BEGINNER LEVEL TASK

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Iris Flowers Classification ML Project

LANGUAGE : PYTHON

```
# IMPORTING LIBRARIES
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
%matplotlib inline
```

```
dataset = pd.read_csv("/Iris.csv - Iris.csv (3).csv")
dataset
```

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

150 rows × 5 columns

```
dataset.shape
```

```
(150, 5)
```

`dataset.head()`

	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
0	5.1	3.5	1.4	0.2	Iris-setosa
1	4.9	3.0	1.4	0.2	Iris-setosa
2	4.7	3.2	1.3	0.2	Iris-setosa
3	4.6	3.1	1.5	0.2	Iris-setosa
4	5.0	3.6	1.4	0.2	Iris-setosa

`dataset.info()`

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 150 entries, 0 to 149
Data columns (total 5 columns):
 #   Column         Non-Null Count  Dtype
---  ------         --------------  -----
 0   SepalLengthCm  150 non-null    float64
 1   SepalWidthCm   150 non-null    float64
 2   PetalLengthCm  150 non-null    float64
 3   PetalWidthCm   150 non-null    float64
 4   Species        150 non-null    object
dtypes: float64(4), object(1)
memory usage: 6.0+ KB
```

`dataset.describe()`

	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm
count	150.000000	150.000000	150.000000	150.000000
mean	5.843333	3.054000	3.758667	1.198667
std	0.828066	0.433594	1.764420	0.763161
min	4.300000	2.000000	1.000000	0.100000
25%	5.100000	2.800000	1.600000	0.300000
50%	5.800000	3.000000	4.350000	1.300000
75%	6.400000	3.300000	5.100000	1.800000
max	7.900000	4.400000	6.900000	2.500000

```
# We'll use this to make a scatterplot of the Iris features.
```

```
dataset.plot(kind="scatter", x="SepalLengthCm", y="SepalWidthCm")
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f706b28ced0>
```
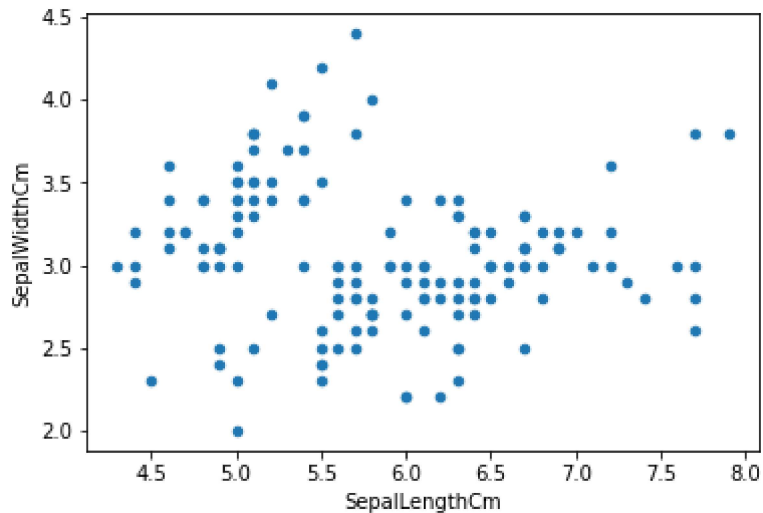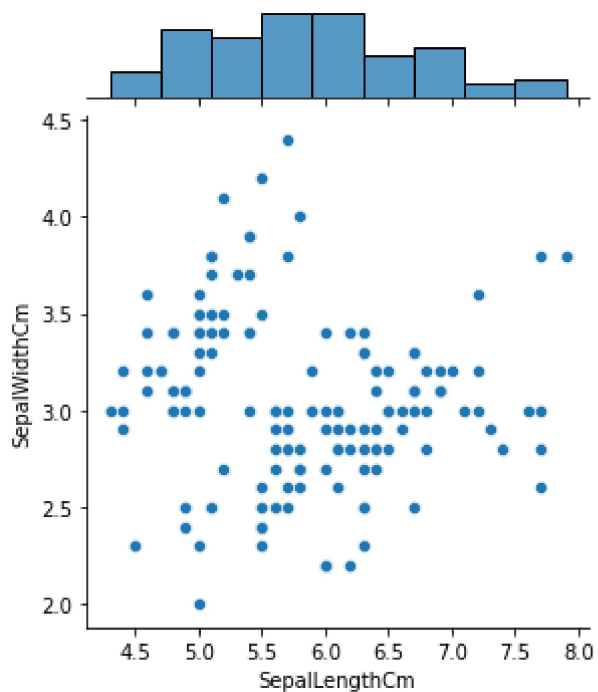


```
# A seaborn jointplot shows bivariate scatterplots and univariate histograms in the same figu
sns.jointplot(x="SepalLengthCm", y="SepalWidthCm", data=dataset, size=5)
```
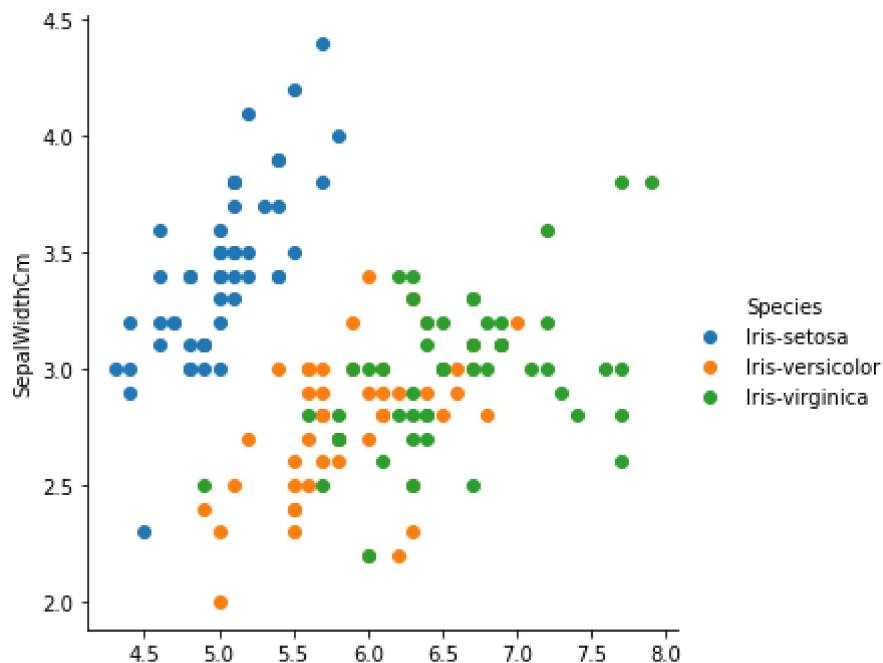
```
/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:2182: UserWarning: The `size`
  warnings.warn(msg, UserWarning)
<seaborn.axisgrid.JointGrid at 0x7f706ad2f990>
```
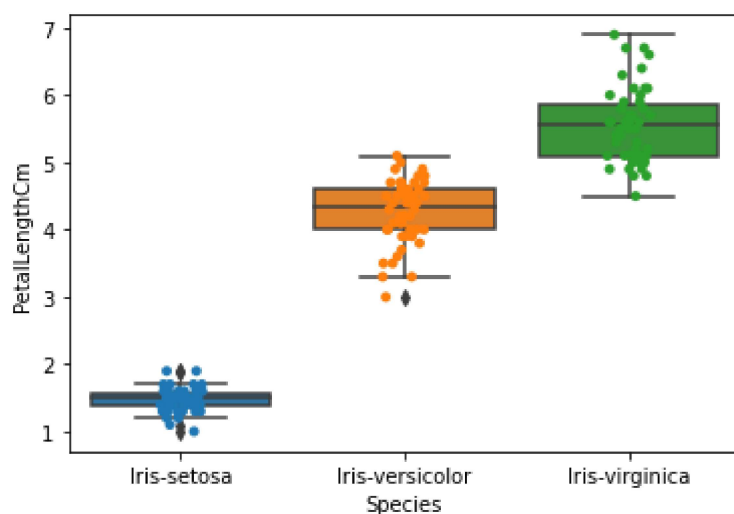


```
sns.FacetGrid(dataset, hue="Species", size=5) \
    .map(plt.scatter, "SepalLengthCm", "SepalWidthCm") \
    .add_legend()
```

```
/usr/local/lib/python3.7/dist-packages/seaborn/axisgrid.py:337: UserWarning: The `size`
  warnings.warn(msg, UserWarning)
<seaborn.axisgrid.FacetGrid at 0x7f70610f9f90>
```



```
ax = sns.boxplot(x="Species", y="PetalLengthCm", data=dataset)
ax = sns.stripplot(x="Species", y="PetalLengthCm", data=dataset, jitter=True, edgecolor="gray
```
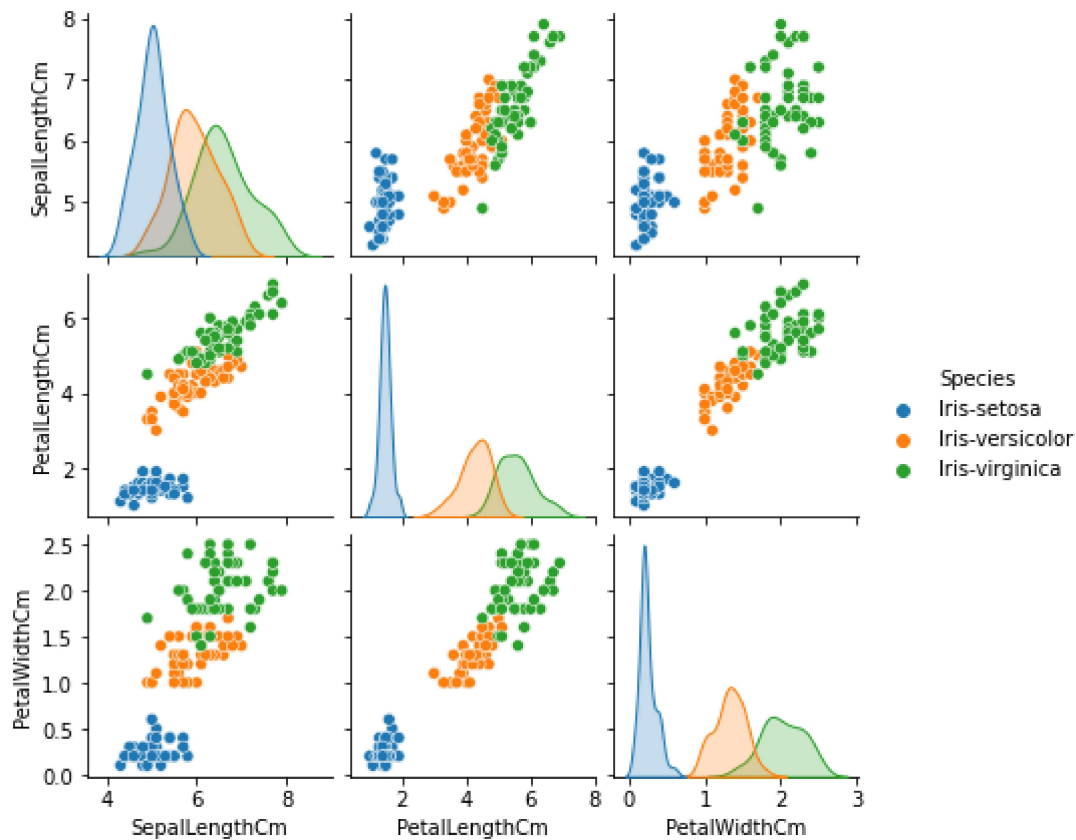


```
import seaborn as sns
import matplotlib.pyplot as plt



sns.countplot(x='Species', data=dataset, )
plt.show()
```

```
import seaborn as sns
import matplotlib.pyplot as plt
sns.pairplot(dataset.drop(['SepalWidthCm'], axis = 1),
             hue='Species', height=2)
```

```
<seaborn.axisgrid.PairGrid at 0x7f7060c48e10>
```
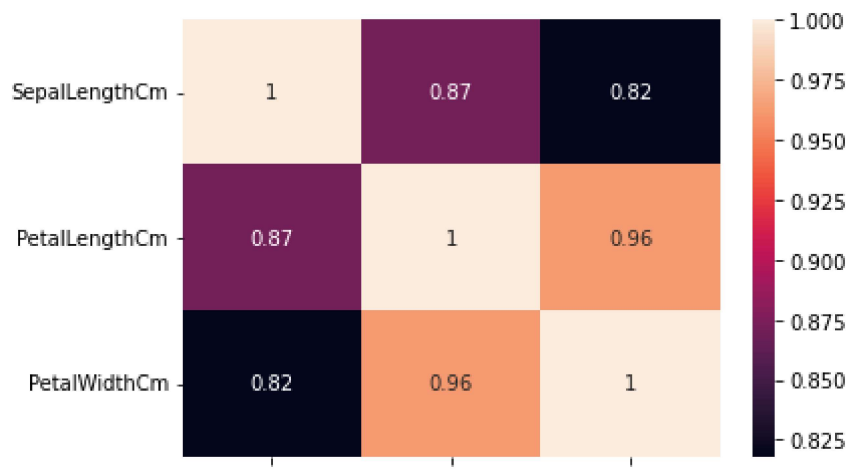


```
# importing packages
import seaborn as sns
import matplotlib.pyplot as plt
```

```
sns.heatmap(dataset.corr(method='pearson').drop(
  ['SepalWidthCm'], axis=1).drop(['SepalWidthCm'], axis=0),
          annot = True);
```

```
plt.show()
```



```python
import seaborn as sns
import matplotlib.pyplot as plt

def graph(y):
    sns.boxplot(x="Species", y=y, data=dataset)

plt.figure(figsize=(10,10))

# 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')

plt.show()
```