosa
45	5.1	3.8	1.9	0.4	setosa

46	4.8	3.0	1.4	0.3	setosa
47	5.1	3.8	1.6	0.2	setosa
48	4.6	3.2	1.4	0.2	setosa
49	5.3	3.7	1.5	0.2	setosa
50	5.0	3.3	1.4	0.2	setosa
51	7.0	3.2	4.7	1.4	versicolor
52	6.4	3.2	4.5	1.5	versicolor
53	6.9	3.1	4.9	1.5	versicolor
54	5.5	2.3	4.0	1.3	versicolor
55	6.5	2.8	4.6	1.5	versicolor
56	5.7	2.8	4.5	1.3	versicolor
57	6.3	3.3	4.7	1.6	versicolor
58	4.9	2.4	3.3	1.0	versicolor
59	6.6	2.9	4.6	1.3	versicolor
60	5.2	2.7	3.9	1.4	versicolor
61	5.0	2.0	3.5	1.0	versicolor
62	5.9	3.0	4.2	1.5	versicolor
63	6.0	2.2	4.0	1.0	versicolor
64	6.1	2.9	4.7	1.4	versicolor
65	5.6	2.9	3.6	1.3	versicolor
66	6.7	3.1	4.4	1.4	versicolor
67	5.6	3.0	4.5	1.5	versicolor
68	5.8	2.7	4.1	1.0	versicolor
69	6.2	2.2	4.5	1.5	versicolor
70	5.6	2.5	3.9	1.1	versicolor
71	5.9	3.2	4.8	1.8	versicolor
72	6.1	2.8	4.0	1.3	versicolor
73	6.3	2.5	4.9	1.5	versicolor
74	6.1	2.8	4.7	1.2	versicolor
75	6.4	2.9	4.3	1.3	versicolor
76	6.6	3.0	4.4	1.4	versicolor
77	6.8	2.8	4.8	1.4	versicolor
78	6.7	3.0	5.0	1.7	versicolor
79	6.0	2.9	4.5	1.5	versicolor
80	5.7	2.6	3.5	1.0	versicolor
81	5.5	2.4	3.8	1.1	versicolor
82	5.5	2.4	3.7	1.0	versicolor
83	5.8	2.7	3.9	1.2	versicolor
84	6.0	2.7	5.1	1.6	versicolor
85	5.4	3.0	4.5	1.5	versicolor
86	6.0	3.4	4.5	1.6	versicolor
87	6.7	3.1	4.7	1.5	versicolor
88	6.3	2.3	4.4	1.3	versicolor

89	5.6	3.0	4.1	1.3 versicolor
90	5.5	2.5	4.0	1.3 versicolor
91	5.5	2.6	4.4	1.2 versicolor
92	6.1	3.0	4.6	1.4 versicolor
93	5.8	2.6	4.0	1.2 versicolor
94	5.0	2.3	3.3	1.0 versicolor
95	5.6	2.7	4.2	1.3 versicolor
96	5.7	3.0	4.2	1.2 versicolor
97	5.7	2.9	4.2	1.3 versicolor
98	6.2	2.9	4.3	1.3 versicolor
99	5.1	2.5	3.0	1.1 versicolor
100	5.7	2.8	4.1	1.3 versicolor
101	6.3	3.3	6.0	2.5 virginica
102	5.8	2.7	5.1	1.9 virginica
103	7.1	3.0	5.9	2.1 virginica
104	6.3	2.9	5.6	1.8 virginica
105	6.5	3.0	5.8	2.2 virginica
106	7.6	3.0	6.6	2.1 virginica
107	4.9	2.5	4.5	1.7 virginica
108	7.3	2.9	6.3	1.8 virginica
109	6.7	2.5	5.8	1.8 virginica
110	7.2	3.6	6.1	2.5 virginica
111	6.5	3.2	5.1	2.0 virginica
112	6.4	2.7	5.3	1.9 virginica
113	6.8	3.0	5.5	2.1 virginica
114	5.7	2.5	5.0	2.0 virginica
115	5.8	2.8	5.1	2.4 virginica
116	6.4	3.2	5.3	2.3 virginica
117	6.5	3.0	5.5	1.8 virginica
118	7.7	3.8	6.7	2.2 virginica
119	7.7	2.6	6.9	2.3 virginica
120	6.0	2.2	5.0	1.5 virginica
121	6.9	3.2	5.7	2.3 virginica
122	5.6	2.8	4.9	2.0 virginica
123	7.7	2.8	6.7	2.0 virginica
124	6.3	2.7	4.9	1.8 virginica
125	6.7	3.3	5.7	2.1 virginica
126	7.2	3.2	6.0	1.8 virginica
127	6.2	2.8	4.8	1.8 virginica
128	6.1	3.0	4.9	1.8 virginica
129	6.4	2.8	5.6	2.1 virginica
130	7.2	3.0	5.8	1.6 virginica
131	7.4	2.8	6.1	1.9 virginica

132	7.9	3.8	6.4	2.0	virginica
133	6.4	2.8	5.6	2.2	virginica
134	6.3	2.8	5.1	1.5	virginica
135	6.1	2.6	5.6	1.4	virginica
136	7.7	3.0	6.1	2.3	virginica
137	6.3	3.4	5.6	2.4	virginica
138	6.4	3.1	5.5	1.8	virginica
139	6.0	3.0	4.8	1.8	virginica
140	6.9	3.1	5.4	2.1	virginica
141	6.7	3.1	5.6	2.4	virginica
142	6.9	3.1	5.1	2.3	virginica
143	5.8	2.7	5.1	1.9	virginica
144	6.8	3.2	5.9	2.3	virginica
145	6.7	3.3	5.7	2.5	virginica
146	6.7	3.0	5.2	2.3	virginica
147	6.3	2.5	5.0	1.9	virginica
148	6.5	3.0	5.2	2.0	virginica
149	6.2	3.4	5.4	2.3	virginica
150	5.9	3.0	5.1	1.8	virginica

```
iris %>% filter(Sepal.Length >= 4.7)
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3.0	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	5.0	3.6	1.4	0.2	setosa
5	5.4	3.9	1.7	0.4	setosa
6	5.0	3.4	1.5	0.2	setosa
7	4.9	3.1	1.5	0.1	setosa
8	5.4	3.7	1.5	0.2	setosa
9	4.8	3.4	1.6	0.2	setosa
10	4.8	3.0	1.4	0.1	setosa
11	5.8	4.0	1.2	0.2	setosa
12	5.7	4.4	1.5	0.4	setosa
13	5.4	3.9	1.3	0.4	setosa
14	5.1	3.5	1.4	0.3	setosa
15	5.7	3.8	1.7	0.3	setosa
16	5.1	3.8	1.5	0.3	setosa
17	5.4	3.4	1.7	0.2	setosa
18	5.1	3.7	1.5	0.4	setosa

19	5.1	3.3	1.7	0.5	setosa
20	4.8	3.4	1.9	0.2	setosa
21	5.0	3.0	1.6	0.2	setosa
22	5.0	3.4	1.6	0.4	setosa
23	5.2	3.5	1.5	0.2	setosa
24	5.2	3.4	1.4	0.2	setosa
25	4.7	3.2	1.6	0.2	setosa
26	4.8	3.1	1.6	0.2	setosa
27	5.4	3.4	1.5	0.4	setosa
28	5.2	4.1	1.5	0.1	setosa
29	5.5	4.2	1.4	0.2	setosa
30	4.9	3.1	1.5	0.2	setosa
31	5.0	3.2	1.2	0.2	setosa
32	5.5	3.5	1.3	0.2	setosa
33	4.9	3.6	1.4	0.1	setosa
34	5.1	3.4	1.5	0.2	setosa
35	5.0	3.5	1.3	0.3	setosa
36	5.0	3.5	1.6	0.6	setosa
37	5.1	3.8	1.9	0.4	setosa
38	4.8	3.0	1.4	0.3	setosa
39	5.1	3.8	1.6	0.2	setosa
40	5.3	3.7	1.5	0.2	setosa
41	5.0	3.3	1.4	0.2	setosa
42	7.0	3.2	4.7	1.4	versicolor
43	6.4	3.2	4.5	1.5	versicolor
44	6.9	3.1	4.9	1.5	versicolor
45	5.5	2.3	4.0	1.3	versicolor
46	6.5	2.8	4.6	1.5	versicolor
47	5.7	2.8	4.5	1.3	versicolor
48	6.3	3.3	4.7	1.6	versicolor
49	4.9	2.4	3.3	1.0	versicolor
50	6.6	2.9	4.6	1.3	versicolor
51	5.2	2.7	3.9	1.4	versicolor
52	5.0	2.0	3.5	1.0	versicolor
53	5.9	3.0	4.2	1.5	versicolor
54	6.0	2.2	4.0	1.0	versicolor
55	6.1	2.9	4.7	1.4	versicolor
56	5.6	2.9	3.6	1.3	versicolor
57	6.7	3.1	4.4	1.4	versicolor
58	5.6	3.0	4.5	1.5	versicolor
59	5.8	2.7	4.1	1.0	versicolor
60	6.2	2.2	4.5	1.5	versicolor
61	5.6	2.5	3.9	1.1	versicolor

62	5.9	3.2	4.8	1.8 versicolor
63	6.1	2.8	4.0	1.3 versicolor
64	6.3	2.5	4.9	1.5 versicolor
65	6.1	2.8	4.7	1.2 versicolor
66	6.4	2.9	4.3	1.3 versicolor
67	6.6	3.0	4.4	1.4 versicolor
68	6.8	2.8	4.8	1.4 versicolor
69	6.7	3.0	5.0	1.7 versicolor
70	6.0	2.9	4.5	1.5 versicolor
71	5.7	2.6	3.5	1.0 versicolor
72	5.5	2.4	3.8	1.1 versicolor
73	5.5	2.4	3.7	1.0 versicolor
74	5.8	2.7	3.9	1.2 versicolor
75	6.0	2.7	5.1	1.6 versicolor
76	5.4	3.0	4.5	1.5 versicolor
77	6.0	3.4	4.5	1.6 versicolor
78	6.7	3.1	4.7	1.5 versicolor
79	6.3	2.3	4.4	1.3 versicolor
80	5.6	3.0	4.1	1.3 versicolor
81	5.5	2.5	4.0	1.3 versicolor
82	5.5	2.6	4.4	1.2 versicolor
83	6.1	3.0	4.6	1.4 versicolor
84	5.8	2.6	4.0	1.2 versicolor
85	5.0	2.3	3.3	1.0 versicolor
86	5.6	2.7	4.2	1.3 versicolor
87	5.7	3.0	4.2	1.2 versicolor
88	5.7	2.9	4.2	1.3 versicolor
89	6.2	2.9	4.3	1.3 versicolor
90	5.1	2.5	3.0	1.1 versicolor
91	5.7	2.8	4.1	1.3 versicolor
92	6.3	3.3	6.0	2.5 virginica
93	5.8	2.7	5.1	1.9 virginica
94	7.1	3.0	5.9	2.1 virginica
95	6.3	2.9	5.6	1.8 virginica
96	6.5	3.0	5.8	2.2 virginica
97	7.6	3.0	6.6	2.1 virginica
98	4.9	2.5	4.5	1.7 virginica
99	7.3	2.9	6.3	1.8 virginica
100	6.7	2.5	5.8	1.8 virginica
101	7.2	3.6	6.1	2.5 virginica
102	6.5	3.2	5.1	2.0 virginica
103	6.4	2.7	5.3	1.9 virginica
104	6.8	3.0	5.5	2.1 virginica

105	5.7	2.5	5.0	2.0	virginica
106	5.8	2.8	5.1	2.4	virginica
107	6.4	3.2	5.3	2.3	virginica
108	6.5	3.0	5.5	1.8	virginica
109	7.7	3.8	6.7	2.2	virginica
110	7.7	2.6	6.9	2.3	virginica
111	6.0	2.2	5.0	1.5	virginica
112	6.9	3.2	5.7	2.3	virginica
113	5.6	2.8	4.9	2.0	virginica
114	7.7	2.8	6.7	2.0	virginica
115	6.3	2.7	4.9	1.8	virginica
116	6.7	3.3	5.7	2.1	virginica
117	7.2	3.2	6.0	1.8	virginica
118	6.2	2.8	4.8	1.8	virginica
119	6.1	3.0	4.9	1.8	virginica
120	6.4	2.8	5.6	2.1	virginica
121	7.2	3.0	5.8	1.6	virginica
122	7.4	2.8	6.1	1.9	virginica
123	7.9	3.8	6.4	2.0	virginica
124	6.4	2.8	5.6	2.2	virginica
125	6.3	2.8	5.1	1.5	virginica
126	6.1	2.6	5.6	1.4	virginica
127	7.7	3.0	6.1	2.3	virginica
128	6.3	3.4	5.6	2.4	virginica
129	6.4	3.1	5.5	1.8	virginica
130	6.0	3.0	4.8	1.8	virginica
131	6.9	3.1	5.4	2.1	virginica
132	6.7	3.1	5.6	2.4	virginica
133	6.9	3.1	5.1	2.3	virginica
134	5.8	2.7	5.1	1.9	virginica
135	6.8	3.2	5.9	2.3	virginica
136	6.7	3.3	5.7	2.5	virginica
137	6.7	3.0	5.2	2.3	virginica
138	6.3	2.5	5.0	1.9	virginica
139	6.5	3.0	5.2	2.0	virginica
140	6.2	3.4	5.4	2.3	virginica
141	5.9	3.0	5.1	1.8	virginica

```
iris %>% filter(Sepal.Length >= 4.7,
               Petal.Length < 1.5)
```

```
Sepal.Length Sepal.Width Petal.Length Petal.Width Species
```

1	5.1	3.5	1.4	0.2	setosa
2	4.9	3.0	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	5.0	3.6	1.4	0.2	setosa
5	4.8	3.0	1.4	0.1	setosa
6	5.8	4.0	1.2	0.2	setosa
7	5.4	3.9	1.3	0.4	setosa
8	5.1	3.5	1.4	0.3	setosa
9	5.2	3.4	1.4	0.2	setosa
10	5.5	4.2	1.4	0.2	setosa
11	5.0	3.2	1.2	0.2	setosa
12	5.5	3.5	1.3	0.2	setosa
13	4.9	3.6	1.4	0.1	setosa
14	5.0	3.5	1.3	0.3	setosa
15	4.8	3.0	1.4	0.3	setosa
16	5.0	3.3	1.4	0.2	setosa

```
iris %>% filter(Sepal.Length >= 4.7 | Petal.Length < 1.5)
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3.0	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	5.0	3.6	1.4	0.2	setosa
5	5.4	3.9	1.7	0.4	setosa
6	4.6	3.4	1.4	0.3	setosa
7	5.0	3.4	1.5	0.2	setosa
8	4.4	2.9	1.4	0.2	setosa
9	4.9	3.1	1.5	0.1	setosa
10	5.4	3.7	1.5	0.2	setosa
11	4.8	3.4	1.6	0.2	setosa
12	4.8	3.0	1.4	0.1	setosa
13	4.3	3.0	1.1	0.1	setosa
14	5.8	4.0	1.2	0.2	setosa
15	5.7	4.4	1.5	0.4	setosa
16	5.4	3.9	1.3	0.4	setosa
17	5.1	3.5	1.4	0.3	setosa
18	5.7	3.8	1.7	0.3	setosa
19	5.1	3.8	1.5	0.3	setosa
20	5.4	3.4	1.7	0.2	setosa
21	5.1	3.7	1.5	0.4	setosa

22	4.6	3.6	1.0	0.2	setosa
23	5.1	3.3	1.7	0.5	setosa
24	4.8	3.4	1.9	0.2	setosa
25	5.0	3.0	1.6	0.2	setosa
26	5.0	3.4	1.6	0.4	setosa
27	5.2	3.5	1.5	0.2	setosa
28	5.2	3.4	1.4	0.2	setosa
29	4.7	3.2	1.6	0.2	setosa
30	4.8	3.1	1.6	0.2	setosa
31	5.4	3.4	1.5	0.4	setosa
32	5.2	4.1	1.5	0.1	setosa
33	5.5	4.2	1.4	0.2	setosa
34	4.9	3.1	1.5	0.2	setosa
35	5.0	3.2	1.2	0.2	setosa
36	5.5	3.5	1.3	0.2	setosa
37	4.9	3.6	1.4	0.1	setosa
38	4.4	3.0	1.3	0.2	setosa
39	5.1	3.4	1.5	0.2	setosa
40	5.0	3.5	1.3	0.3	setosa
41	4.5	2.3	1.3	0.3	setosa
42	4.4	3.2	1.3	0.2	setosa
43	5.0	3.5	1.6	0.6	setosa
44	5.1	3.8	1.9	0.4	setosa
45	4.8	3.0	1.4	0.3	setosa
46	5.1	3.8	1.6	0.2	setosa
47	4.6	3.2	1.4	0.2	setosa
48	5.3	3.7	1.5	0.2	setosa
49	5.0	3.3	1.4	0.2	setosa
50	7.0	3.2	4.7	1.4	versicolor
51	6.4	3.2	4.5	1.5	versicolor
52	6.9	3.1	4.9	1.5	versicolor
53	5.5	2.3	4.0	1.3	versicolor
54	6.5	2.8	4.6	1.5	versicolor
55	5.7	2.8	4.5	1.3	versicolor
56	6.3	3.3	4.7	1.6	versicolor
57	4.9	2.4	3.3	1.0	versicolor
58	6.6	2.9	4.6	1.3	versicolor
59	5.2	2.7	3.9	1.4	versicolor
60	5.0	2.0	3.5	1.0	versicolor
61	5.9	3.0	4.2	1.5	versicolor
62	6.0	2.2	4.0	1.0	versicolor
63	6.1	2.9	4.7	1.4	versicolor
64	5.6	2.9	3.6	1.3	versicolor

65	6.7	3.1	4.4	1.4 versicolor
66	5.6	3.0	4.5	1.5 versicolor
67	5.8	2.7	4.1	1.0 versicolor
68	6.2	2.2	4.5	1.5 versicolor
69	5.6	2.5	3.9	1.1 versicolor
70	5.9	3.2	4.8	1.8 versicolor
71	6.1	2.8	4.0	1.3 versicolor
72	6.3	2.5	4.9	1.5 versicolor
73	6.1	2.8	4.7	1.2 versicolor
74	6.4	2.9	4.3	1.3 versicolor
75	6.6	3.0	4.4	1.4 versicolor
76	6.8	2.8	4.8	1.4 versicolor
77	6.7	3.0	5.0	1.7 versicolor
78	6.0	2.9	4.5	1.5 versicolor
79	5.7	2.6	3.5	1.0 versicolor
80	5.5	2.4	3.8	1.1 versicolor
81	5.5	2.4	3.7	1.0 versicolor
82	5.8	2.7	3.9	1.2 versicolor
83	6.0	2.7	5.1	1.6 versicolor
84	5.4	3.0	4.5	1.5 versicolor
85	6.0	3.4	4.5	1.6 versicolor
86	6.7	3.1	4.7	1.5 versicolor
87	6.3	2.3	4.4	1.3 versicolor
88	5.6	3.0	4.1	1.3 versicolor
89	5.5	2.5	4.0	1.3 versicolor
90	5.5	2.6	4.4	1.2 versicolor
91	6.1	3.0	4.6	1.4 versicolor
92	5.8	2.6	4.0	1.2 versicolor
93	5.0	2.3	3.3	1.0 versicolor
94	5.6	2.7	4.2	1.3 versicolor
95	5.7	3.0	4.2	1.2 versicolor
96	5.7	2.9	4.2	1.3 versicolor
97	6.2	2.9	4.3	1.3 versicolor
98	5.1	2.5	3.0	1.1 versicolor
99	5.7	2.8	4.1	1.3 versicolor
100	6.3	3.3	6.0	2.5 virginica
101	5.8	2.7	5.1	1.9 virginica
102	7.1	3.0	5.9	2.1 virginica
103	6.3	2.9	5.6	1.8 virginica
104	6.5	3.0	5.8	2.2 virginica
105	7.6	3.0	6.6	2.1 virginica
106	4.9	2.5	4.5	1.7 virginica
107	7.3	2.9	6.3	1.8 virginica

108	6.7	2.5	5.8	1.8	virginica
109	7.2	3.6	6.1	2.5	virginica
110	6.5	3.2	5.1	2.0	virginica
111	6.4	2.7	5.3	1.9	virginica
112	6.8	3.0	5.5	2.1	virginica
113	5.7	2.5	5.0	2.0	virginica
114	5.8	2.8	5.1	2.4	virginica
115	6.4	3.2	5.3	2.3	virginica
116	6.5	3.0	5.5	1.8	virginica
117	7.7	3.8	6.7	2.2	virginica
118	7.7	2.6	6.9	2.3	virginica
119	6.0	2.2	5.0	1.5	virginica
120	6.9	3.2	5.7	2.3	virginica
121	5.6	2.8	4.9	2.0	virginica
122	7.7	2.8	6.7	2.0	virginica
123	6.3	2.7	4.9	1.8	virginica
124	6.7	3.3	5.7	2.1	virginica
125	7.2	3.2	6.0	1.8	virginica
126	6.2	2.8	4.8	1.8	virginica
127	6.1	3.0	4.9	1.8	virginica
128	6.4	2.8	5.6	2.1	virginica
129	7.2	3.0	5.8	1.6	virginica
130	7.4	2.8	6.1	1.9	virginica
131	7.9	3.8	6.4	2.0	virginica
132	6.4	2.8	5.6	2.2	virginica
133	6.3	2.8	5.1	1.5	virginica
134	6.1	2.6	5.6	1.4	virginica
135	7.7	3.0	6.1	2.3	virginica
136	6.3	3.4	5.6	2.4	virginica
137	6.4	3.1	5.5	1.8	virginica
138	6.0	3.0	4.8	1.8	virginica
139	6.9	3.1	5.4	2.1	virginica
140	6.7	3.1	5.6	2.4	virginica
141	6.9	3.1	5.1	2.3	virginica
142	5.8	2.7	5.1	1.9	virginica
143	6.8	3.2	5.9	2.3	virginica
144	6.7	3.3	5.7	2.5	virginica
145	6.7	3.0	5.2	2.3	virginica
146	6.3	2.5	5.0	1.9	virginica
147	6.5	3.0	5.2	2.0	virginica
148	6.2	3.4	5.4	2.3	virginica
149	5.9	3.0	5.1	1.8	virginica

```
iris %>% filter(Species == "setosa")
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3.0	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	4.6	3.1	1.5	0.2	setosa
5	5.0	3.6	1.4	0.2	setosa
6	5.4	3.9	1.7	0.4	setosa
7	4.6	3.4	1.4	0.3	setosa
8	5.0	3.4	1.5	0.2	setosa
9	4.4	2.9	1.4	0.2	setosa
10	4.9	3.1	1.5	0.1	setosa
11	5.4	3.7	1.5	0.2	setosa
12	4.8	3.4	1.6	0.2	setosa
13	4.8	3.0	1.4	0.1	setosa
14	4.3	3.0	1.1	0.1	setosa
15	5.8	4.0	1.2	0.2	setosa
16	5.7	4.4	1.5	0.4	setosa
17	5.4	3.9	1.3	0.4	setosa
18	5.1	3.5	1.4	0.3	setosa
19	5.7	3.8	1.7	0.3	setosa
20	5.1	3.8	1.5	0.3	setosa
21	5.4	3.4	1.7	0.2	setosa
22	5.1	3.7	1.5	0.4	setosa
23	4.6	3.6	1.0	0.2	setosa
24	5.1	3.3	1.7	0.5	setosa
25	4.8	3.4	1.9	0.2	setosa
26	5.0	3.0	1.6	0.2	setosa
27	5.0	3.4	1.6	0.4	setosa
28	5.2	3.5	1.5	0.2	setosa
29	5.2	3.4	1.4	0.2	setosa
30	4.7	3.2	1.6	0.2	setosa
31	4.8	3.1	1.6	0.2	setosa
32	5.4	3.4	1.5	0.4	setosa
33	5.2	4.1	1.5	0.1	setosa
34	5.5	4.2	1.4	0.2	setosa
35	4.9	3.1	1.5	0.2	setosa
36	5.0	3.2	1.2	0.2	setosa
37	5.5	3.5	1.3	0.2	setosa
38	4.9	3.6	1.4	0.1	setosa
39	4.4	3.0	1.3	0.2	setosa

40	5.1	3.4	1.5	0.2	setosa
41	5.0	3.5	1.3	0.3	setosa
42	4.5	2.3	1.3	0.3	setosa
43	4.4	3.2	1.3	0.2	setosa
44	5.0	3.5	1.6	0.6	setosa
45	5.1	3.8	1.9	0.4	setosa
46	4.8	3.0	1.4	0.3	setosa
47	5.1	3.8	1.6	0.2	setosa
48	4.6	3.2	1.4	0.2	setosa
49	5.3	3.7	1.5	0.2	setosa
50	5.0	3.3	1.4	0.2	setosa

```
iris %>% filter(Species != "setosa")
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	7.0	3.2	4.7	1.4	versicolor
2	6.4	3.2	4.5	1.5	versicolor
3	6.9	3.1	4.9	1.5	versicolor
4	5.5	2.3	4.0	1.3	versicolor
5	6.5	2.8	4.6	1.5	versicolor
6	5.7	2.8	4.5	1.3	versicolor
7	6.3	3.3	4.7	1.6	versicolor
8	4.9	2.4	3.3	1.0	versicolor
9	6.6	2.9	4.6	1.3	versicolor
10	5.2	2.7	3.9	1.4	versicolor
11	5.0	2.0	3.5	1.0	versicolor
12	5.9	3.0	4.2	1.5	versicolor
13	6.0	2.2	4.0	1.0	versicolor
14	6.1	2.9	4.7	1.4	versicolor
15	5.6	2.9	3.6	1.3	versicolor
16	6.7	3.1	4.4	1.4	versicolor
17	5.6	3.0	4.5	1.5	versicolor
18	5.8	2.7	4.1	1.0	versicolor
19	6.2	2.2	4.5	1.5	versicolor
20	5.6	2.5	3.9	1.1	versicolor
21	5.9	3.2	4.8	1.8	versicolor
22	6.1	2.8	4.0	1.3	versicolor
23	6.3	2.5	4.9	1.5	versicolor
24	6.1	2.8	4.7	1.2	versicolor
25	6.4	2.9	4.3	1.3	versicolor
26	6.6	3.0	4.4	1.4	versicolor

