	<pre>Creado por: Isabel Maniega import pandas as pd import matplotlib.pyplot as plt import seaborn as sns df = pd.read_csv("Iris.csv")</pre>
Out[2]:	Id SepalLengthCm SepalWidthCm PetalLengthCm 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
In [8]:	<pre># Para el pétalo sns.FacetGrid(df, hue="Species", height=6.4) \ .map(plt.scatter, "PetalLengthCm", "PetalWidthCm") \ .add_legend() plt.title("Gráfica para el pétalo - con Seaborn") plt.show() /home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead.</pre>
	<pre>plot_args = [v for k, v in plot_data.iteritems()] /home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()] /home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()]</pre>
	2.0 - E 15 - Species Iris-setosa Iris-versicolor Iris-virginica
	0.5 0.0 1 2 3 4 5 6 7 PetalLengthCm Conclusiones:
In [9]:	 Se observa como en el caso de setosa, esta bien diferenciadas de las dos clases. En el caso de virginica y versicolor entre 4.5 y 5.5 de longitud y al rededor de 1.5 de anchura están mezclados. # para el sépalo sns.FacetGrid(df, hue="Species", height = 6.4) \ .map(plt.scatter, "SepalLengthCm", "SepalWidthCm") \ .add_legend() \ .set(title="Gráfica para el sépalo - con Seaborn") # plt.title("Species en función del largo y ancho del sépalo") plt.show()
	/home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()] /home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()] /home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()]
	Species Iris-setosa Iris-versicolor Iris-virginica
	2.5 - 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 SepalLengthCm
In [10]: Out[10]:	Conclusiones: • Se observa como en el caso de setosa, esta bien diferenciadas de las dos clases. • En el caso de virginica y versicolor están mezclados. df.describe() ld SepalLengthCm SepalWidthCm PetalLengthCm PetalWidthCm count 150.000000 150.000000 150.000000 150.000000
	mean 75.500000 5.843333 3.054000 3.758667 1.198667 std 43.445368 0.828066 0.433594 1.764420 0.763161 min 1.000000 4.300000 2.000000 1.000000 0.300000 25% 38.250000 5.100000 2.800000 1.600000 0.300000 50% 75.500000 5.800000 3.00000 4.350000 1.300000 75% 112.750000 6.400000 3.300000 5.100000 1.800000 max 150.000000 7.900000 4.400000 6.900000 2.500000
In [11]: Out[11]:	<pre># boxplot df.boxplot(column=["SepalLengthCm", "SepalWidthCm", "PetalLengthCm", "PetalWidthCm"]) </pre> <pre> AxesSubplot:> </pre>
In [12]:	# Filtrar por cada uno de los tipos setosa = df[df["Species"] == "Iris-setosa"] setosa.head()
Out[12]:	Id SepalLengthCm SepalWidthCm PetalLengthCm 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
Out[15]:	<pre>setosa.boxplot(column=["SepalLengthCm", "SepalWidthCm", "PetalLengthCm", "PetalWidthCm"]) <axessubplot:></axessubplot:></pre>
In [13]:	# Filtrar por cada uno de los tipos versicolor = df[df["Species"] == "Iris-versicolor"] versicolor.head()
Out[13]: In [16]:	Id SepalLengthCm SepalWidthCm PetalWidthCm Species 50 51 7.0 3.2 4.7 1.4 Iris-versicolor 51 52 6.4 3.2 4.5 1.5 Iris-versicolor 52 53 6.9 3.1 4.9 1.5 Iris-versicolor 53 54 5.5 2.3 4.0 1.3 Iris-versicolor 54 55 6.5 2.8 4.6 1.5 Iris-versicolor # boxplot para setosa versicolor.boxplot(column=["SepalLengthCm", "SepalWidthCm", "PetalLengthCm", "PetalWidthCm"])
Out[16]:	<pre><axessubplot:> 7 6 5 4 3</axessubplot:></pre>
<pre>In [14]: Out[14]:</pre>	# Filtrar por cada uno de los tipos virginica = df[df["Species"] == "Iris-virginica"] virginica.head() Id SepalLengthCm SepalWidthCm PetalLengthCm PetalWidthCm Species
In [17]:	100 101 6.3 3.3 6.0 2.5 Iris-virginica 101 102 5.8 2.7 5.1 1.9 Iris-virginica 102 103 7.1 3.0 5.9 2.1 Iris-virginica 103 104 6.3 2.9 5.6 1.8 Iris-virginica 104 105 6.5 3.0 5.8 2.2 Iris-virginica # boxplot para setosa virginica boxplot(column=["SepalLengthCm", "SepalWidthCm", "PetalLengthCm", "PetalWidthCm"])
Out[17]:	<pre><axessubplot:></axessubplot:></pre>
In [18]:	plt.figure(figsize=(20,20)) plt.subplot(3, 3, 1) setosa.boxplot(column=["SepalLengthCm", "SepalWidthCm", "PetalLengthCm", "PetalWidthCm"]) plt.subplot(3, 3, 2) versicolor.boxplot(column=["SepalLengthCm", "SepalWidthCm", "PetalLengthCm", "PetalWidthCm"])
	<pre>plt.subplot(3, 3, 3) virginica.boxplot(column=["SepalLengthCm", "SepalWidthCm", "PetalLengthCm", "PetalWidthCm"]) plt.show()</pre>
In [19]:	def graph(y): sns.boxplot(x="Species", y=y, data=df) plt.figure(figsize=(10,10))
	<pre># Adding the subplot at the specified # grid position plt.subplot(221) graph('SepalLengthCm') plt.subplot(222) graph('SepalWidthCm') plt.subplot(223) graph('PetalLengthCm') plt.subplot(224) graph('PetalWidthCm')</pre>
	8.0 7.5 - 4.0 4.0 - 4.5 4.0 -
	2.5 - Iris-setosa Iris-versicolor Species Iris-virginica Species Speci
	Conclusiones:
	 Observamos que en el caso del Sépalo en virgínica presenta outliers, mientras que en las otras dos especies no. En el caso del Pétalo setosa y versicolor presentan outliers para la longitud del pétalo, y en el caso de setosa también para la anchura. en el caso de setosa el tamaño del pétalo y también en la longitud del sépalo presenta menor tamaño que las otras dos especies. Y la variabilidad de los datos también es menor en estos casos. Mientras que en la anchura del sépalo la variabilidad es mucho mayor que el de las otras dos especies. Histograma
In [20]:	<pre>SepalLengthCm plt.figure(figsize=(20,20)) df.groupby("Species").SepalLengthCm.value_counts().plot(kind="bar") plt.show()</pre>
	6-1
	4-
	2-
	(Iris-setosa, 5.0) (Iris-setosa, 5.1) (Iris-setosa, 4.8) (Iris-setosa, 4.9) (Iris-setosa, 5.7) (Iris-setosa, 5.7) (Iris-setosa, 5.3) (Iris-setosa, 5.3) (Iris-setosa, 5.3) (Iris-versicolor, 6.1) (Iris-versicolor, 6.1) (Iris-versicolor, 6.1) (Iris-versicolor, 6.1) (Iris-versicolor, 6.1) (Iris-versicolor, 6.3) (Iris-virginica, 6.3) (Iris-virginica, 6.3) (Iris-virginica, 6.3) (Iris-virginica, 6.3) (Iris-virginica, 7.2) (Iris-virginica, 7.3)
In [21]:	<pre>SepalWidthCm plt.figure(figsize=(20,20)) df.groupby("Species").SepalWidthCm.value_counts().plot(kind="bar") plt.show()</pre>
	10 -
	6-
	2-
In [22]:	(Iris-setosa, 3.5) (Iris-setosa, 3.1) (Iris-setosa, 4.1) (Iris-setosa, 4.1) (Iris-setosa, 4.1) (Iris-versicolor, 2.1) (Iris-versicolor, 2.1) (Iris-versicolor, 3.1) (Iris-versicolor, 3.1) (Iris-versicolor, 3.1) (Iris-versicolor, 3.1) (Iris-versicolor, 3.2) (Iris-versicolor, 3.2) (Iris-virginica, 3.1) (Iris-virginica, 2.5) (Iris-virginica, 2.6) (Iris-virginica, 3.3)
	<pre>plt.figure(figsize=(20,20)) df.groupby("Species").PetalLengthCm.value_counts().plot(kind="bar") plt.show()</pre>
	10 -
	6-
	2-
In [23]:	(Iris-setosa, 1.5) (Iris-setosa, 1.6) (Iris-setosa,
	<pre>df.groupby("Species").PetalWidthCm.value_counts().plot(kind="bar") plt.show()</pre>
	20 -
	10 -
	5-
In [24]:	(Itis-virginica, 1.5)
	<pre>plot = sns.FacetGrid(df, hue="Species") plot.map(sns.distplot, "PetalLengthCm").add_legend() plot = sns.FacetGrid(df, hue="Species") plot.map(sns.distplot, "PetalWidthCm").add_legend() plt.show() /home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()] /home/isabel/.local/lib/python3.8/site-packages/seaborn/distributions.py:2557: FutureWarning: `distplot` is a d eprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a f</pre>
