Aluno: Jhonatan Goulart Mendes

Engenharia Elétrica 3108N

jupyter Regressão Linear P Last Checkpoint: um minuto atrás (autosaved)

File Edit View Insert Cell Kernel Widgets Help Trusted

Run Code

In [1]:
```
import pandas as pd
import matplotlib.pyplot as plt
%matplotlib inline
import seaborn as sns
from statsmodels.formula.api import ols
```

In [2]:
```
data = pd.read_csv('pesos.csv')
```

In [3]:
```
data.head(13)
```

Out[3]:

| | Idade | Peso |
|---|---|---|
| **0** | 0 | 3.44 |
| **1** | 1 | 4.39 |
| **2** | 2 | 4.49 |
| **3** | 3 | 4.78 |
| **4** | 4 | 5.23 |
| **5** | 5 | 6.00 |
| **6** | 6 | 6.18 |
| **7** | 7 | 7.03 |
| **8** | 8 | 7.18 |
| **9** | 9 | 7.50 |
| **10** | 10 | 8.59 |
| **11** | 11 | 8.99 |
| **12** | 12 | 9.54 |

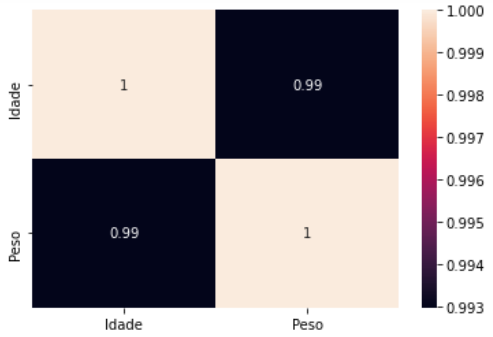
In [4]:
```
data.corr()
```

Out[4]:

| | Idade | Peso |
|---|---|---|
| **Idade** | 1.000000 | 0.992977 |
| **Peso** | 0.992977 | 1.000000 |

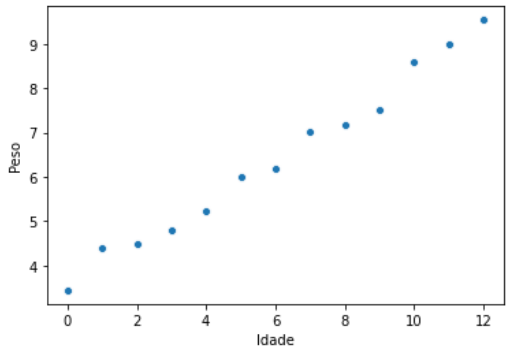
In [5]:
```
corr = data.corr()
sns.heatmap(corr,annot = True)
```

Out[5]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x1fbb963a430>
```




In [6]:
```
sns.scatterplot(x='Idade' , y='Peso', data=data)
```

Out[6]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x1fbb973fb20>
```




In [7]:
```
formula = 'Peso ~ Idade'
modelo_v1 = ols (formula, data = data).fit()
modelo_v1.summary()
```

```
C:\Users\Jhonatan\anaconda3\lib\site-packages\scipy\stats\stats.py:1603: UserWarning: kurtosistest only valid for n>=20 ... c
tinuing anyway, n=13
  warnings.warn("kurtosistest only valid for n>=20 ... continuing "
```

Out[7]:

OLS Regression Results

| | | | |
|---|---|---|---|
| **Dep. Variable:** | Peso | **R-squared:** | 0.986 |
| **Model:** | OLS | **Adj. R-squared:** | 0.985 |
| **Method:** | Least Squares | **F-statistic:** | 774.9 |
| **Date:** | Tue, 15 Sep 2020 | **Prob (F-statistic):** | 1.50e-11 |
| **Time:** | 19:15:55 | **Log-Likelihood:** | 1.3432 |
| **No. Observations:** | 13 | **AIC:** | 1.314 |
| **Df Residuals:** | 11 | **BIC:** | 2.444 |
| **Df Model:** | 1 | | |
| **Covariance Type:** | nonrobust | | |

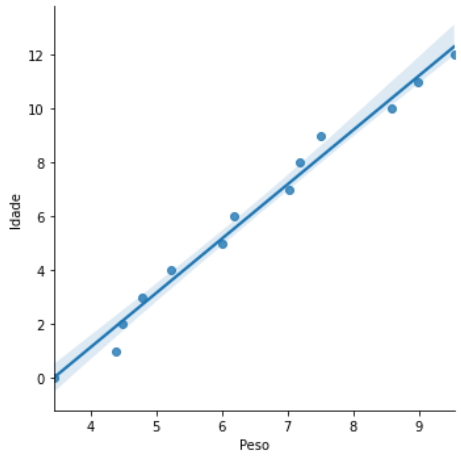
| | coef | std err | t | P>\|t\| | [0.025 | 0.975] |
|---|---|---|---|---|---|---|
| **Intercept** | 3.4737 | 0.124 | 27.937 | 0.000 | 3.200 | 3.747 |
| **Idade** | 0.4895 | 0.018 | 27.837 | 0.000 | 0.451 | 0.528 |

| | | | |
|---|---|---|---|
| **Omnibus:** | 0.138 | **Durbin-Watson:** | 1.980 |
| **Prob(Omnibus):** | 0.933 | **Jarque-Bera (JB):** | 0.349 |
| **Skew:** | 0.089 | **Prob(JB):** | 0.840 |
| **Kurtosis:** | 2.218 | **Cond. No.** | 13.6 |

Warnings:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

In [8]:
```
sns.lmplot(x='Peso', y='Idade', data=data,fit_reg=True)
```

Out[8]:
```
<seaborn.axisgrid.FacetGrid at 0x1fbb97cf700>
```




In [ ]: