Exercicio

May 26, 2020

1 Exercício Aula 19

Carregamento do dataset:

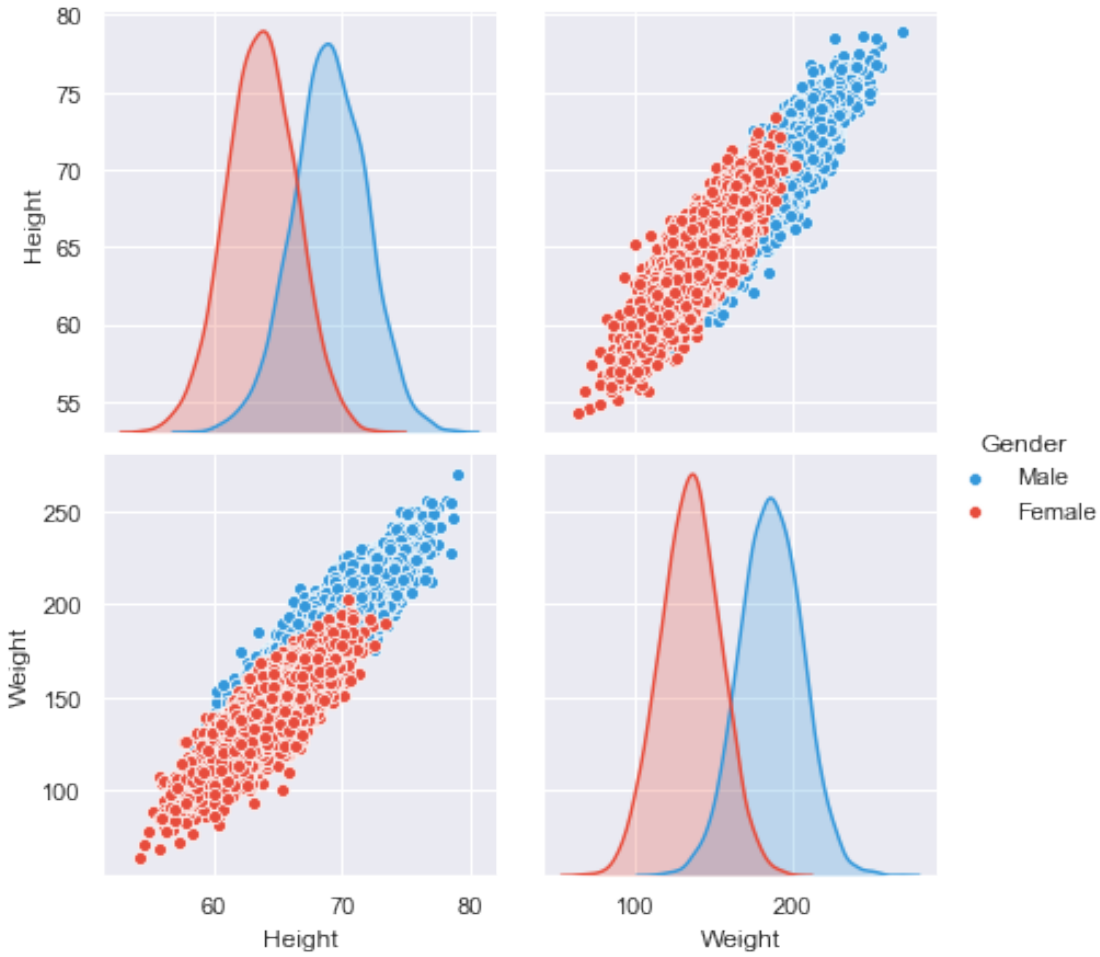
```
      Gender     Height      Weight
0       Male  73.847017  241.893563
1       Male  68.781904  162.310473
2       Male  74.110105  212.740856
3       Male  71.730978  220.042470
4       Male  69.881796  206.349801
…        …        …          …
9995  Female  66.172652  136.777454
9996  Female  67.067155  170.867906
9997  Female  63.867992  128.475319
9998  Female  69.034243  163.852461
9999  Female  61.944246  113.649103

[10000 rows x 3 columns]
```

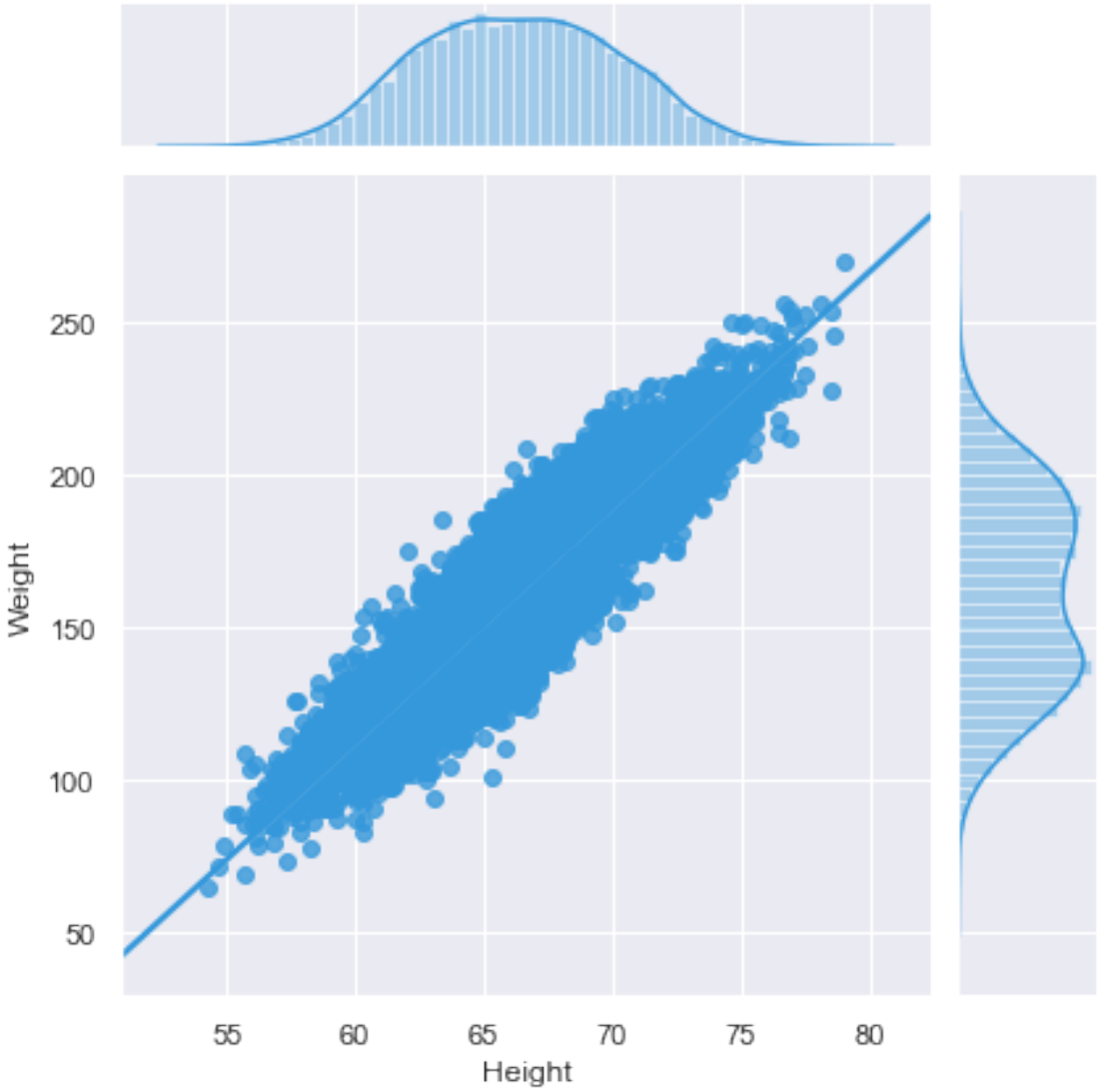
1.1 EDA

Correlação entre os atributos (person correlation).

```
          Height    Weight
Height  1.000000  0.924756
Weight  0.924756  1.000000
```

Distribuição dos atributos.


Height
Weight
Height
Weight
Gender
Male
Female



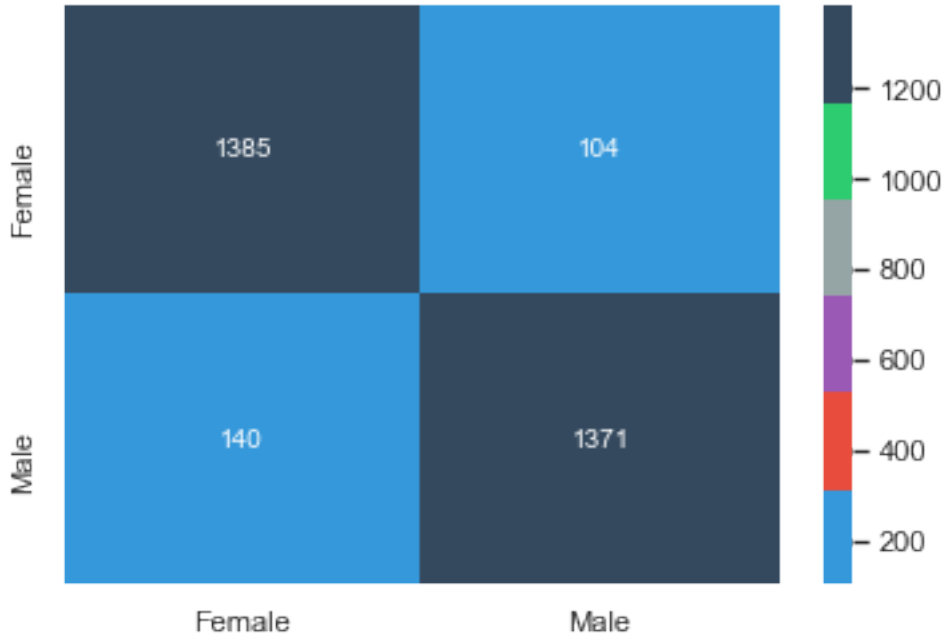
Vamos codificar o gênero como 0 ou 1 e realizar um split dos dados, para treino e teste.

```
Amostra para treinamento: 7000
Amostra para testes     : 3000
Converter valores ['Female' 'Male'] para [0 1]:
```

1.2 Logistic Regression

```
Usados os valores padrão do scikit-learn exceto:
LogisticRegression(max_iter=500, n_jobs=-1, random_state=0)

              precision    recall  f1-score   support

      Female       0.91      0.93      0.92      1489
```

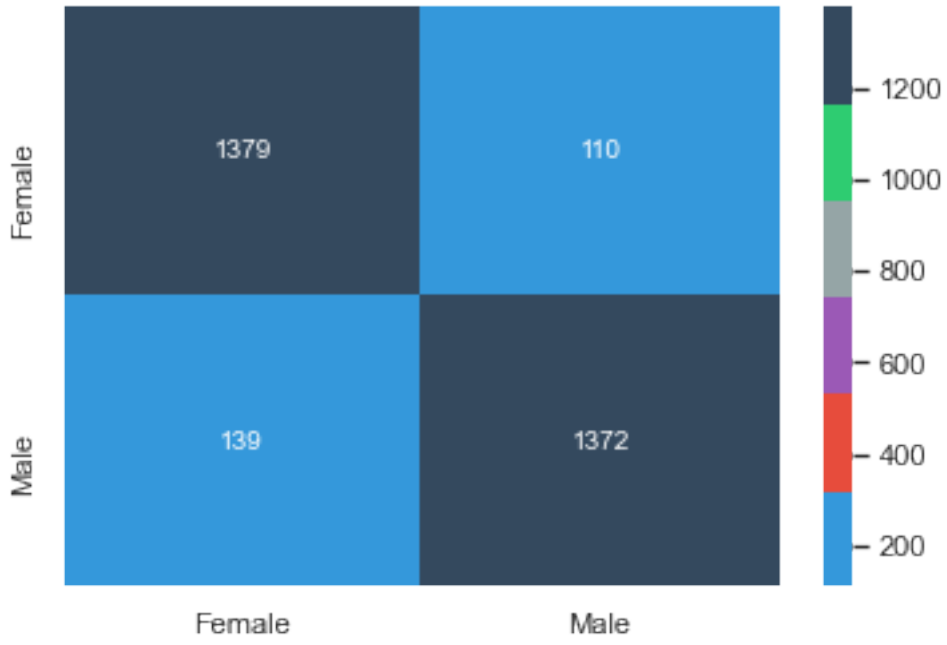
Male	0.93	0.91	0.92	1511
accuracy			0.92	3000
macro avg	0.92	0.92	0.92	3000
weighted avg	0.92	0.92	0.92	3000



1.3 Support Vector Machine

Usados os valores padrão do scikit-learn exceto:
SVC(C=5, random_state=0)

	precision	recall	f1-score	support
Female	0.91	0.93	0.92	1489
Male	0.93	0.91	0.92	1511
accuracy			0.92	3000
macro avg	0.92	0.92	0.92	3000
weighted avg	0.92	0.92	0.92	3000


1379
110
139
1372
Female
Male
Female
Male
1200
1000
800
600
400
200