	<pre>igure-level function with similar flexibility) or `histplot` (an axes-level function for histograms). warnings.warn(msg, FutureWarning) /home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()] /home/isabel/.local/lib/python3.8/site-packages/seaborn/distributions.py:2557: FutureWarning: `distplot` is a d eprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a f igure-level function with similar flexibility) or `histplot` (an axes-level function for histograms). warnings.warn(msg, FutureWarning) /home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()] /home/isabel/.local/lib/python3.8/site-packages/seaborn/distributions.py:2557: FutureWarning: `distplot` is a d eprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a f</pre>
	<pre>igure-level function with similar flexibility) or `histplot` (an axes-level function for histograms). warnings.warn(msg, FutureWarning) /home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()] /home/isabel/.local/lib/python3.8/site-packages/seaborn/distributions.py:2557: FutureWarning: `distplot` is a d eprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a f igure-level function with similar flexibility) or `histplot` (an axes-level function for histograms). warnings.warn(msg, FutureWarning) /home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()] /home/isabel/.local/lib/python3.8/site-packages/seaborn/distributions.py:2557: FutureWarning: `distplot` is a d eprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a f igure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).</pre>
	<pre>warnings.warn(msg, FutureWarning) /home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()] /home/isabel/.local/lib/python3.8/site-packages/seaborn/distributions.py:2557: FutureWarning: `distplot` is a d eprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a f igure-level function with similar flexibility) or `histplot` (an axes-level function for histograms). warnings.warn(msg, FutureWarning) /home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()] /home/isabel/.local/lib/python3.8/site-packages/seaborn/distributions.py:2557: FutureWarning: `distplot` is a d eprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a f igure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).</pre>
	<pre>warnings.warn(msg, FutureWarning) /home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()] /home/isabel/.local/lib/python3.8/site-packages/seaborn/distributions.py:2557: FutureWarning: `distplot` is a d eprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a f igure-level function with similar flexibility) or `histplot` (an axes-level function for histograms). warnings.warn(msg, FutureWarning) /home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()] /home/isabel/.local/lib/python3.8/site-packages/seaborn/distributions.py:2557: FutureWarning: `distplot` is a d eprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a f igure-level function with similar flexibility) or `histplot` (an axes-level function for histograms). warnings.warn(msg, FutureWarning)</pre>
