

```
In [54]: import pandas as pd
import numpy as np
iris = pd.read_csv("Iris.csv")
iris
```

Out[54]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
0	1	5.1	3.5	1.4	0.2	Iris-setosa
1	2	4.9	3.0	1.4	0.2	Iris-setosa
2	3	4.7	3.2	1.3	0.2	Iris-setosa
3	4	4.6	3.1	1.5	0.2	Iris-setosa
4	5	5.0	3.6	1.4	0.2	Iris-setosa
...	...	...	...	...	...	...
145	146	6.7	3.0	5.2	2.3	Iris-virginica
146	147	6.3	2.5	5.0	1.9	Iris-virginica
147	148	6.5	3.0	5.2	2.0	Iris-virginica
148	149	6.2	3.4	5.4	2.3	Iris-virginica
149	150	5.9	3.0	5.1	1.8	Iris-virginica

150 rows × 6 columns

```
In [55]: irispetal = iris[['SepalLengthCm', 'SepalWidthCm']]
irispetal
```

Out[55]:

	SepalLengthCm	SepalWidthCm
0	5.1	3.5
1	4.9	3.0
2	4.7	3.2
3	4.6	3.1
4	5.0	3.6
...	...	...
145	6.7	3.0
146	6.3	2.5
147	6.5	3.0
148	6.2	3.4
149	5.9	3.0

150 rows × 2 columns

```
In [56]: iris
```

Out[56]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
0	1	5.1	3.5	1.4	0.2	Iris-setosa
1	2	4.9	3.0	1.4	0.2	Iris-setosa
2	3	4.7	3.2	1.3	0.2	Iris-setosa
3	4	4.6	3.1	1.5	0.2	Iris-setosa
4	5	5.0	3.6	1.4	0.2	Iris-setosa
...	...	...	...	...	...	...
145	146	6.7	3.0	5.2	2.3	Iris-virginica
146	147	6.3	2.5	5.0	1.9	Iris-virginica
147	148	6.5	3.0	5.2	2.0	Iris-virginica
148	149	6.2	3.4	5.4	2.3	Iris-virginica
149	150	5.9	3.0	5.1	1.8	Iris-virginica

150 rows × 6 columns

```
In [57]: condicion1 = iris["SepalLengthCm"] > 5
condicion2 = iris["SepalWidthCm"] >= 3
iris2 = iris[condicion1 & condicion2]
iris2
```

Out[57]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
0	1	5.1	3.5	1.4	0.2	Iris-setosa
5	6	5.4	3.9	1.7	0.4	Iris-setosa
10	11	5.4	3.7	1.5	0.2	Iris-setosa
14	15	5.8	4.0	1.2	0.2	Iris-setosa
15	16	5.7	4.4	1.5	0.4	Iris-setosa
...	...	...	...	...	...	...
144	145	6.7	3.3	5.7	2.5	Iris-virginica
145	146	6.7	3.0	5.2	2.3	Iris-virginica
147	148	6.5	3.0	5.2	2.0	Iris-virginica
148	149	6.2	3.4	5.4	2.3	Iris-virginica
149	150	5.9	3.0	5.1	1.8	Iris-virginica

67 rows × 6 columns

In [40]: iris2.describe()

Out[40]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	petal.width.st
count	38.000000	38.000000	38.0	38.000000	38.000000	3.800000e+01
mean	112.236842	6.236842	3.0	4.894737	1.578947	4.674623e-17
std	29.844130	0.430851	0.0	0.689280	0.500355	1.000000e+00
min	51.000000	6.000000	3.0	4.000000	1.000000	-1.157072e+00
25%	94.250000	6.000000	3.0	4.000000	1.000000	-1.157072e+00
50%	117.500000	6.000000	3.0	5.000000	2.000000	8.415070e-01
75%	137.750000	6.000000	3.0	5.000000	2.000000	8.415070e-01
max	149.000000	7.000000	3.0	6.000000	2.000000	8.415070e-01

In [58]: irispivot = iris2.pivot\_table(values = 'PetalWidthCm', index = 'Species', aggfunc = [np.median, np.mean, np.std])  
irispivot

Out[58]:

	median	mean	std
	PetalWidthCm	PetalWidthCm	PetalWidthCm
Species			
Iris-setosa	0.2	0.277273	0.106600
Iris-versicolor	1.5	1.487500	0.145488
Iris-virginica	2.1	2.127586	0.250566

In [59]: numeroregistros = iris2['Species'].value\_counts()  
numeroregistros

Out[59]: Iris-virginica 29  
Iris-setosa 22  
Iris-versicolor 16  
Name: Species, dtype: int64

In [61]: width = iris2['PetalWidthCm']  
petalmean = iris2['PetalWidthCm'].mean()  
petalstd = iris2['PetalWidthCm'].std()  
  
iris2['petal.width.st'] = (width - petalmean) / petalstd  
iris2

C:\Users\Lenovo\AppData\Local\Temp\ipykernel\_15600\1080839062.py:5: SettingWithCopyWarning:  
A value is trying to be set on a copy of a slice from a DataFrame.  
Try using .loc[row\_indexer,col\_indexer] = value instead

See the caveats in the documentation: [https://pandas.pydata.org/pandas-docs/stable/user\\_guide/indexing.html#returning-a-view-versus-a-copy](https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)  
iris2['petal.width.st'] = (width - petalmean) / petalstd

Out[61]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species	petal.width.st
0	1	5.1	3.5	1.4	0.2	Iris-setosa	-1.406526
5	6	5.4	3.9	1.7	0.4	Iris-setosa	-1.165510
10	11	5.4	3.7	1.5	0.2	Iris-setosa	-1.406526
14	15	5.8	4.0	1.2	0.2	Iris-setosa	-1.406526
15	16	5.7	4.4	1.5	0.4	Iris-setosa	-1.165510
...	...	...	...	...	...	...	...
144	145	6.7	3.3	5.7	2.5	Iris-virginica	1.365157
145	146	6.7	3.0	5.2	2.3	Iris-virginica	1.124141
147	148	6.5	3.0	5.2	2.0	Iris-virginica	0.762618
148	149	6.2	3.4	5.4	2.3	Iris-virginica	1.124141
149	150	5.9	3.0	5.1	1.8	Iris-virginica	0.521602

67 rows × 7 columns

In [62]: `iris2.rename(columns = {'Species':'Variedad','petal.width.st':'Ancho Est Petalo'}, inplace = True)`  
`iris2`

C:\Users\Lenovo\AppData\Local\Temp\ipykernel\_15600\3885643705.py:1: SettingWithCopyWarning:  
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: [https://pandas.pydata.org/pandas-docs/stable/user\\_guide/indexing.html#returning-a-view-versus-a-copy](https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

`iris2.rename(columns = {'Species':'Variedad','petal.width.st':'Ancho Est Petalo'}, inplace = True)`

Out[62]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Variedad	Ancho Est Petalo
0	1	5.1	3.5	1.4	0.2	Iris-setosa	-1.406526
5	6	5.4	3.9	1.7	0.4	Iris-setosa	-1.165510
10	11	5.4	3.7	1.5	0.2	Iris-setosa	-1.406526
14	15	5.8	4.0	1.2	0.2	Iris-setosa	-1.406526
15	16	5.7	4.4	1.5	0.4	Iris-setosa	-1.165510
...	...	...	...	...	...	...	...
144	145	6.7	3.3	5.7	2.5	Iris-virginica	1.365157
145	146	6.7	3.0	5.2	2.3	Iris-virginica	1.124141
147	148	6.5	3.0	5.2	2.0	Iris-virginica	0.762618
148	149	6.2	3.4	5.4	2.3	Iris-virginica	1.124141
149	150	5.9	3.0	5.1	1.8	Iris-virginica	0.521602

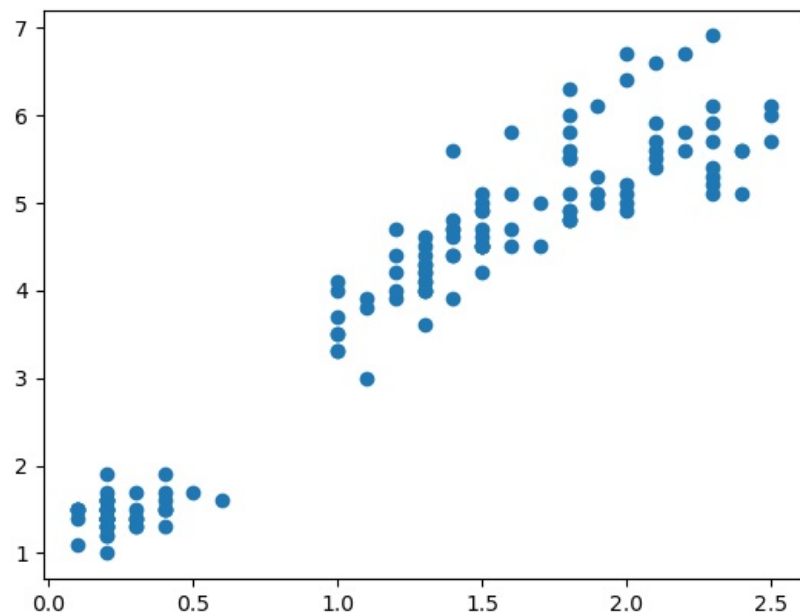
67 rows × 7 columns

In [63]: `iris2.to_csv('Iris2.csv')`

In [64]: `import matplotlib.pyplot as plt`

In [65]: `x = iris["PetalWidthCm"]`  
`y = iris["PetalLengthCm"]`  
`plt.scatter(x,y)`

Out[65]: `<matplotlib.collections.PathCollection at 0x1d3258d8fd0>`



In [ ]:

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