27	6.8	2.8	4.8	1.4 versicolor
28	6.7	3.0	5.0	1.7 versicolor
29	6.0	2.9	4.5	1.5 versicolor
30	5.7	2.6	3.5	1.0 versicolor
31	5.5	2.4	3.8	1.1 versicolor
32	5.5	2.4	3.7	1.0 versicolor
33	5.8	2.7	3.9	1.2 versicolor
34	6.0	2.7	5.1	1.6 versicolor
35	5.4	3.0	4.5	1.5 versicolor
36	6.0	3.4	4.5	1.6 versicolor
37	6.7	3.1	4.7	1.5 versicolor
38	6.3	2.3	4.4	1.3 versicolor
39	5.6	3.0	4.1	1.3 versicolor
40	5.5	2.5	4.0	1.3 versicolor
41	5.5	2.6	4.4	1.2 versicolor
42	6.1	3.0	4.6	1.4 versicolor
43	5.8	2.6	4.0	1.2 versicolor
44	5.0	2.3	3.3	1.0 versicolor
45	5.6	2.7	4.2	1.3 versicolor
46	5.7	3.0	4.2	1.2 versicolor
47	5.7	2.9	4.2	1.3 versicolor
48	6.2	2.9	4.3	1.3 versicolor
49	5.1	2.5	3.0	1.1 versicolor
50	5.7	2.8	4.1	1.3 versicolor
51	6.3	3.3	6.0	2.5 virginica
52	5.8	2.7	5.1	1.9 virginica
53	7.1	3.0	5.9	2.1 virginica
54	6.3	2.9	5.6	1.8 virginica
55	6.5	3.0	5.8	2.2 virginica
56	7.6	3.0	6.6	2.1 virginica
57	4.9	2.5	4.5	1.7 virginica
58	7.3	2.9	6.3	1.8 virginica
59	6.7	2.5	5.8	1.8 virginica
60	7.2	3.6	6.1	2.5 virginica
61	6.5	3.2	5.1	2.0 virginica
62	6.4	2.7	5.3	1.9 virginica
63	6.8	3.0	5.5	2.1 virginica
64	5.7	2.5	5.0	2.0 virginica
65	5.8	2.8	5.1	2.4 virginica
66	6.4	3.2	5.3	2.3 virginica
67	6.5	3.0	5.5	1.8 virginica
68	7.7	3.8	6.7	2.2 virginica
69	7.7	2.6	6.9	2.3 virginica

70	6.0	2.2	5.0	1.5	virginica
71	6.9	3.2	5.7	2.3	virginica
72	5.6	2.8	4.9	2.0	virginica
73	7.7	2.8	6.7	2.0	virginica
74	6.3	2.7	4.9	1.8	virginica
75	6.7	3.3	5.7	2.1	virginica
76	7.2	3.2	6.0	1.8	virginica
77	6.2	2.8	4.8	1.8	virginica
78	6.1	3.0	4.9	1.8	virginica
79	6.4	2.8	5.6	2.1	virginica
80	7.2	3.0	5.8	1.6	virginica
81	7.4	2.8	6.1	1.9	virginica
82	7.9	3.8	6.4	2.0	virginica
83	6.4	2.8	5.6	2.2	virginica
84	6.3	2.8	5.1	1.5	virginica
85	6.1	2.6	5.6	1.4	virginica
86	7.7	3.0	6.1	2.3	virginica
87	6.3	3.4	5.6	2.4	virginica
88	6.4	3.1	5.5	1.8	virginica
89	6.0	3.0	4.8	1.8	virginica
90	6.9	3.1	5.4	2.1	virginica
91	6.7	3.1	5.6	2.4	virginica
92	6.9	3.1	5.1	2.3	virginica
93	5.8	2.7	5.1	1.9	virginica
94	6.8	3.2	5.9	2.3	virginica
95	6.7	3.3	5.7	2.5	virginica
96	6.7	3.0	5.2	2.3	virginica
97	6.3	2.5	5.0	1.9	virginica
98	6.5	3.0	5.2	2.0	virginica
99	6.2	3.4	5.4	2.3	virginica
100	5.9	3.0	5.1	1.8	virginica

```
iris %>% filter(Species %in% c("virginica","versicolor"))
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	7.0	3.2	4.7	1.4	versicolor
2	6.4	3.2	4.5	1.5	versicolor
3	6.9	3.1	4.9	1.5	versicolor
4	5.5	2.3	4.0	1.3	versicolor
5	6.5	2.8	4.6	1.5	versicolor
6	5.7	2.8	4.5	1.3	versicolor

7	6.3	3.3	4.7	1.6 versicolor
8	4.9	2.4	3.3	1.0 versicolor
9	6.6	2.9	4.6	1.3 versicolor
10	5.2	2.7	3.9	1.4 versicolor
11	5.0	2.0	3.5	1.0 versicolor
12	5.9	3.0	4.2	1.5 versicolor
13	6.0	2.2	4.0	1.0 versicolor
14	6.1	2.9	4.7	1.4 versicolor
15	5.6	2.9	3.6	1.3 versicolor
16	6.7	3.1	4.4	1.4 versicolor
17	5.6	3.0	4.5	1.5 versicolor
18	5.8	2.7	4.1	1.0 versicolor
19	6.2	2.2	4.5	1.5 versicolor
20	5.6	2.5	3.9	1.1 versicolor
21	5.9	3.2	4.8	1.8 versicolor
22	6.1	2.8	4.0	1.3 versicolor
23	6.3	2.5	4.9	1.5 versicolor
24	6.1	2.8	4.7	1.2 versicolor
25	6.4	2.9	4.3	1.3 versicolor
26	6.6	3.0	4.4	1.4 versicolor
27	6.8	2.8	4.8	1.4 versicolor
28	6.7	3.0	5.0	1.7 versicolor
29	6.0	2.9	4.5	1.5 versicolor
30	5.7	2.6	3.5	1.0 versicolor
31	5.5	2.4	3.8	1.1 versicolor
32	5.5	2.4	3.7	1.0 versicolor
33	5.8	2.7	3.9	1.2 versicolor
34	6.0	2.7	5.1	1.6 versicolor
35	5.4	3.0	4.5	1.5 versicolor
36	6.0	3.4	4.5	1.6 versicolor
37	6.7	3.1	4.7	1.5 versicolor
38	6.3	2.3	4.4	1.3 versicolor
39	5.6	3.0	4.1	1.3 versicolor
40	5.5	2.5	4.0	1.3 versicolor
41	5.5	2.6	4.4	1.2 versicolor
42	6.1	3.0	4.6	1.4 versicolor
43	5.8	2.6	4.0	1.2 versicolor
44	5.0	2.3	3.3	1.0 versicolor
45	5.6	2.7	4.2	1.3 versicolor
46	5.7	3.0	4.2	1.2 versicolor
47	5.7	2.9	4.2	1.3 versicolor
48	6.2	2.9	4.3	1.3 versicolor
49	5.1	2.5	3.0	1.1 versicolor

50	5.7	2.8	4.1	1.3	versicolor
51	6.3	3.3	6.0	2.5	virginica
52	5.8	2.7	5.1	1.9	virginica
53	7.1	3.0	5.9	2.1	virginica
54	6.3	2.9	5.6	1.8	virginica
55	6.5	3.0	5.8	2.2	virginica
56	7.6	3.0	6.6	2.1	virginica
57	4.9	2.5	4.5	1.7	virginica
58	7.3	2.9	6.3	1.8	virginica
59	6.7	2.5	5.8	1.8	virginica
60	7.2	3.6	6.1	2.5	virginica
61	6.5	3.2	5.1	2.0	virginica
62	6.4	2.7	5.3	1.9	virginica
63	6.8	3.0	5.5	2.1	virginica
64	5.7	2.5	5.0	2.0	virginica
65	5.8	2.8	5.1	2.4	virginica
66	6.4	3.2	5.3	2.3	virginica
67	6.5	3.0	5.5	1.8	virginica
68	7.7	3.8	6.7	2.2	virginica
69	7.7	2.6	6.9	2.3	virginica
70	6.0	2.2	5.0	1.5	virginica
71	6.9	3.2	5.7	2.3	virginica
72	5.6	2.8	4.9	2.0	virginica
73	7.7	2.8	6.7	2.0	virginica
74	6.3	2.7	4.9	1.8	virginica
75	6.7	3.3	5.7	2.1	virginica
76	7.2	3.2	6.0	1.8	virginica
77	6.2	2.8	4.8	1.8	virginica
78	6.1	3.0	4.9	1.8	virginica
79	6.4	2.8	5.6	2.1	virginica
80	7.2	3.0	5.8	1.6	virginica
81	7.4	2.8	6.1	1.9	virginica
82	7.9	3.8	6.4	2.0	virginica
83	6.4	2.8	5.6	2.2	virginica
84	6.3	2.8	5.1	1.5	virginica
85	6.1	2.6	5.6	1.4	virginica
86	7.7	3.0	6.1	2.3	virginica
87	6.3	3.4	5.6	2.4	virginica
88	6.4	3.1	5.5	1.8	virginica
89	6.0	3.0	4.8	1.8	virginica
90	6.9	3.1	5.4	2.1	virginica
91	6.7	3.1	5.6	2.4	virginica
92	6.9	3.1	5.1	2.3	virginica

93	5.8	2.7	5.1	1.9	virginica
94	6.8	3.2	5.9	2.3	virginica
95	6.7	3.3	5.7	2.5	virginica
96	6.7	3.0	5.2	2.3	virginica
97	6.3	2.5	5.0	1.9	virginica
98	6.5	3.0	5.2	2.0	virginica
99	6.2	3.4	5.4	2.3	virginica
100	5.9	3.0	5.1	1.8	virginica

2.1.5 arrange

Colocar a tabela em ordem (linhas).

```
iris %>% arrange(Sepal.Length)
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	4.3	3.0	1.1	0.1	setosa
2	4.4	2.9	1.4	0.2	setosa
3	4.4	3.0	1.3	0.2	setosa
4	4.4	3.2	1.3	0.2	setosa
5	4.5	2.3	1.3	0.3	setosa
6	4.6	3.1	1.5	0.2	setosa
7	4.6	3.4	1.4	0.3	setosa
8	4.6	3.6	1.0	0.2	setosa
9	4.6	3.2	1.4	0.2	setosa
10	4.7	3.2	1.3	0.2	setosa
11	4.7	3.2	1.6	0.2	setosa
12	4.8	3.4	1.6	0.2	setosa
13	4.8	3.0	1.4	0.1	setosa
14	4.8	3.4	1.9	0.2	setosa
15	4.8	3.1	1.6	0.2	setosa
16	4.8	3.0	1.4	0.3	setosa
17	4.9	3.0	1.4	0.2	setosa
18	4.9	3.1	1.5	0.1	setosa
19	4.9	3.1	1.5	0.2	setosa
20	4.9	3.6	1.4	0.1	setosa
21	4.9	2.4	3.3	1.0	versicolor
22	4.9	2.5	4.5	1.7	virginica
23	5.0	3.6	1.4	0.2	setosa
24	5.0	3.4	1.5	0.2	setosa
25	5.0	3.0	1.6	0.2	setosa

26	5.0	3.4	1.6	0.4	setosa
27	5.0	3.2	1.2	0.2	setosa
28	5.0	3.5	1.3	0.3	setosa
29	5.0	3.5	1.6	0.6	setosa
30	5.0	3.3	1.4	0.2	setosa
31	5.0	2.0	3.5	1.0	versicolor
32	5.0	2.3	3.3	1.0	versicolor
33	5.1	3.5	1.4	0.2	setosa
34	5.1	3.5	1.4	0.3	setosa
35	5.1	3.8	1.5	0.3	setosa
36	5.1	3.7	1.5	0.4	setosa
37	5.1	3.3	1.7	0.5	setosa
38	5.1	3.4	1.5	0.2	setosa
39	5.1	3.8	1.9	0.4	setosa
40	5.1	3.8	1.6	0.2	setosa
41	5.1	2.5	3.0	1.1	versicolor
42	5.2	3.5	1.5	0.2	setosa
43	5.2	3.4	1.4	0.2	setosa
44	5.2	4.1	1.5	0.1	setosa
45	5.2	2.7	3.9	1.4	versicolor
46	5.3	3.7	1.5	0.2	setosa
47	5.4	3.9	1.7	0.4	setosa
48	5.4	3.7	1.5	0.2	setosa
49	5.4	3.9	1.3	0.4	setosa
50	5.4	3.4	1.7	0.2	setosa
51	5.4	3.4	1.5	0.4	setosa
52	5.4	3.0	4.5	1.5	versicolor
53	5.5	4.2	1.4	0.2	setosa
54	5.5	3.5	1.3	0.2	setosa
55	5.5	2.3	4.0	1.3	versicolor
56	5.5	2.4	3.8	1.1	versicolor
57	5.5	2.4	3.7	1.0	versicolor
58	5.5	2.5	4.0	1.3	versicolor
59	5.5	2.6	4.4	1.2	versicolor
60	5.6	2.9	3.6	1.3	versicolor
61	5.6	3.0	4.5	1.5	versicolor
62	5.6	2.5	3.9	1.1	versicolor
63	5.6	3.0	4.1	1.3	versicolor
64	5.6	2.7	4.2	1.3	versicolor
65	5.6	2.8	4.9	2.0	virginica
66	5.7	4.4	1.5	0.4	setosa
67	5.7	3.8	1.7	0.3	setosa
68	5.7	2.8	4.5	1.3	versicolor

69	5.7	2.6	3.5	1.0 versicolor
70	5.7	3.0	4.2	1.2 versicolor
71	5.7	2.9	4.2	1.3 versicolor
72	5.7	2.8	4.1	1.3 versicolor
73	5.7	2.5	5.0	2.0 virginica
74	5.8	4.0	1.2	0.2 setosa
75	5.8	2.7	4.1	1.0 versicolor
76	5.8	2.7	3.9	1.2 versicolor
77	5.8	2.6	4.0	1.2 versicolor
78	5.8	2.7	5.1	1.9 virginica
79	5.8	2.8	5.1	2.4 virginica
80	5.8	2.7	5.1	1.9 virginica
81	5.9	3.0	4.2	1.5 versicolor
82	5.9	3.2	4.8	1.8 versicolor
83	5.9	3.0	5.1	1.8 virginica
84	6.0	2.2	4.0	1.0 versicolor
85	6.0	2.9	4.5	1.5 versicolor
86	6.0	2.7	5.1	1.6 versicolor
87	6.0	3.4	4.5	1.6 versicolor
88	6.0	2.2	5.0	1.5 virginica
89	6.0	3.0	4.8	1.8 virginica
90	6.1	2.9	4.7	1.4 versicolor
91	6.1	2.8	4.0	1.3 versicolor
92	6.1	2.8	4.7	1.2 versicolor
93	6.1	3.0	4.6	1.4 versicolor
94	6.1	3.0	4.9	1.8 virginica
95	6.1	2.6	5.6	1.4 virginica
96	6.2	2.2	4.5	1.5 versicolor
97	6.2	2.9	4.3	1.3 versicolor
98	6.2	2.8	4.8	1.8 virginica
99	6.2	3.4	5.4	2.3 virginica
100	6.3	3.3	4.7	1.6 versicolor
101	6.3	2.5	4.9	1.5 versicolor
102	6.3	2.3	4.4	1.3 versicolor
103	6.3	3.3	6.0	2.5 virginica
104	6.3	2.9	5.6	1.8 virginica
105	6.3	2.7	4.9	1.8 virginica
106	6.3	2.8	5.1	1.5 virginica
107	6.3	3.4	5.6	2.4 virginica
108	6.3	2.5	5.0	1.9 virginica
109	6.4	3.2	4.5	1.5 versicolor
110	6.4	2.9	4.3	1.3 versicolor
111	6.4	2.7	5.3	1.9 virginica

112	6.4	3.2	5.3	2.3	virginica
113	6.4	2.8	5.6	2.1	virginica
114	6.4	2.8	5.6	2.2	virginica
115	6.4	3.1	5.5	1.8	virginica
116	6.5	2.8	4.6	1.5	versicolor
117	6.5	3.0	5.8	2.2	virginica
118	6.5	3.2	5.1	2.0	virginica
119	6.5	3.0	5.5	1.8	virginica
120	6.5	3.0	5.2	2.0	virginica
121	6.6	2.9	4.6	1.3	versicolor
122	6.6	3.0	4.4	1.4	versicolor
123	6.7	3.1	4.4	1.4	versicolor
124	6.7	3.0	5.0	1.7	versicolor
125	6.7	3.1	4.7	1.5	versicolor
126	6.7	2.5	5.8	1.8	virginica
127	6.7	3.3	5.7	2.1	virginica
128	6.7	3.1	5.6	2.4	virginica
129	6.7	3.3	5.7	2.5	virginica
130	6.7	3.0	5.2	2.3	virginica
131	6.8	2.8	4.8	1.4	versicolor
132	6.8	3.0	5.5	2.1	virginica
133	6.8	3.2	5.9	2.3	virginica
134	6.9	3.1	4.9	1.5	versicolor
135	6.9	3.2	5.7	2.3	virginica
136	6.9	3.1	5.4	2.1	virginica
137	6.9	3.1	5.1	2.3	virginica
138	7.0	3.2	4.7	1.4	versicolor
139	7.1	3.0	5.9	2.1	virginica
140	7.2	3.6	6.1	2.5	virginica
141	7.2	3.2	6.0	1.8	virginica
142	7.2	3.0	5.8	1.6	virginica
143	7.3	2.9	6.3	1.8	virginica
144	7.4	2.8	6.1	1.9	virginica
145	7.6	3.0	6.6	2.1	virginica
146	7.7	3.8	6.7	2.2	virginica
147	7.7	2.6	6.9	2.3	virginica
148	7.7	2.8	6.7	2.0	virginica
149	7.7	3.0	6.1	2.3	virginica
150	7.9	3.8	6.4	2.0	virginica

```
iris %>% arrange(desc(Sepal.Length))
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	7.9	3.8	6.4	2.0	virginica
2	7.7	3.8	6.7	2.2	virginica
3	7.7	2.6	6.9	2.3	virginica
4	7.7	2.8	6.7	2.0	virginica
5	7.7	3.0	6.1	2.3	virginica
6	7.6	3.0	6.6	2.1	virginica
7	7.4	2.8	6.1	1.9	virginica
8	7.3	2.9	6.3	1.8	virginica
9	7.2	3.6	6.1	2.5	virginica
10	7.2	3.2	6.0	1.8	virginica
11	7.2	3.0	5.8	1.6	virginica
12	7.1	3.0	5.9	2.1	virginica
13	7.0	3.2	4.7	1.4	versicolor
14	6.9	3.1	4.9	1.5	versicolor
15	6.9	3.2	5.7	2.3	virginica
16	6.9	3.1	5.4	2.1	virginica
17	6.9	3.1	5.1	2.3	virginica
18	6.8	2.8	4.8	1.4	versicolor
19	6.8	3.0	5.5	2.1	virginica
20	6.8	3.2	5.9	2.3	virginica
21	6.7	3.1	4.4	1.4	versicolor
22	6.7	3.0	5.0	1.7	versicolor
23	6.7	3.1	4.7	1.5	versicolor
24	6.7	2.5	5.8	1.8	virginica
25	6.7	3.3	5.7	2.1	virginica
26	6.7	3.1	5.6	2.4	virginica
27	6.7	3.3	5.7	2.5	virginica
28	6.7	3.0	5.2	2.3	virginica
29	6.6	2.9	4.6	1.3	versicolor
30	6.6	3.0	4.4	1.4	versicolor
31	6.5	2.8	4.6	1.5	versicolor
32	6.5	3.0	5.8	2.2	virginica
33	6.5	3.2	5.1	2.0	virginica
34	6.5	3.0	5.5	1.8	virginica
35	6.5	3.0	5.2	2.0	virginica
36	6.4	3.2	4.5	1.5	versicolor
37	6.4	2.9	4.3	1.3	versicolor
38	6.4	2.7	5.3	1.9	virginica
39	6.4	3.2	5.3	2.3	virginica
40	6.4	2.8	5.6	2.1	virginica
41	6.4	2.8	5.6	2.2	virginica
42	6.4	3.1	5.5	1.8	virginica

43	6.3	3.3	4.7	1.6 versicolor
44	6.3	2.5	4.9	1.5 versicolor
45	6.3	2.3	4.4	1.3 versicolor
46	6.3	3.3	6.0	2.5 virginica
47	6.3	2.9	5.6	1.8 virginica
48	6.3	2.7	4.9	1.8 virginica
49	6.3	2.8	5.1	1.5 virginica
50	6.3	3.4	5.6	2.4 virginica
51	6.3	2.5	5.0	1.9 virginica
52	6.2	2.2	4.5	1.5 versicolor
53	6.2	2.9	4.3	1.3 versicolor
54	6.2	2.8	4.8	1.8 virginica
55	6.2	3.4	5.4	2.3 virginica
56	6.1	2.9	4.7	1.4 versicolor
57	6.1	2.8	4.0	1.3 versicolor
58	6.1	2.8	4.7	1.2 versicolor
59	6.1	3.0	4.6	1.4 versicolor
60	6.1	3.0	4.9	1.8 virginica
61	6.1	2.6	5.6	1.4 virginica
62	6.0	2.2	4.0	1.0 versicolor
63	6.0	2.9	4.5	1.5 versicolor
64	6.0	2.7	5.1	1.6 versicolor
65	6.0	3.4	4.5	1.6 versicolor
66	6.0	2.2	5.0	1.5 virginica
67	6.0	3.0	4.8	1.8 virginica
68	5.9	3.0	4.2	1.5 versicolor
69	5.9	3.2	4.8	1.8 versicolor
70	5.9	3.0	5.1	1.8 virginica
71	5.8	4.0	1.2	0.2 setosa
72	5.8	2.7	4.1	1.0 versicolor
73	5.8	2.7	3.9	1.2 versicolor
74	5.8	2.6	4.0	1.2 versicolor
75	5.8	2.7	5.1	1.9 virginica
76	5.8	2.8	5.1	2.4 virginica
77	5.8	2.7	5.1	1.9 virginica
78	5.7	4.4	1.5	0.4 setosa
79	5.7	3.8	1.7	0.3 setosa
80	5.7	2.8	4.5	1.3 versicolor
81	5.7	2.6	3.5	1.0 versicolor
82	5.7	3.0	4.2	1.2 versicolor
83	5.7	2.9	4.2	1.3 versicolor
84	5.7	2.8	4.1	1.3 versicolor
85	5.7	2.5	5.0	2.0 virginica

86	5.6	2.9	3.6	1.3 versicolor
87	5.6	3.0	4.5	1.5 versicolor
88	5.6	2.5	3.9	1.1 versicolor
89	5.6	3.0	4.1	1.3 versicolor
90	5.6	2.7	4.2	1.3 versicolor
91	5.6	2.8	4.9	2.0 virginica
92	5.5	4.2	1.4	0.2 setosa
93	5.5	3.5	1.3	0.2 setosa
94	5.5	2.3	4.0	1.3 versicolor
95	5.5	2.4	3.8	1.1 versicolor
96	5.5	2.4	3.7	1.0 versicolor
97	5.5	2.5	4.0	1.3 versicolor
98	5.5	2.6	4.4	1.2 versicolor
99	5.4	3.9	1.7	0.4 setosa
100	5.4	3.7	1.5	0.2 setosa
101	5.4	3.9	1.3	0.4 setosa
102	5.4	3.4	1.7	0.2 setosa
103	5.4	3.4	1.5	0.4 setosa
104	5.4	3.0	4.5	1.5 versicolor
105	5.3	3.7	1.5	0.2 setosa
106	5.2	3.5	1.5	0.2 setosa
107	5.2	3.4	1.4	0.2 setosa
108	5.2	4.1	1.5	0.1 setosa
109	5.2	2.7	3.9	1.4 versicolor
110	5.1	3.5	1.4	0.2 setosa
111	5.1	3.5	1.4	0.3 setosa
112	5.1	3.8	1.5	0.3 setosa
113	5.1	3.7	1.5	0.4 setosa
114	5.1	3.3	1.7	0.5 setosa
115	5.1	3.4	1.5	0.2 setosa
116	5.1	3.8	1.9	0.4 setosa
117	5.1	3.8	1.6	0.2 setosa
118	5.1	2.5	3.0	1.1 versicolor
119	5.0	3.6	1.4	0.2 setosa
120	5.0	3.4	1.5	0.2 setosa
121	5.0	3.0	1.6	0.2 setosa
122	5.0	3.4	1.6	0.4 setosa
123	5.0	3.2	1.2	0.2 setosa
124	5.0	3.5	1.3	0.3 setosa
125	5.0	3.5	1.6	0.6 setosa
126	5.0	3.3	1.4	0.2 setosa
127	5.0	2.0	3.5	1.0 versicolor
128	5.0	2.3	3.3	1.0 versicolor

129	4.9	3.0	1.4	0.2	setosa
130	4.9	3.1	1.5	0.1	setosa
131	4.9	3.1	1.5	0.2	setosa
132	4.9	3.6	1.4	0.1	setosa
133	4.9	2.4	3.3	1.0	versicolor
134	4.9	2.5	4.5	1.7	virginica
135	4.8	3.4	1.6	0.2	setosa
136	4.8	3.0	1.4	0.1	setosa
137	4.8	3.4	1.9	0.2	setosa
138	4.8	3.1	1.6	0.2	setosa
139	4.8	3.0	1.4	0.3	setosa
140	4.7	3.2	1.3	0.2	setosa
141	4.7	3.2	1.6	0.2	setosa
142	4.6	3.1	1.5	0.2	setosa
143	4.6	3.4	1.4	0.3	setosa
144	4.6	3.6	1.0	0.2	setosa
145	4.6	3.2	1.4	0.2	setosa
146	4.5	2.3	1.3	0.3	setosa
147	4.4	2.9	1.4	0.2	setosa
148	4.4	3.0	1.3	0.2	setosa
149	4.4	3.2	1.3	0.2	setosa
150	4.3	3.0	1.1	0.1	setosa

```
iris %>% arrange(desc(Species))
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	6.3	3.3	6.0	2.5	virginica
2	5.8	2.7	5.1	1.9	virginica
3	7.1	3.0	5.9	2.1	virginica
4	6.3	2.9	5.6	1.8	virginica
5	6.5	3.0	5.8	2.2	virginica
6	7.6	3.0	6.6	2.1	virginica
7	4.9	2.5	4.5	1.7	virginica
8	7.3	2.9	6.3	1.8	virginica
9	6.7	2.5	5.8	1.8	virginica
10	7.2	3.6	6.1	2.5	virginica
11	6.5	3.2	5.1	2.0	virginica
12	6.4	2.7	5.3	1.9	virginica
13	6.8	3.0	5.5	2.1	virginica
14	5.7	2.5	5.0	2.0	virginica
15	5.8	2.8	5.1	2.4	virginica

16	6.4	3.2	5.3	2.3	virginica
17	6.5	3.0	5.5	1.8	virginica
18	7.7	3.8	6.7	2.2	virginica
19	7.7	2.6	6.9	2.3	virginica
20	6.0	2.2	5.0	1.5	virginica
21	6.9	3.2	5.7	2.3	virginica
22	5.6	2.8	4.9	2.0	virginica
23	7.7	2.8	6.7	2.0	virginica
24	6.3	2.7	4.9	1.8	virginica
25	6.7	3.3	5.7	2.1	virginica
26	7.2	3.2	6.0	1.8	virginica
27	6.2	2.8	4.8	1.8	virginica
28	6.1	3.0	4.9	1.8	virginica
29	6.4	2.8	5.6	2.1	virginica
30	7.2	3.0	5.8	1.6	virginica
31	7.4	2.8	6.1	1.9	virginica
32	7.9	3.8	6.4	2.0	virginica
33	6.4	2.8	5.6	2.2	virginica
34	6.3	2.8	5.1	1.5	virginica
35	6.1	2.6	5.6	1.4	virginica
36	7.7	3.0	6.1	2.3	virginica
37	6.3	3.4	5.6	2.4	virginica
38	6.4	3.1	5.5	1.8	virginica
39	6.0	3.0	4.8	1.8	virginica
40	6.9	3.1	5.4	2.1	virginica
41	6.7	3.1	5.6	2.4	virginica
42	6.9	3.1	5.1	2.3	virginica
43	5.8	2.7	5.1	1.9	virginica
44	6.8	3.2	5.9	2.3	virginica
45	6.7	3.3	5.7	2.5	virginica
46	6.7	3.0	5.2	2.3	virginica
47	6.3	2.5	5.0	1.9	virginica
48	6.5	3.0	5.2	2.0	virginica
49	6.2	3.4	5.4	2.3	virginica
50	5.9	3.0	5.1	1.8	virginica
51	7.0	3.2	4.7	1.4	versicolor
52	6.4	3.2	4.5	1.5	versicolor
53	6.9	3.1	4.9	1.5	versicolor
54	5.5	2.3	4.0	1.3	versicolor
55	6.5	2.8	4.6	1.5	versicolor
56	5.7	2.8	4.5	1.3	versicolor
57	6.3	3.3	4.7	1.6	versicolor
58	4.9	2.4	3.3	1.0	versicolor

59	6.6	2.9	4.6	1.3 versicolor
60	5.2	2.7	3.9	1.4 versicolor
61	5.0	2.0	3.5	1.0 versicolor
62	5.9	3.0	4.2	1.5 versicolor
63	6.0	2.2	4.0	1.0 versicolor
64	6.1	2.9	4.7	1.4 versicolor
65	5.6	2.9	3.6	1.3 versicolor
66	6.7	3.1	4.4	1.4 versicolor
67	5.6	3.0	4.5	1.5 versicolor
68	5.8	2.7	4.1	1.0 versicolor
69	6.2	2.2	4.5	1.5 versicolor
70	5.6	2.5	3.9	1.1 versicolor
71	5.9	3.2	4.8	1.8 versicolor
72	6.1	2.8	4.0	1.3 versicolor
73	6.3	2.5	4.9	1.5 versicolor
74	6.1	2.8	4.7	1.2 versicolor
75	6.4	2.9	4.3	1.3 versicolor
76	6.6	3.0	4.4	1.4 versicolor
77	6.8	2.8	4.8	1.4 versicolor
78	6.7	3.0	5.0	1.7 versicolor
79	6.0	2.9	4.5	1.5 versicolor
80	5.7	2.6	3.5	1.0 versicolor
81	5.5	2.4	3.8	1.1 versicolor
82	5.5	2.4	3.7	1.0 versicolor
83	5.8	2.7	3.9	1.2 versicolor
84	6.0	2.7	5.1	1.6 versicolor
85	5.4	3.0	4.5	1.5 versicolor
86	6.0	3.4	4.5	1.6 versicolor
87	6.7	3.1	4.7	1.5 versicolor
88	6.3	2.3	4.4	1.3 versicolor
89	5.6	3.0	4.1	1.3 versicolor
90	5.5	2.5	4.0	1.3 versicolor
91	5.5	2.6	4.4	1.2 versicolor
92	6.1	3.0	4.6	1.4 versicolor
93	5.8	2.6	4.0	1.2 versicolor
94	5.0	2.3	3.3	1.0 versicolor
95	5.6	2.7	4.2	1.3 versicolor
96	5.7	3.0	4.2	1.2 versicolor
97	5.7	2.9	4.2	1.3 versicolor
98	6.2	2.9	4.3	1.3 versicolor
99	5.1	2.5	3.0	1.1 versicolor
100	5.7	2.8	4.1	1.3 versicolor
101	5.1	3.5	1.4	0.2 setosa

102	4.9	3.0	1.4	0.2	setosa
103	4.7	3.2	1.3	0.2	setosa
104	4.6	3.1	1.5	0.2	setosa
105	5.0	3.6	1.4	0.2	setosa
106	5.4	3.9	1.7	0.4	setosa
107	4.6	3.4	1.4	0.3	setosa
108	5.0	3.4	1.5	0.2	setosa
109	4.4	2.9	1.4	0.2	setosa
110	4.9	3.1	1.5	0.1	setosa
111	5.4	3.7	1.5	0.2	setosa
112	4.8	3.4	1.6	0.2	setosa
113	4.8	3.0	1.4	0.1	setosa
114	4.3	3.0	1.1	0.1	setosa
115	5.8	4.0	1.2	0.2	setosa
116	5.7	4.4	1.5	0.4	setosa
117	5.4	3.9	1.3	0.4	setosa
118	5.1	3.5	1.4	0.3	setosa
119	5.7	3.8	1.7	0.3	setosa
120	5.1	3.8	1.5	0.3	setosa
121	5.4	3.4	1.7	0.2	setosa
122	5.1	3.7	1.5	0.4	setosa
123	4.6	3.6	1.0	0.2	setosa
124	5.1	3.3	1.7	0.5	setosa
125	4.8	3.4	1.9	0.2	setosa
126	5.0	3.0	1.6	0.2	setosa
127	5.0	3.4	1.6	0.4	setosa
128	5.2	3.5	1.5	0.2	setosa
129	5.2	3.4	1.4	0.2	setosa
130	4.7	3.2	1.6	0.2	setosa
131	4.8	3.1	1.6	0.2	setosa
132	5.4	3.4	1.5	0.4	setosa
133	5.2	4.1	1.5	0.1	setosa
134	5.5	4.2	1.4	0.2	setosa
135	4.9	3.1	1.5	0.2	setosa
136	5.0	3.2	1.2	0.2	setosa
137	5.5	3.5	1.3	0.2	setosa
138	4.9	3.6	1.4	0.1	setosa
139	4.4	3.0	1.3	0.2	setosa
140	5.1	3.4	1.5	0.2	setosa
141	5.0	3.5	1.3	0.3	setosa
142	4.5	2.3	1.3	0.3	setosa
143	4.4	3.2	1.3	0.2	setosa
144	5.0	3.5	1.6	0.6	setosa

145	5.1	3.8	1.9	0.4	setosa
146	4.8	3.0	1.4	0.3	setosa
147	5.1	3.8	1.6	0.2	setosa
148	4.6	3.2	1.4	0.2	setosa
149	5.3	3.7	1.5	0.2	setosa
150	5.0	3.3	1.4	0.2	setosa

```
#Não quer a ordem alfabética
```

```
(iris_fct <- iris %>% mutate(Species = factor(Species,levels = c("versicolor","setosa","vi"))
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3.0	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	4.6	3.1	1.5	0.2	setosa
5	5.0	3.6	1.4	0.2	setosa
6	5.4	3.9	1.7	0.4	setosa
7	4.6	3.4	1.4	0.3	setosa
8	5.0	3.4	1.5	0.2	setosa
9	4.4	2.9	1.4	0.2	setosa
10	4.9	3.1	1.5	0.1	setosa
11	5.4	3.7	1.5	0.2	setosa
12	4.8	3.4	1.6	0.2	setosa
13	4.8	3.0	1.4	0.1	setosa
14	4.3	3.0	1.1	0.1	setosa
15	5.8	4.0	1.2	0.2	setosa
16	5.7	4.4	1.5	0.4	setosa
17	5.4	3.9	1.3	0.4	setosa
18	5.1	3.5	1.4	0.3	setosa
19	5.7	3.8	1.7	0.3	setosa
20	5.1	3.8	1.5	0.3	setosa
21	5.4	3.4	1.7	0.2	setosa
22	5.1	3.7	1.5	0.4	setosa
23	4.6	3.6	1.0	0.2	setosa
24	5.1	3.3	1.7	0.5	setosa
25	4.8	3.4	1.9	0.2	setosa
26	5.0	3.0	1.6	0.2	setosa
27	5.0	3.4	1.6	0.4	setosa
28	5.2	3.5	1.5	0.2	setosa
29	5.2	3.4	1.4	0.2	setosa
30	4.7	3.2	1.6	0.2	setosa

31	4.8	3.1	1.6	0.2	setosa
32	5.4	3.4	1.5	0.4	setosa
33	5.2	4.1	1.5	0.1	setosa
34	5.5	4.2	1.4	0.2	setosa
35	4.9	3.1	1.5	0.2	setosa
36	5.0	3.2	1.2	0.2	setosa
37	5.5	3.5	1.3	0.2	setosa
38	4.9	3.6	1.4	0.1	setosa
39	4.4	3.0	1.3	0.2	setosa
40	5.1	3.4	1.5	0.2	setosa
41	5.0	3.5	1.3	0.3	setosa
42	4.5	2.3	1.3	0.3	setosa
43	4.4	3.2	1.3	0.2	setosa
44	5.0	3.5	1.6	0.6	setosa
45	5.1	3.8	1.9	0.4	setosa
46	4.8	3.0	1.4	0.3	setosa
47	5.1	3.8	1.6	0.2	setosa
48	4.6	3.2	1.4	0.2	setosa
49	5.3	3.7	1.5	0.2	setosa
50	5.0	3.3	1.4	0.2	setosa
51	7.0	3.2	4.7	1.4	versicolor
52	6.4	3.2	4.5	1.5	versicolor
53	6.9	3.1	4.9	1.5	versicolor
54	5.5	2.3	4.0	1.3	versicolor
55	6.5	2.8	4.6	1.5	versicolor
56	5.7	2.8	4.5	1.3	versicolor
57	6.3	3.3	4.7	1.6	versicolor
58	4.9	2.4	3.3	1.0	versicolor
59	6.6	2.9	4.6	1.3	versicolor
60	5.2	2.7	3.9	1.4	versicolor
61	5.0	2.0	3.5	1.0	versicolor
62	5.9	3.0	4.2	1.5	versicolor
63	6.0	2.2	4.0	1.0	versicolor
64	6.1	2.9	4.7	1.4	versicolor
65	5.6	2.9	3.6	1.3	versicolor
66	6.7	3.1	4.4	1.4	versicolor
67	5.6	3.0	4.5	1.5	versicolor
68	5.8	2.7	4.1	1.0	versicolor
69	6.2	2.2	4.5	1.5	versicolor
70	5.6	2.5	3.9	1.1	versicolor
71	5.9	3.2	4.8	1.8	versicolor
72	6.1	2.8	4.0	1.3	versicolor
73	6.3	2.5	4.9	1.5	versicolor

74	6.1	2.8	4.7	1.2 versicolor
75	6.4	2.9	4.3	1.3 versicolor
76	6.6	3.0	4.4	1.4 versicolor
77	6.8	2.8	4.8	1.4 versicolor
78	6.7	3.0	5.0	1.7 versicolor
79	6.0	2.9	4.5	1.5 versicolor
80	5.7	2.6	3.5	1.0 versicolor
81	5.5	2.4	3.8	1.1 versicolor
82	5.5	2.4	3.7	1.0 versicolor
83	5.8	2.7	3.9	1.2 versicolor
84	6.0	2.7	5.1	1.6 versicolor
85	5.4	3.0	4.5	1.5 versicolor
86	6.0	3.4	4.5	1.6 versicolor
87	6.7	3.1	4.7	1.5 versicolor
88	6.3	2.3	4.4	1.3 versicolor
89	5.6	3.0	4.1	1.3 versicolor
90	5.5	2.5	4.0	1.3 versicolor
91	5.5	2.6	4.4	1.2 versicolor
92	6.1	3.0	4.6	1.4 versicolor
93	5.8	2.6	4.0	1.2 versicolor
94	5.0	2.3	3.3	1.0 versicolor
95	5.6	2.7	4.2	1.3 versicolor
96	5.7	3.0	4.2	1.2 versicolor
97	5.7	2.9	4.2	1.3 versicolor
98	6.2	2.9	4.3	1.3 versicolor
99	5.1	2.5	3.0	1.1 versicolor
100	5.7	2.8	4.1	1.3 versicolor
101	6.3	3.3	6.0	2.5 virginica
102	5.8	2.7	5.1	1.9 virginica
103	7.1	3.0	5.9	2.1 virginica
104	6.3	2.9	5.6	1.8 virginica
105	6.5	3.0	5.8	2.2 virginica
106	7.6	3.0	6.6	2.1 virginica
107	4.9	2.5	4.5	1.7 virginica
108	7.3	2.9	6.3	1.8 virginica
109	6.7	2.5	5.8	1.8 virginica
110	7.2	3.6	6.1	2.5 virginica
111	6.5	3.2	5.1	2.0 virginica
112	6.4	2.7	5.3	1.9 virginica
113	6.8	3.0	5.5	2.1 virginica
114	5.7	2.5	5.0	2.0 virginica
115	5.8	2.8	5.1	2.4 virginica
116	6.4	3.2	5.3	2.3 virginica

117	6.5	3.0	5.5	1.8	virginica
118	7.7	3.8	6.7	2.2	virginica
119	7.7	2.6	6.9	2.3	virginica
120	6.0	2.2	5.0	1.5	virginica
121	6.9	3.2	5.7	2.3	virginica
122	5.6	2.8	4.9	2.0	virginica
123	7.7	2.8	6.7	2.0	virginica
124	6.3	2.7	4.9	1.8	virginica
125	6.7	3.3	5.7	2.1	virginica
126	7.2	3.2	6.0	1.8	virginica
127	6.2	2.8	4.8	1.8	virginica
128	6.1	3.0	4.9	1.8	virginica
129	6.4	2.8	5.6	2.1	virginica
130	7.2	3.0	5.8	1.6	virginica
131	7.4	2.8	6.1	1.9	virginica
132	7.9	3.8	6.4	2.0	virginica
133	6.4	2.8	5.6	2.2	virginica
134	6.3	2.8	5.1	1.5	virginica
135	6.1	2.6	5.6	1.4	virginica
136	7.7	3.0	6.1	2.3	virginica
137	6.3	3.4	5.6	2.4	virginica
138	6.4	3.1	5.5	1.8	virginica
139	6.0	3.0	4.8	1.8	virginica
140	6.9	3.1	5.4	2.1	virginica
141	6.7	3.1	5.6	2.4	virginica
142	6.9	3.1	5.1	2.3	virginica
143	5.8	2.7	5.1	1.9	virginica
144	6.8	3.2	5.9	2.3	virginica
145	6.7	3.3	5.7	2.5	virginica
146	6.7	3.0	5.2	2.3	virginica
147	6.3	2.5	5.0	1.9	virginica
148	6.5	3.0	5.2	2.0	virginica
149	6.2	3.4	5.4	2.3	virginica
150	5.9	3.0	5.1	1.8	virginica

`iris$Species`

[1]	setosa	setosa	setosa	setosa	setosa	setosa
[7]	setosa	setosa	setosa	setosa	setosa	setosa
[13]	setosa	setosa	setosa	setosa	setosa	setosa
[19]	setosa	setosa	setosa	setosa	setosa	setosa


```

[97] versicolor versicolor versicolor versicolor virginica virginica
[103] virginica virginica virginica virginica virginica virginica
[109] virginica virginica virginica virginica virginica virginica
[115] virginica virginica virginica virginica virginica virginica
[121] virginica virginica virginica virginica virginica virginica
[127] virginica virginica virginica virginica virginica virginica
[133] virginica virginica virginica virginica virginica virginica
[139] virginica virginica virginica virginica virginica virginica
[145] virginica virginica virginica virginica virginica virginica
Levels: versicolor setosa virginica

```

```

iris_fct %>%
  arrange(Species)

```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	7.0	3.2	4.7	1.4	versicolor
2	6.4	3.2	4.5	1.5	versicolor
3	6.9	3.1	4.9	1.5	versicolor
4	5.5	2.3	4.0	1.3	versicolor
5	6.5	2.8	4.6	1.5	versicolor
6	5.7	2.8	4.5	1.3	versicolor
7	6.3	3.3	4.7	1.6	versicolor
8	4.9	2.4	3.3	1.0	versicolor
9	6.6	2.9	4.6	1.3	versicolor
10	5.2	2.7	3.9	1.4	versicolor
11	5.0	2.0	3.5	1.0	versicolor
12	5.9	3.0	4.2	1.5	versicolor
13	6.0	2.2	4.0	1.0	versicolor
14	6.1	2.9	4.7	1.4	versicolor
15	5.6	2.9	3.6	1.3	versicolor
16	6.7	3.1	4.4	1.4	versicolor
17	5.6	3.0	4.5	1.5	versicolor
18	5.8	2.7	4.1	1.0	versicolor
19	6.2	2.2	4.5	1.5	versicolor
20	5.6	2.5	3.9	1.1	versicolor
21	5.9	3.2	4.8	1.8	versicolor
22	6.1	2.8	4.0	1.3	versicolor
23	6.3	2.5	4.9	1.5	versicolor
24	6.1	2.8	4.7	1.2	versicolor
25	6.4	2.9	4.3	1.3	versicolor
26	6.6	3.0	4.4	1.4	versicolor

27	6.8	2.8	4.8	1.4 versicolor
28	6.7	3.0	5.0	1.7 versicolor
29	6.0	2.9	4.5	1.5 versicolor
30	5.7	2.6	3.5	1.0 versicolor
31	5.5	2.4	3.8	1.1 versicolor
32	5.5	2.4	3.7	1.0 versicolor
33	5.8	2.7	3.9	1.2 versicolor
34	6.0	2.7	5.1	1.6 versicolor
35	5.4	3.0	4.5	1.5 versicolor
36	6.0	3.4	4.5	1.6 versicolor
37	6.7	3.1	4.7	1.5 versicolor
38	6.3	2.3	4.4	1.3 versicolor
39	5.6	3.0	4.1	1.3 versicolor
40	5.5	2.5	4.0	1.3 versicolor
41	5.5	2.6	4.4	1.2 versicolor
42	6.1	3.0	4.6	1.4 versicolor
43	5.8	2.6	4.0	1.2 versicolor
44	5.0	2.3	3.3	1.0 versicolor
45	5.6	2.7	4.2	1.3 versicolor
46	5.7	3.0	4.2	1.2 versicolor
47	5.7	2.9	4.2	1.3 versicolor
48	6.2	2.9	4.3	1.3 versicolor
49	5.1	2.5	3.0	1.1 versicolor
50	5.7	2.8	4.1	1.3 versicolor
51	5.1	3.5	1.4	0.2 setosa
52	4.9	3.0	1.4	0.2 setosa
53	4.7	3.2	1.3	0.2 setosa
54	4.6	3.1	1.5	0.2 setosa
55	5.0	3.6	1.4	0.2 setosa
56	5.4	3.9	1.7	0.4 setosa
57	4.6	3.4	1.4	0.3 setosa
58	5.0	3.4	1.5	0.2 setosa
59	4.4	2.9	1.4	0.2 setosa
60	4.9	3.1	1.5	0.1 setosa
61	5.4	3.7	1.5	0.2 setosa
62	4.8	3.4	1.6	0.2 setosa
63	4.8	3.0	1.4	0.1 setosa
64	4.3	3.0	1.1	0.1 setosa
65	5.8	4.0	1.2	0.2 setosa
66	5.7	4.4	1.5	0.4 setosa
67	5.4	3.9	1.3	0.4 setosa
68	5.1	3.5	1.4	0.3 setosa
69	5.7	3.8	1.7	0.3 setosa

70	5.1	3.8	1.5	0.3	setosa
71	5.4	3.4	1.7	0.2	setosa
72	5.1	3.7	1.5	0.4	setosa
73	4.6	3.6	1.0	0.2	setosa
74	5.1	3.3	1.7	0.5	setosa
75	4.8	3.4	1.9	0.2	setosa
76	5.0	3.0	1.6	0.2	setosa
77	5.0	3.4	1.6	0.4	setosa
78	5.2	3.5	1.5	0.2	setosa
79	5.2	3.4	1.4	0.2	setosa
80	4.7	3.2	1.6	0.2	setosa
81	4.8	3.1	1.6	0.2	setosa
82	5.4	3.4	1.5	0.4	setosa
83	5.2	4.1	1.5	0.1	setosa
84	5.5	4.2	1.4	0.2	setosa
85	4.9	3.1	1.5	0.2	setosa
86	5.0	3.2	1.2	0.2	setosa
87	5.5	3.5	1.3	0.2	setosa
88	4.9	3.6	1.4	0.1	setosa
89	4.4	3.0	1.3	0.2	setosa
90	5.1	3.4	1.5	0.2	setosa
91	5.0	3.5	1.3	0.3	setosa
92	4.5	2.3	1.3	0.3	setosa
93	4.4	3.2	1.3	0.2	setosa
94	5.0	3.5	1.6	0.6	setosa
95	5.1	3.8	1.9	0.4	setosa
96	4.8	3.0	1.4	0.3	setosa
97	5.1	3.8	1.6	0.2	setosa
98	4.6	3.2	1.4	0.2	setosa
99	5.3	3.7	1.5	0.2	setosa
100	5.0	3.3	1.4	0.2	setosa
101	6.3	3.3	6.0	2.5	virginica
102	5.8	2.7	5.1	1.9	virginica
103	7.1	3.0	5.9	2.1	virginica
104	6.3	2.9	5.6	1.8	virginica
105	6.5	3.0	5.8	2.2	virginica
106	7.6	3.0	6.6	2.1	virginica
107	4.9	2.5	4.5	1.7	virginica
108	7.3	2.9	6.3	1.8	virginica
109	6.7	2.5	5.8	1.8	virginica
110	7.2	3.6	6.1	2.5	virginica
111	6.5	3.2	5.1	2.0	virginica
112	6.4	2.7	5.3	1.9	virginica

113	6.8	3.0	5.5	2.1	virginica
114	5.7	2.5	5.0	2.0	virginica
115	5.8	2.8	5.1	2.4	virginica
116	6.4	3.2	5.3	2.3	virginica
117	6.5	3.0	5.5	1.8	virginica
118	7.7	3.8	6.7	2.2	virginica
119	7.7	2.6	6.9	2.3	virginica
120	6.0	2.2	5.0	1.5	virginica
121	6.9	3.2	5.7	2.3	virginica
122	5.6	2.8	4.9	2.0	virginica
123	7.7	2.8	6.7	2.0	virginica
124	6.3	2.7	4.9	1.8	virginica
125	6.7	3.3	5.7	2.1	virginica
126	7.2	3.2	6.0	1.8	virginica
127	6.2	2.8	4.8	1.8	virginica
128	6.1	3.0	4.9	1.8	virginica
129	6.4	2.8	5.6	2.1	virginica
130	7.2	3.0	5.8	1.6	virginica
131	7.4	2.8	6.1	1.9	virginica
132	7.9	3.8	6.4	2.0	virginica
133	6.4	2.8	5.6	2.2	virginica
134	6.3	2.8	5.1	1.5	virginica
135	6.1	2.6	5.6	1.4	virginica
136	7.7	3.0	6.1	2.3	virginica
137	6.3	3.4	5.6	2.4	virginica
138	6.4	3.1	5.5	1.8	virginica
139	6.0	3.0	4.8	1.8	virginica
140	6.9	3.1	5.4	2.1	virginica
141	6.7	3.1	5.6	2.4	virginica
142	6.9	3.1	5.1	2.3	virginica
143	5.8	2.7	5.1	1.9	virginica
144	6.8	3.2	5.9	2.3	virginica
145	6.7	3.3	5.7	2.5	virginica
146	6.7	3.0	5.2	2.3	virginica
147	6.3	2.5	5.0	1.9	virginica
148	6.5	3.0	5.2	2.0	virginica
149	6.2	3.4	5.4	2.3	virginica
150	5.9	3.0	5.1	1.8	virginica

```
iris %>%
  mutate(Species = factor(Species, levels = c("versicolor", "setosa", "virginica"))) %>%
```

```
arrange(Species)
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	7.0	3.2	4.7	1.4	versicolor
2	6.4	3.2	4.5	1.5	versicolor
3	6.9	3.1	4.9	1.5	versicolor
4	5.5	2.3	4.0	1.3	versicolor
5	6.5	2.8	4.6	1.5	versicolor
6	5.7	2.8	4.5	1.3	versicolor
7	6.3	3.3	4.7	1.6	versicolor
8	4.9	2.4	3.3	1.0	versicolor
9	6.6	2.9	4.6	1.3	versicolor
10	5.2	2.7	3.9	1.4	versicolor
11	5.0	2.0	3.5	1.0	versicolor
12	5.9	3.0	4.2	1.5	versicolor
13	6.0	2.2	4.0	1.0	versicolor
14	6.1	2.9	4.7	1.4	versicolor
15	5.6	2.9	3.6	1.3	versicolor
16	6.7	3.1	4.4	1.4	versicolor
17	5.6	3.0	4.5	1.5	versicolor
18	5.8	2.7	4.1	1.0	versicolor
19	6.2	2.2	4.5	1.5	versicolor
20	5.6	2.5	3.9	1.1	versicolor
21	5.9	3.2	4.8	1.8	versicolor
22	6.1	2.8	4.0	1.3	versicolor
23	6.3	2.5	4.9	1.5	versicolor
24	6.1	2.8	4.7	1.2	versicolor
25	6.4	2.9	4.3	1.3	versicolor
26	6.6	3.0	4.4	1.4	versicolor
27	6.8	2.8	4.8	1.4	versicolor
28	6.7	3.0	5.0	1.7	versicolor
29	6.0	2.9	4.5	1.5	versicolor
30	5.7	2.6	3.5	1.0	versicolor
31	5.5	2.4	3.8	1.1	versicolor
32	5.5	2.4	3.7	1.0	versicolor
33	5.8	2.7	3.9	1.2	versicolor
34	6.0	2.7	5.1	1.6	versicolor
35	5.4	3.0	4.5	1.5	versicolor
36	6.0	3.4	4.5	1.6	versicolor
37	6.7	3.1	4.7	1.5	versicolor
38	6.3	2.3	4.4	1.3	versicolor
39	5.6	3.0	4.1	1.3	versicolor

40	5.5	2.5	4.0	1.3	versicolor
41	5.5	2.6	4.4	1.2	versicolor
42	6.1	3.0	4.6	1.4	versicolor
43	5.8	2.6	4.0	1.2	versicolor
44	5.0	2.3	3.3	1.0	versicolor
45	5.6	2.7	4.2	1.3	versicolor
46	5.7	3.0	4.2	1.2	versicolor
47	5.7	2.9	4.2	1.3	versicolor
48	6.2	2.9	4.3	1.3	versicolor
49	5.1	2.5	3.0	1.1	versicolor
50	5.7	2.8	4.1	1.3	versicolor
51	5.1	3.5	1.4	0.2	setosa
52	4.9	3.0	1.4	0.2	setosa
53	4.7	3.2	1.3	0.2	setosa
54	4.6	3.1	1.5	0.2	setosa
55	5.0	3.6	1.4	0.2	setosa
56	5.4	3.9	1.7	0.4	setosa
57	4.6	3.4	1.4	0.3	setosa
58	5.0	3.4	1.5	0.2	setosa
59	4.4	2.9	1.4	0.2	setosa
60	4.9	3.1	1.5	0.1	setosa
61	5.4	3.7	1.5	0.2	setosa
62	4.8	3.4	1.6	0.2	setosa
63	4.8	3.0	1.4	0.1	setosa
64	4.3	3.0	1.1	0.1	setosa
65	5.8	4.0	1.2	0.2	setosa
66	5.7	4.4	1.5	0.4	setosa
67	5.4	3.9	1.3	0.4	setosa
68	5.1	3.5	1.4	0.3	setosa
69	5.7	3.8	1.7	0.3	setosa
70	5.1	3.8	1.5	0.3	setosa
71	5.4	3.4	1.7	0.2	setosa
72	5.1	3.7	1.5	0.4	setosa
73	4.6	3.6	1.0	0.2	setosa
74	5.1	3.3	1.7	0.5	setosa
75	4.8	3.4	1.9	0.2	setosa
76	5.0	3.0	1.6	0.2	setosa
77	5.0	3.4	1.6	0.4	setosa
78	5.2	3.5	1.5	0.2	setosa
79	5.2	3.4	1.4	0.2	setosa
80	4.7	3.2	1.6	0.2	setosa
81	4.8	3.1	1.6	0.2	setosa
82	5.4	3.4	1.5	0.4	setosa

83	5.2	4.1	1.5	0.1	setosa
84	5.5	4.2	1.4	0.2	setosa
85	4.9	3.1	1.5	0.2	setosa
86	5.0	3.2	1.2	0.2	setosa
87	5.5	3.5	1.3	0.2	setosa
88	4.9	3.6	1.4	0.1	setosa
89	4.4	3.0	1.3	0.2	setosa
90	5.1	3.4	1.5	0.2	setosa
91	5.0	3.5	1.3	0.3	setosa
92	4.5	2.3	1.3	0.3	setosa
93	4.4	3.2	1.3	0.2	setosa
94	5.0	3.5	1.6	0.6	setosa
95	5.1	3.8	1.9	0.4	setosa
96	4.8	3.0	1.4	0.3	setosa
97	5.1	3.8	1.6	0.2	setosa
98	4.6	3.2	1.4	0.2	setosa
99	5.3	3.7	1.5	0.2	setosa
100	5.0	3.3	1.4	0.2	setosa
101	6.3	3.3	6.0	2.5	virginica
102	5.8	2.7	5.1	1.9	virginica
103	7.1	3.0	5.9	2.1	virginica
104	6.3	2.9	5.6	1.8	virginica
105	6.5	3.0	5.8	2.2	virginica
106	7.6	3.0	6.6	2.1	virginica
107	4.9	2.5	4.5	1.7	virginica
108	7.3	2.9	6.3	1.8	virginica
109	6.7	2.5	5.8	1.8	virginica
110	7.2	3.6	6.1	2.5	virginica
111	6.5	3.2	5.1	2.0	virginica
112	6.4	2.7	5.3	1.9	virginica
113	6.8	3.0	5.5	2.1	virginica
114	5.7	2.5	5.0	2.0	virginica
115	5.8	2.8	5.1	2.4	virginica
116	6.4	3.2	5.3	2.3	virginica
117	6.5	3.0	5.5	1.8	virginica
118	7.7	3.8	6.7	2.2	virginica
119	7.7	2.6	6.9	2.3	virginica
120	6.0	2.2	5.0	1.5	virginica
121	6.9	3.2	5.7	2.3	virginica
122	5.6	2.8	4.9	2.0	virginica
123	7.7	2.8	6.7	2.0	virginica
124	6.3	2.7	4.9	1.8	virginica
125	6.7	3.3	5.7	2.1	virginica

126	7.2	3.2	6.0	1.8	virginica
127	6.2	2.8	4.8	1.8	virginica
128	6.1	3.0	4.9	1.8	virginica
129	6.4	2.8	5.6	2.1	virginica
130	7.2	3.0	5.8	1.6	virginica
131	7.4	2.8	6.1	1.9	virginica
132	7.9	3.8	6.4	2.0	virginica
133	6.4	2.8	5.6	2.2	virginica
134	6.3	2.8	5.1	1.5	virginica
135	6.1	2.6	5.6	1.4	virginica
136	7.7	3.0	6.1	2.3	virginica
137	6.3	3.4	5.6	2.4	virginica
138	6.4	3.1	5.5	1.8	virginica
139	6.0	3.0	4.8	1.8	virginica
140	6.9	3.1	5.4	2.1	virginica
141	6.7	3.1	5.6	2.4	virginica
142	6.9	3.1	5.1	2.3	virginica
143	5.8	2.7	5.1	1.9	virginica
144	6.8	3.2	5.9	2.3	virginica
145	6.7	3.3	5.7	2.5	virginica
146	6.7	3.0	5.2	2.3	virginica
147	6.3	2.5	5.0	1.9	virginica
148	6.5	3.0	5.2	2.0	virginica
149	6.2	3.4	5.4	2.3	virginica
150	5.9	3.0	5.1	1.8	virginica

```
iris %>% arrange(Sepal.Length,desc(Sepal.Width))
```

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	4.3	3.0	1.1	0.1	setosa
2	4.4	3.2	1.3	0.2	setosa
3	4.4	3.0	1.3	0.2	setosa
4	4.4	2.9	1.4	0.2	setosa
5	4.5	2.3	1.3	0.3	setosa
6	4.6	3.6	1.0	0.2	setosa
7	4.6	3.4	1.4	0.3	setosa
8	4.6	3.2	1.4	0.2	setosa
9	4.6	3.1	1.5	0.2	setosa
10	4.7	3.2	1.3	0.2	setosa
11	4.7	3.2	1.6	0.2	setosa
12	4.8	3.4	1.6	0.2	setosa

13	4.8	3.4	1.9	0.2	setosa
14	4.8	3.1	1.6	0.2	setosa
15	4.8	3.0	1.4	0.1	setosa
16	4.8	3.0	1.4	0.3	setosa
17	4.9	3.6	1.4	0.1	setosa
18	4.9	3.1	1.5	0.1	setosa
19	4.9	3.1	1.5	0.2	setosa
20	4.9	3.0	1.4	0.2	setosa
21	4.9	2.5	4.5	1.7	virginica
22	4.9	2.4	3.3	1.0	versicolor
23	5.0	3.6	1.4	0.2	setosa
24	5.0	3.5	1.3	0.3	setosa
25	5.0	3.5	1.6	0.6	setosa
26	5.0	3.4	1.5	0.2	setosa
27	5.0	3.4	1.6	0.4	setosa
28	5.0	3.3	1.4	0.2	setosa
29	5.0	3.2	1.2	0.2	setosa
30	5.0	3.0	1.6	0.2	setosa
31	5.0	2.3	3.3	1.0	versicolor
32	5.0	2.0	3.5	1.0	versicolor
33	5.1	3.8	1.5	0.3	setosa
34	5.1	3.8	1.9	0.4	setosa
35	5.1	3.8	1.6	0.2	setosa
36	5.1	3.7	1.5	0.4	setosa
37	5.1	3.5	1.4	0.2	setosa
38	5.1	3.5	1.4	0.3	setosa
39	5.1	3.4	1.5	0.2	setosa
40	5.1	3.3	1.7	0.5	setosa
41	5.1	2.5	3.0	1.1	versicolor
42	5.2	4.1	1.5	0.1	setosa
43	5.2	3.5	1.5	0.2	setosa
44	5.2	3.4	1.4	0.2	setosa
45	5.2	2.7	3.9	1.4	versicolor
46	5.3	3.7	1.5	0.2	setosa
47	5.4	3.9	1.7	0.4	setosa
48	5.4	3.9	1.3	0.4	setosa
49	5.4	3.7	1.5	0.2	setosa
50	5.4	3.4	1.7	0.2	setosa
51	5.4	3.4	1.5	0.4	setosa
52	5.4	3.0	4.5	1.5	versicolor
53	5.5	4.2	1.4	0.2	setosa
54	5.5	3.5	1.3	0.2	setosa
55	5.5	2.6	4.4	1.2	versicolor

56	5.5	2.5	4.0	1.3 versicolor
57	5.5	2.4	3.8	1.1 versicolor
58	5.5	2.4	3.7	1.0 versicolor
59	5.5	2.3	4.0	1.3 versicolor
60	5.6	3.0	4.5	1.5 versicolor
61	5.6	3.0	4.1	1.3 versicolor
62	5.6	2.9	3.6	1.3 versicolor
63	5.6	2.8	4.9	2.0 virginica
64	5.6	2.7	4.2	1.3 versicolor
65	5.6	2.5	3.9	1.1 versicolor
66	5.7	4.4	1.5	0.4 setosa
67	5.7	3.8	1.7	0.3 setosa
68	5.7	3.0	4.2	1.2 versicolor
69	5.7	2.9	4.2	1.3 versicolor
70	5.7	2.8	4.5	1.3 versicolor
71	5.7	2.8	4.1	1.3 versicolor
72	5.7	2.6	3.5	1.0 versicolor
73	5.7	2.5	5.0	2.0 virginica
74	5.8	4.0	1.2	0.2 setosa
75	5.8	2.8	5.1	2.4 virginica
76	5.8	2.7	4.1	1.0 versicolor
77	5.8	2.7	3.9	1.2 versicolor
78	5.8	2.7	5.1	1.9 virginica
79	5.8	2.7	5.1	1.9 virginica
80	5.8	2.6	4.0	1.2 versicolor
81	5.9	3.2	4.8	1.8 versicolor
82	5.9	3.0	4.2	1.5 versicolor
83	5.9	3.0	5.1	1.8 virginica
84	6.0	3.4	4.5	1.6 versicolor
85	6.0	3.0	4.8	1.8 virginica
86	6.0	2.9	4.5	1.5 versicolor
87	6.0	2.7	5.1	1.6 versicolor
88	6.0	2.2	4.0	1.0 versicolor
89	6.0	2.2	5.0	1.5 virginica
90	6.1	3.0	4.6	1.4 versicolor
91	6.1	3.0	4.9	1.8 virginica
92	6.1	2.9	4.7	1.4 versicolor
93	6.1	2.8	4.0	1.3 versicolor
94	6.1	2.8	4.7	1.2 versicolor
95	6.1	2.6	5.6	1.4 virginica
96	6.2	3.4	5.4	2.3 virginica
97	6.2	2.9	4.3	1.3 versicolor
98	6.2	2.8	4.8	1.8 virginica

99	6.2	2.2	4.5	1.5 versicolor
100	6.3	3.4	5.6	2.4 virginica
101	6.3	3.3	4.7	1.6 versicolor
102	6.3	3.3	6.0	2.5 virginica
103	6.3	2.9	5.6	1.8 virginica
104	6.3	2.8	5.1	1.5 virginica
105	6.3	2.7	4.9	1.8 virginica
106	6.3	2.5	4.9	1.5 versicolor
107	6.3	2.5	5.0	1.9 virginica
108	6.3	2.3	4.4	1.3 versicolor
109	6.4	3.2	4.5	1.5 versicolor
110	6.4	3.2	5.3	2.3 virginica
111	6.4	3.1	5.5	1.8 virginica
112	6.4	2.9	4.3	1.3 versicolor
113	6.4	2.8	5.6	2.1 virginica
114	6.4	2.8	5.6	2.2 virginica
115	6.4	2.7	5.3	1.9 virginica
116	6.5	3.2	5.1	2.0 virginica
117	6.5	3.0	5.8	2.2 virginica
118	6.5	3.0	5.5	1.8 virginica
119	6.5	3.0	5.2	2.0 virginica
120	6.5	2.8	4.6	1.5 versicolor
121	6.6	3.0	4.4	1.4 versicolor
122	6.6	2.9	4.6	1.3 versicolor
123	6.7	3.3	5.7	2.1 virginica
124	6.7	3.3	5.7	2.5 virginica
125	6.7	3.1	4.4	1.4 versicolor
126	6.7	3.1	4.7	1.5 versicolor
127	6.7	3.1	5.6	2.4 virginica
128	6.7	3.0	5.0	1.7 versicolor
129	6.7	3.0	5.2	2.3 virginica
130	6.7	2.5	5.8	1.8 virginica
131	6.8	3.2	5.9	2.3 virginica
132	6.8	3.0	5.5	2.1 virginica
133	6.8	2.8	4.8	1.4 versicolor
134	6.9	3.2	5.7	2.3 virginica
135	6.9	3.1	4.9	1.5 versicolor
136	6.9	3.1	5.4	2.1 virginica
137	6.9	3.1	5.1	2.3 virginica
138	7.0	3.2	4.7	1.4 versicolor
139	7.1	3.0	5.9	2.1 virginica
140	7.2	3.6	6.1	2.5 virginica
141	7.2	3.2	6.0	1.8 virginica

142	7.2	3.0	5.8	1.6	virginica
143	7.3	2.9	6.3	1.8	virginica
144	7.4	2.8	6.1	1.9	virginica
145	7.6	3.0	6.6	2.1	virginica
146	7.7	3.8	6.7	2.2	virginica
147	7.7	3.0	6.1	2.3	virginica
148	7.7	2.8	6.7	2.0	virginica
149	7.7	2.6	6.9	2.3	virginica
150	7.9	3.8	6.4	2.0	virginica

2.1.6 summarise

Cria um resumo estatístico

```
summarise(iris,
  media_sepal_length = mean(Sepal.Length),
  sd_sepal_length = sd(Sepal.Length))
```

	media_sepal_length	sd_sepal_length
1	5.843333	0.8280661

```
summary(iris)
```

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width
Min. :4.300	Min. :2.000	Min. :1.000	Min. :0.100
1st Qu.:5.100	1st Qu.:2.800	1st Qu.:1.600	1st Qu.:0.300
Median :5.800	Median :3.000	Median :4.350	Median :1.300
Mean :5.843	Mean :3.057	Mean :3.758	Mean :1.199
3rd Qu.:6.400	3rd Qu.:3.300	3rd Qu.:5.100	3rd Qu.:1.800
Max. :7.900	Max. :4.400	Max. :6.900	Max. :2.500

Species

setosa	:50
versicolor	:50
virginica	:50

```
iris %>%
  count(Species)
```

```

  Species  n
1   setosa 50
2 versicolor 50
3  virginica 50
```

```
iris %>%
  group_by(Species) %>%
  summarise(media_sepal_length = mean(Sepal.Length),
            sd_sepal_length = sd(Sepal.Length))
```

```
# A tibble: 3 x 3
  Species    media_sepal_length sd_sepal_length
  <fct>          <dbl>          <dbl>
1 setosa          5.01          0.352
2 versicolor      5.94          0.516
3 virginica       6.59          0.636
```

```
#ungroup
```

```
iris %>%
  group_by(Species) %>%
  ungroup()
```

```
# A tibble: 150 x 5
  Sepal.Length Sepal.Width Petal.Length Petal.Width Species
      <dbl>      <dbl>      <dbl>      <dbl>    <fct>
1         5.1         3.5         1.4         0.2 setosa
2         4.9         3         1.4         0.2 setosa
3         4.7         3.2         1.3         0.2 setosa
4         4.6         3.1         1.5         0.2 setosa
5          5          3.6         1.4         0.2 setosa
6         5.4         3.9         1.7         0.4 setosa
7         4.6         3.4         1.4         0.3 setosa
8          5          3.4         1.5         0.2 setosa
9         4.4         2.9         1.4         0.2 setosa
```

```

10          4.9          3.1          1.5          0.1 setosa
# i 140 more rows

```

```

#across - mutate & summarise

```

```

#?across()

```

```

q1 <- function(x) {
  quantile(x, .25)
}

```

```

q3 <- function(x) {
  quantile(x, .75)
}

```

```

IQR <- function(x) {

  q3(x) - q1(x)
}

```

```

#Todas as colunas numericas

```

```

iris %>%
  summarise(across(.cols = where(is.numeric),
    .fns = list(media = mean,
                 mediana = median,
                 maximo = max,
                 minimo = min,
                 desvpad = sd,
                 Q1 = q1,
                 Q3 = q3,
                 IQR = IQR),
    .names = "{.fn}_{.col}"))

```

```

media_Sepal.Length mediana_Sepal.Length maximo_Sepal.Length
1          5.843333          5.8          7.9
minimo_Sepal.Length desvpad_Sepal.Length Q1_Sepal.Length Q3_Sepal.Length
1          4.3          0.8280661          5.1          6.4
IQR_Sepal.Length media_Sepal.Width mediana_Sepal.Width maximo_Sepal.Width
1          1.3          3.057333          3          4.4
minimo_Sepal.Width desvpad_Sepal.Width Q1_Sepal.Width Q3_Sepal.Width
1          2          0.4358663          2.8          3.3

```

```

IQR_Sepal.Width media_Petal.Length mediana_Petal.Length maximo_Petal.Length
1          0.5          3.758          4.35          6.9
minimo_Petal.Length desvpad_Petal.Length Q1_Petal.Length Q3_Petal.Length
1          1          1.765298          1.6          5.1
IQR_Petal.Length media_Petal.Width mediana_Petal.Width maximo_Petal.Width
1          3.5          1.199333          1.3          2.5
minimo_Petal.Width desvpad_Petal.Width Q1_Petal.Width Q3_Petal.Width
1          0.1          0.7622377          0.3          1.8
IQR_Petal.Width
1          1.5

```

```

iris_stats <- iris %>%
  group_by(Species) %>%
  summarise(across(.cols = where(is.numeric),
                    .fns = list(media = mean,
                                mediana = median,
                                maximo = max,
                                minimo = min,
                                desvpad = sd,
                                Q1 = q1,
                                Q3 = q3,
                                IQR = IQR),
                    .names = "{.fn}_{.col}"))

```

2.2 {tidyr}

```
iris_stats
```

```

# A tibble: 3 x 33
  Species      media_Sepal.Length mediana_Sepal.Length maximo_Sepal.Length
  <fct>          <dbl>          <dbl>          <dbl>
1 setosa          5.01            5            5.8
2 versicolor      5.94            5.9            7
3 virginica       6.59            6.5           7.9
# i 29 more variables: minimo_Sepal.Length <dbl>, desvpad_Sepal.Length <dbl>,
#   Q1_Sepal.Length <dbl>, Q3_Sepal.Length <dbl>, IQR_Sepal.Length <dbl>,
#   media_Sepal.Width <dbl>, mediana_Sepal.Width <dbl>,
#   maximo_Sepal.Width <dbl>, minimo_Sepal.Width <dbl>,
#   desvpad_Sepal.Width <dbl>, Q1_Sepal.Width <dbl>, Q3_Sepal.Width <dbl>,

```

```
# IQR_Sepal.Width <dbl>, media_Petal.Length <dbl>,
# mediana_Petal.Length <dbl>, maximo_Petal.Length <dbl>, ...
```

Longos x amplo (long x wide)

Longo: mais linhas que colunas

Amplo: mais colunas que linhas

2.2.1 Pivots

```
library(tidyr)
(iris_stats_long <- iris_stats %>%
  pivot_longer(cols = -Species,
               names_to = "Colunas",
               values_to = "Linhas"))
```

```
# A tibble: 96 x 3
  Species Colunas      Linhas
  <fct>   <chr>      <dbl>
1 setosa media_Sepal.Length  5.01
2 setosa mediana_Sepal.Length  5
3 setosa maximo_Sepal.Length  5.8
4 setosa minimo_Sepal.Length  4.3
5 setosa desvpad_Sepal.Length 0.352
6 setosa Q1_Sepal.Length     4.8
7 setosa Q3_Sepal.Length     5.2
8 setosa IQR_Sepal.Length    0.400
9 setosa media_Sepal.Width   3.43
10 setosa mediana_Sepal.Width 3.4
# i 86 more rows
```

2.2.2 Separate

```
(iris_stats_long <- iris_stats_long %>%
  separate(col = Colunas,
           into = c("Stat", "Var"),
           sep = "_") %>%
  separate(col = Var,
           into = c("Org", "Metrica"),
```



```

    sep = "\\\\.") # palavras reservadas
)

```

```

# A tibble: 96 x 5
  Species Stat   Org   Metrica Linhas
  <fct>   <chr>   <chr> <chr>   <dbl>
1 setosa  media   Sepal Length  5.01
2 setosa  mediana Sepal Length   5
3 setosa  maximo  Sepal Length  5.8
4 setosa  minimo  Sepal Length  4.3
5 setosa  desvpad Sepal Length  0.352
6 setosa  Q1      Sepal Length  4.8
7 setosa  Q3      Sepal Length  5.2
8 setosa  IQR     Sepal Length  0.400
9 setosa  media   Sepal Width   3.43
10 setosa mediana Sepal Width   3.4
# i 86 more rows

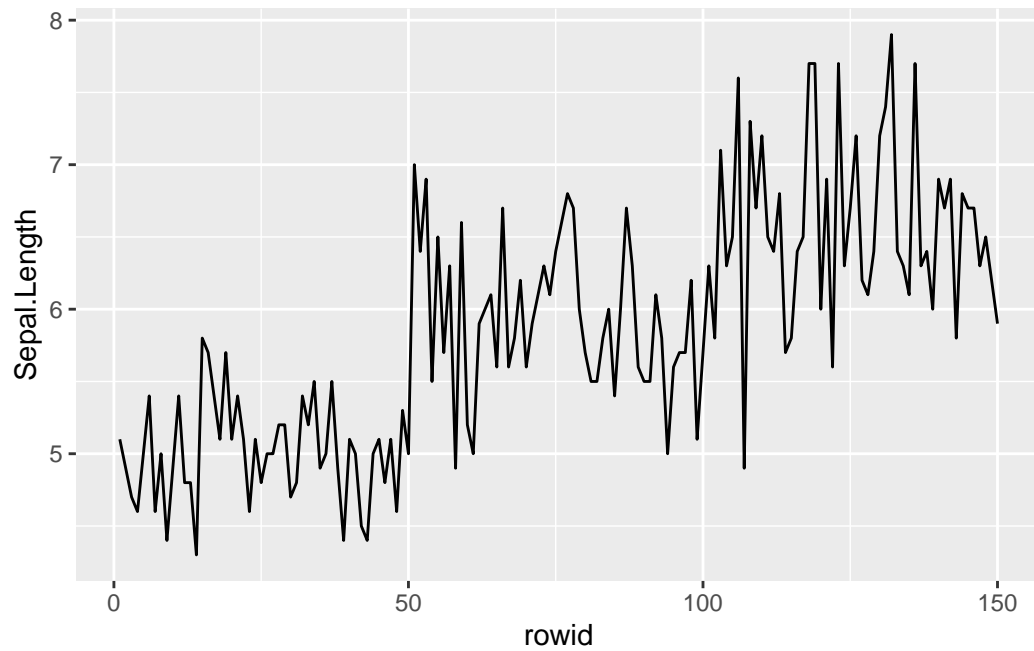
```

2.3 {ggplot2}

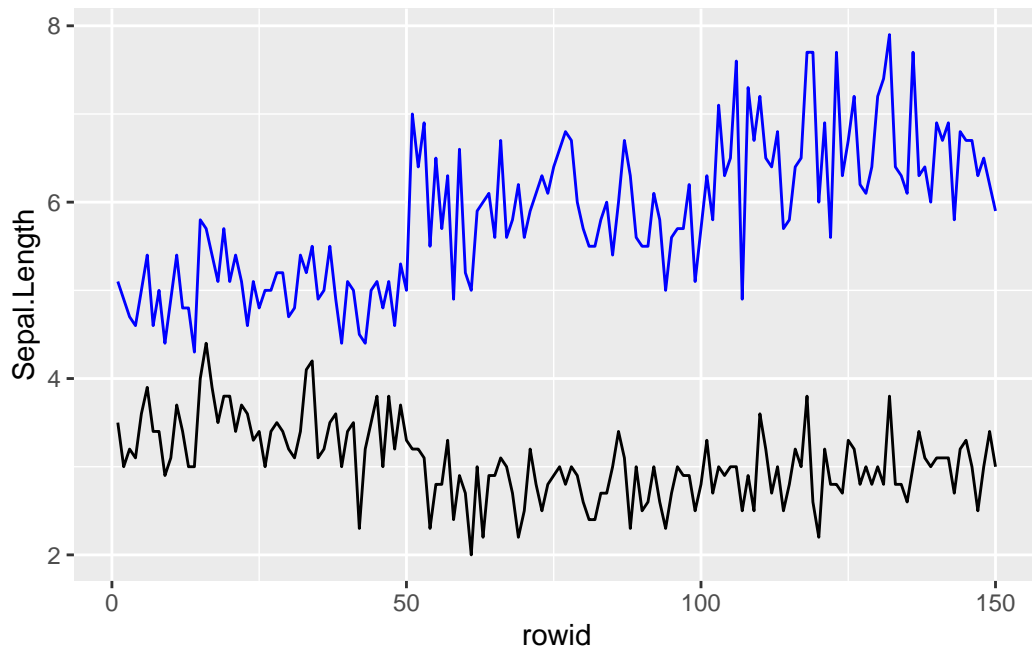
```

library(ggplot2)
iris %>%
  tibble::rowid_to_column() %>%
  ggplot(aes(x = rowid, y = Sepal.Length)) +
  geom_line()

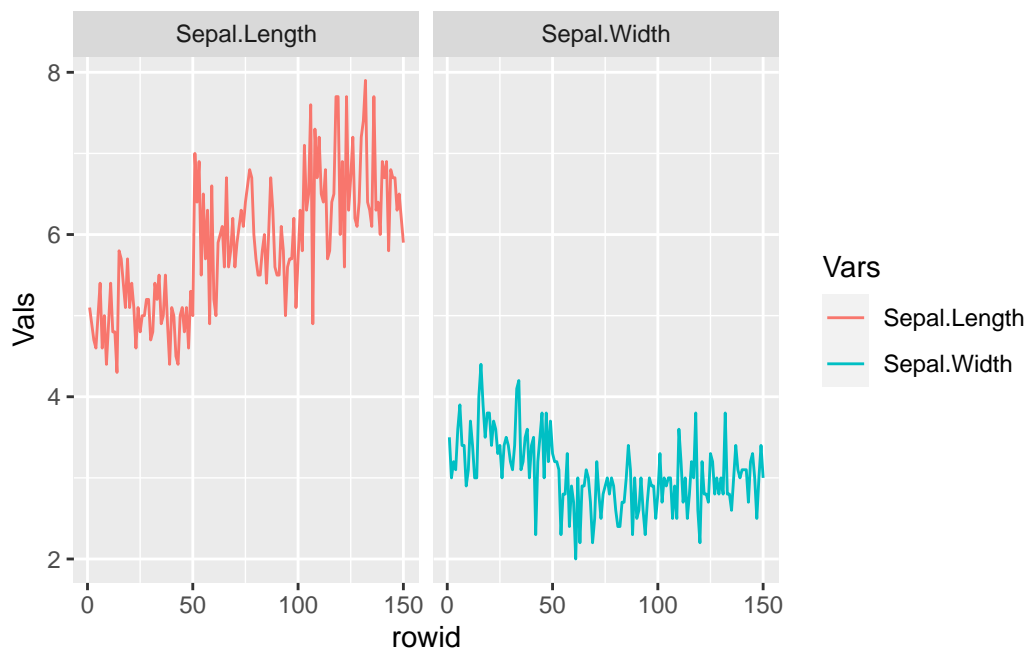
```



```
iris %>%  
  tibble::rowid_to_column() %>%  
  ggplot(aes(x = rowid, y = Sepal.Length)) +  
  geom_line(color = "blue")+  
  geom_line(aes(y = Sepal.Width))
```



```
iris %>%  
  tibble::rowid_to_column() %>%  
  pivot_longer(cols = starts_with("Sepal"),  
               names_to = "Vars", values_to = "Vals") %>%  
  ggplot(aes(x = rowid, y = Vals, color = Vars)) +  
  geom_line() +  
  facet_wrap(~Vars)
```



```
iris_stats_long %>%
  pivot_wider(names_from = Metrica,
              values_from = Linhas)
```

```
# A tibble: 48 x 5
  Species Stat   Org   Length Width
  <fct>   <chr>   <chr>   <dbl> <dbl>
1 setosa media   Sepal  5.01  3.43
2 setosa mediana Sepal  5     3.4
3 setosa maximo  Sepal  5.8   4.4
4 setosa minimo Sepal  4.3   2.3
5 setosa desvpad Sepal  0.352 0.379
6 setosa Q1      Sepal  4.8   3.2
7 setosa Q3      Sepal  5.2   3.68
8 setosa IQR     Sepal  0.400 0.475
9 setosa media   Petal  1.46  0.246
10 setosa mediana Petal  1.5   0.2
# i 38 more rows
```

References

Knuth, Donald E. 1984. “Literate Programming.” *Comput. J.* 27 (2): 97–111. <https://doi.org/10.1093/comjnl/27.2.97>.