	<pre>/home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()] /home/isabel/.local/lib/python3.8/site-packages/seaborn/distributions.py:2557: FutureWarning: `distplot` is a d eprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a f igure-level function with similar flexibility) or `histplot` (an axes-level function for histograms). warnings.warn(msg, FutureWarning) /home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()] /home/isabel/.local/lib/python3.8/site-packages/seaborn/distributions.py:2557: FutureWarning: `distplot` is a d eprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a f igure-level function with similar flexibility) or `histplot` (an axes-level function for histograms). warnings.warn(msg, FutureWarning)</pre>
	warnings.warn(msg, FutureWarning) /home/isabel/.local/lib/python3.8/site-packages/seaborn/axisgrid.py:676: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead. plot_args = [v for k, v in plot_data.iteritems()] /home/isabel/.local/lib/python3.8/site-packages/seaborn/distributions.py:2557: FutureWarning: `distplot` is a d eprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a f igure-level function with similar flexibility) or `histplot` (an axes-level function for histograms). warnings.warn(msg, FutureWarning) Species Iris-setosa Iris-versicolor
	150 - Species Iris-versicolor 150 - Species Iris-setosa Iris-versicolor
	15 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -
	Iris-versicolor Iris-virginica Iris-versicolor Iris-virginica Species Iris-setosa Iris-setosa Iris-versicolor Iris-virginica
In [25]:	Violin plot Pétal sns.set(font_scale=1.8, rc={'figure.figsize':(12, 10)})
	<pre>sns.set(font_scale=1.8, rc={'figure.figsize':(12, 10)}) sns.violinplot(x="Species", y="PetalLengthCm", data=df, size=6) plt.show()</pre> 7 6
	E 5
	PetalLengthCm 5
	Petalend 3 2 Iris-setosa Iris-versicolor Species Iris-virginica
In [26]:	2 1 Iris-setosa Iris-versicolor Iris-virginica
In [26]:	Iris-setosa Iris-versicolor Iris-virginica Species sns.set(font_scale=1.8, rc={'figure.figsize':(12, 10)}) sns.violinplot(x="Species", y="PetalWidthCm", data=df, size=6)

2.5 2.0 PetalWidthCm 0.1 0.5 0.0 Iris-versicolor Species Iris-setosa Iris-virginica **Conclusiones:** • En el caso, de víginica presenta más variabilidad de los datos y estan más homogéneos, que en caso sobretodo de setosa que sería lo opuesto. • Sépal sns.set(font_scale=1.8, rc={'figure.figsize':(12, 10)})
sns.violinplot(x="Species", y="SepalLengthCm", data=df, size=6)
plt.show() 8 SepalLengthCm 5 4 Iris-versicolor Iris-virginica Iris-setosa Species sns.set(font_scale=1.8, rc={'figure.figsize':(12, 10)})
sns.violinplot(x="Species", y="PetalWidthCm", data=df, size=6)
plt.show() 2.5 2.0 PetalWidthCm 0.1 0.5 0.0 Iris-versicolor Species Iris-setosa Iris-virginica **Conclusiones:** • En el caso de la longitud en virgínica presentan más variabilidad pero en anchura es en setosa, los valores se encuentran concentrados en ambas especies. Out[36]: <seaborn.axisgrid.PairGrid at 0x7fae91b644c0> SepalLengthCm 4.5 SepalWidthCm 3.5 2.5 4.0 Species 2.0 Iris-setosa Iris-versicolor PetalLengthCm N b 9 Iris-virginica 2.5 2.0 PetalWidthCm 1.5 1.0 0.5 0.0 6 8 SepalLengthCm 1 2 PetalWidthCm 2 3 4 SepalWidthCm 2 4 6 PetalLengthCm 8 0 3 plt.show() <ipython-input-30-94f140bb46ea>:1: FutureWarning: The default value of numeric_only in DataFrame.corr is deprec
ated. In a future version, it will default to False. Select only valid columns or specify the value of numeric_
only to silence this warning.
sns.heatmap(df.corr(method='pearson').drop(-1.0 -0.11 0.87 0.82 SepalLengthCm 1 -0.8 -0.6 -0.11 -0.42 -0.36 1 ${\sf SepalWidthCm}$ -0.4 -0.2 0.96 PetalLengthCm -0.0 -**-**0.2 0.96 0.82 -0.36 1 ${\bf PetalWidthCm}$ SepalLengthCm SepalWidthCm **PetalWidthCm PetalLengthCm** Creado por: Isabel Maniega

In [27]:

In [28]:

In [36]:

In [30]: