pineapple.ipynb - JupyterLab

https://yellow-electrician-rlgpv.pwskills.app/lab/tree/work/pineapple.ipynb

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pineapple.ipynb | IRIS.csv

Code | Python 3 (ipykernel)

[21]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import os
```

[22]:
```
df = pd.read_csv('IRIS.csv')
```

[23]:
```
df.head()
```

[23]:

	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

[24]:
```
df = df.drop(columns = ['Id'])
```

[25]:
```
df.head()
```

[25]:

	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

Simple 0 1 Python 3 (ipykernel) | Idle Mode: Command Ln 5, Col 10 pineapple.ipynb

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pineapple.ipynb | IRIS.csv

Code | Python 3 (pykernel)

[21]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import os
```

[22]:
```
df = pd.read_csv('IRIS.csv')
```

[23]:
```
df.head()
```

[23]:

	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

[24]:
```
df = df.drop(columns = ['Id'])
```

[25]:
```
df.head()
```

[25]:

	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

Simple 0 1 Python 3 (ipykernel) | Idle Mode: Command Ln 5, Col 10 pineapple.ipynb

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pineapple.ipynb | IRIS.csv

Code | Python 3 (pykernel)

[26]:
```
df.describe()
```

[26]:

	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

[27]:
```
df.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
```

[28]:
```
df["Species"].value_counts()
```

[28]:
```
Iris-setosa        50
Iris-versicolor    50
```

Simple 0 1 Python 3 (ipykernel) | Idle Mode: Command Ln 5, Col 10 pineapple.ipynb

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pineapple.ipynb | IRIS.csv

Code | Python 3 (pykernel)

```
memory usage: 6.0+ KB
```

[28]:
```
df["Species"].value_counts()
```

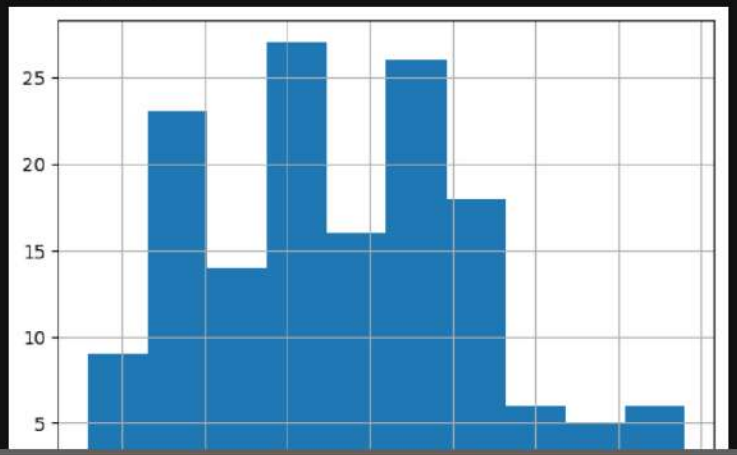
[28]:
```
Iris-setosa        50
Iris-versicolor    50
Iris-virginica     50
Name: Species, dtype: int64
```

[29]:
```
df.isnull().sum()
```

[29]:
```
SepalLengthCm    0
SepalWidthCm     0
PetalLengthCm    0
PetalWidthCm     0
Species          0
dtype: int64
```

[30]:
```
df["SepalLengthCm"].hist()
```

[30]:
```
<AxesSubplot: >
```



Simple 0 1 Python 3 (ipykernel) | Idle

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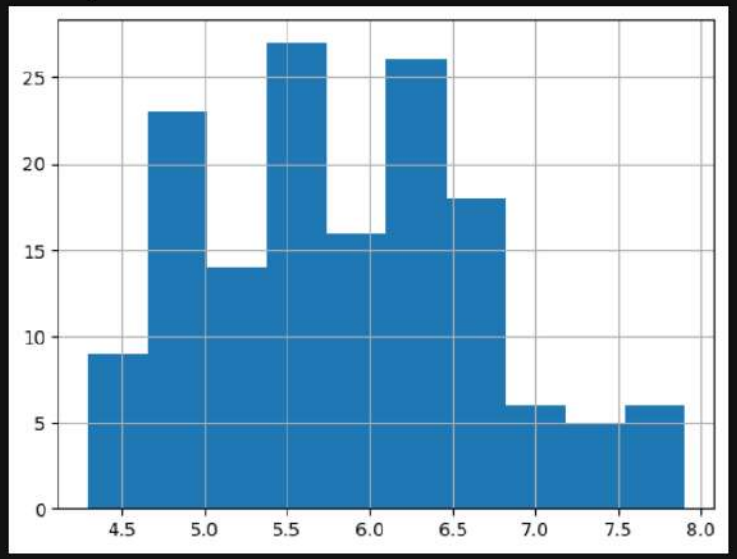
pineapple.ipynb | IRIS.csv

Code | Python 3 (pykernel)

```
PetalLengthCm    0
PetalWidthCm     0
Species          0
dtype: int64
```

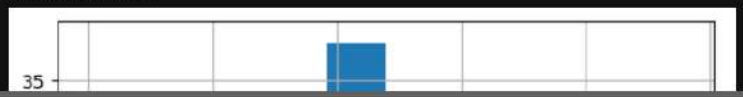
[30]:
```
df["SepalLengthCm"].hist()
```

[30]: <AxesSubplot: >



[31]:
```
df["SepalWidthCm"].hist()
```

[31]: <AxesSubplot: >



Simple 0 1 Python 3 (ipykernel) | Idle Mode: Command Ln 5, Col 10 pineapple.ipynb

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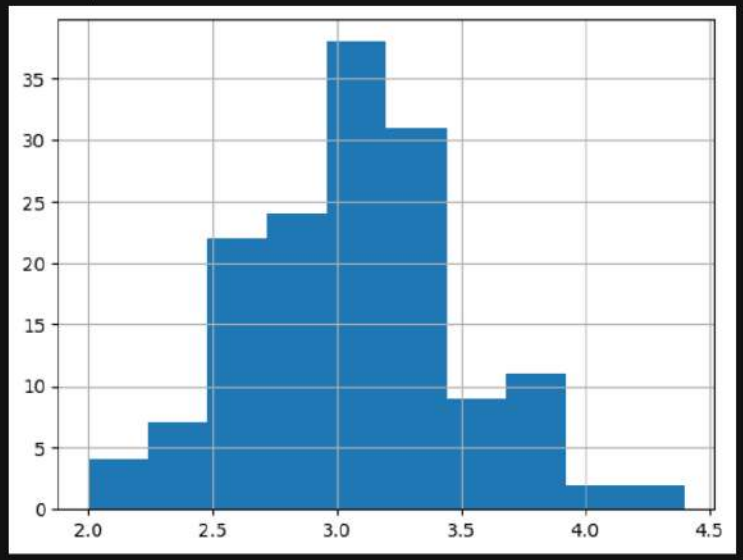
pineapple.ipynb | IRIS.csv

Code | Python 3 (pykernel)

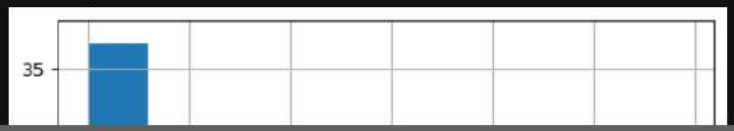
[31]:
```
df["SepalWidthCm"].hist()
```

[31]: <AxesSubplot: >



[32]:
```
df["PetalLengthCm"].hist()
```

[32]: <AxesSubplot: >



Simple 0 1 Python 3 (ipykernel) | Idle Mode: Command Ln 5, Col 10 pineapple.ipynb

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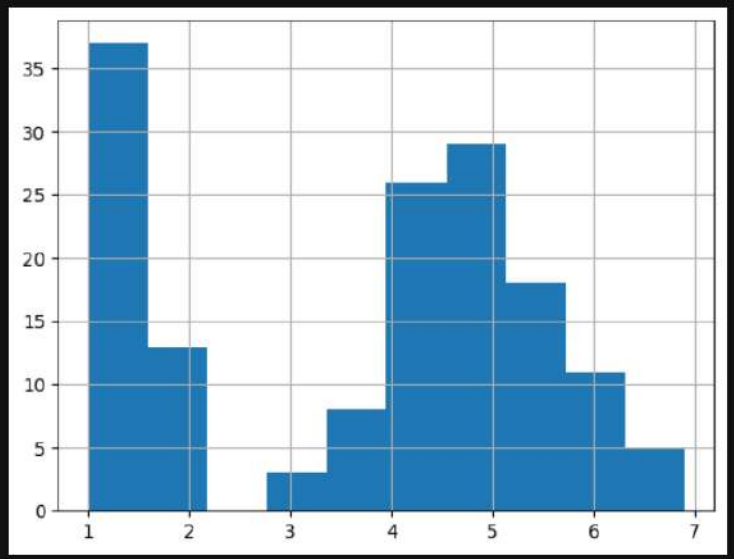
pineapple.ipynb | IRIS.csv

Code | Python 3 (pykernel)

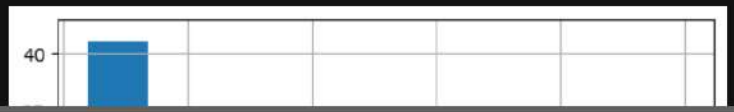
[32]:
```
df["PetalLengthCm"].hist()
```

[32]: <AxesSubplot: >



[33]:
```
df["PetalWidthCm"].hist()
```

[33]: <AxesSubplot: >



Simple 0 1 Python 3 (ipykernel) | Idle Mode: Command Ln 5, Col 10 pineapple.ipynb

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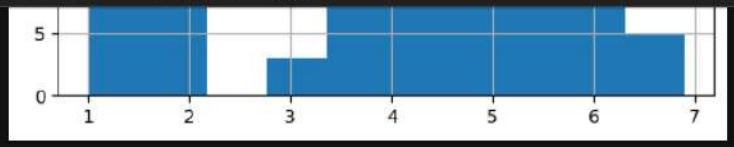
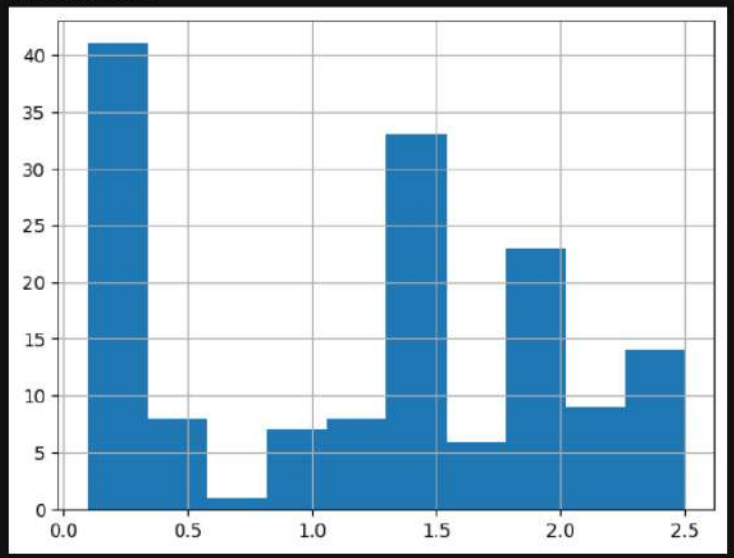
pineapple.ipynb | IRIS.csv

Code | Python 3 (pykernel)



[33]:
```
df["PetalWidthCm"].hist()
```

[33]: <AxesSubplot: >



[34]:
```
colours = ['red', 'green', 'purple']
species = ['Iris-virginica','Iris-versicolor','Iris-setosa']
```

[35]:
```
for i in range(3):
```

Simple 0 1 Python 3 (ipykernel) | Idle Mode: Command Ln 5, Col 10 pineapple.ipynb

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pineapple.ipynb | IRIS.csv

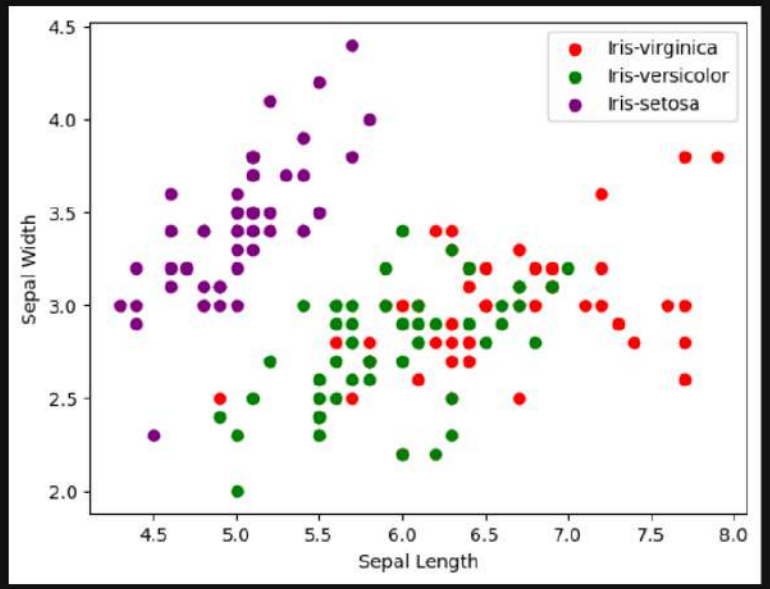
Code | Python 3 (pykernel)

0.0 0.5 1.0 1.5 2.0 2.5

[34]:
```
colours = ['red', 'green', 'purple']
species = ['Iris-virginica','Iris-versicolor','Iris-setosa']
```

[35]:
```
for i in range(3):
    x = df[df['Species'] == species[i]]
    plt.scatter(x['SepalLengthCm'], x['SepalWidthCm'], c = colours[i], label=species[i])
plt.xlabel("Sepal Length")
plt.ylabel("Sepal Width")
plt.legend()
```

[35]: <matplotlib.legend.Legend at 0x7f34db03b6a0>



Simple 0 1 Python 3 (ipykernel) | Idle Mode: Command Ln 5, Col 10 pineapple.ipynb

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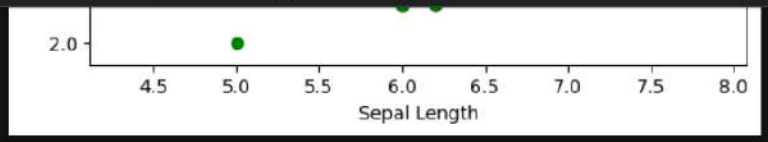
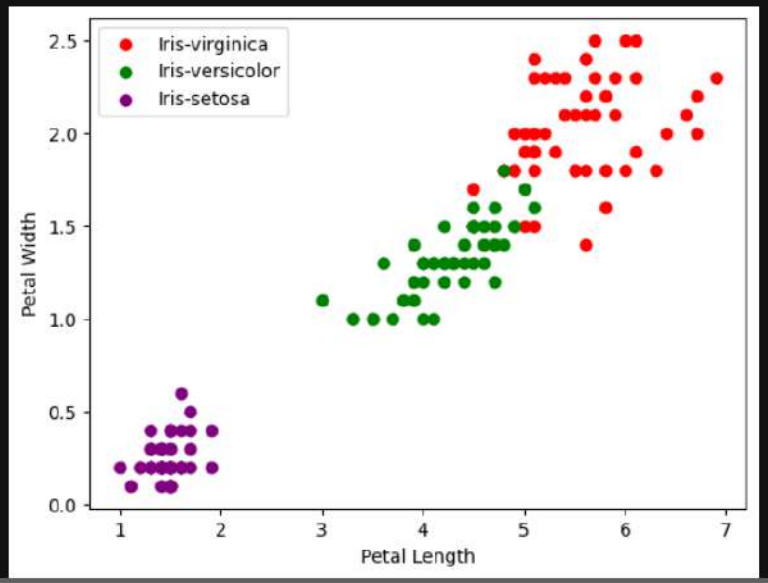
pineapple.ipynb | IRIS.csv

Code | Python 3 (pykernel)



[36]:
```
for i in range(3):
    x = df[df['Species'] == species[i]]
    plt.scatter(x['PetalLengthCm'], x['PetalWidthCm'], c = colours[i], label=species[i])
plt.xlabel("Petal Length")
plt.ylabel("Petal Width")
plt.legend()
```

[36]: <matplotlib.legend.Legend at 0x7f34daecf220>



Simple | 0 | 1 | Python 3 (ipykernel) | Idle | Mode: Command | Ln 5, Col 10 | pineapple.ipynb

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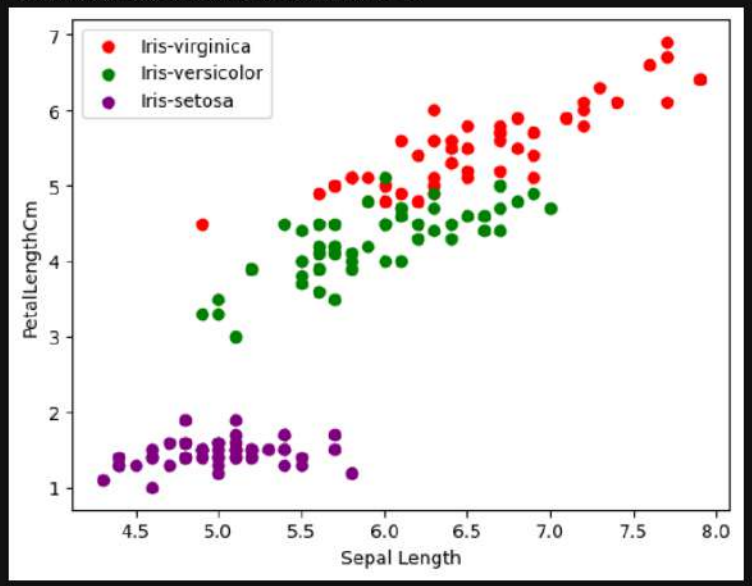
pineapple.ipynb | IRIS.csv

Code | Python 3 (pykernel)

[37]:
```
for i in range(3):
    x = df[df['Species'] == species[i]]
    plt.scatter(x['SepalLengthCm'], x['PetalLengthCm'], c = colours[i], label=species[i])
plt.xlabel("Sepal Length")
plt.ylabel("PetalLengthCm")
plt.legend()
```

[37]: <matplotlib.legend.Legend at 0x7f34daf5b940>



[38]:
```
for i in range(3):
    x = df[df['Species'] == species[i]]
    plt.scatter(x['SepalWidthCm'], x['PetalWidthCm'], c = colours[i], label=species[i])
plt.xlabel("Sepal Width")
```

Simple 0 1 Python 3 (ipykernel) | Idle Mode: Command Ln 5, Col 10 pineapple.ipynb

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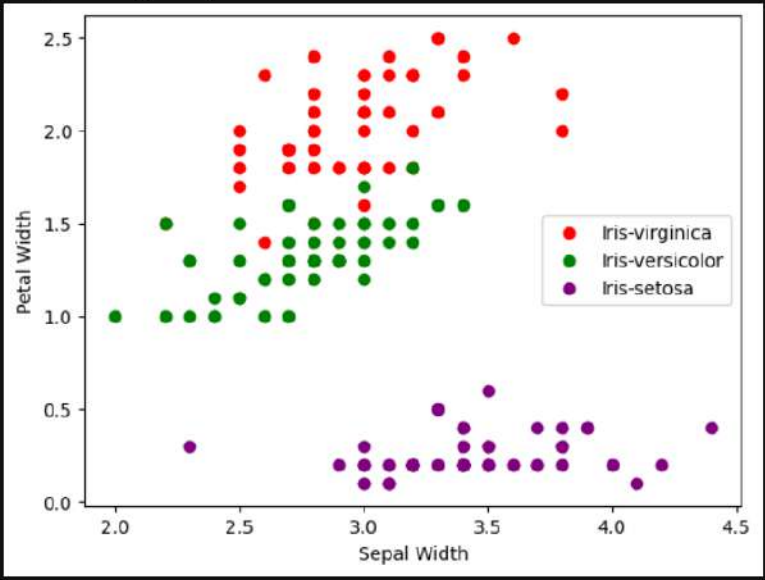
Code | Python 3 (pykernel)

Sepal Length

[38]:
```
for i in range(3):
    x = df[df['Species'] == species[i]]
    plt.scatter(x['SepalWidthCm'], x['PetalWidthCm'], c = colours[i], label=species[i])
plt.xlabel("Sepal Width")
plt.ylabel("Petal Width")
plt.legend()
```

[38]: <matplotlib.legend.Legend at 0x7f34dadf1ea0>



[83]:
```
corr = df.corr()
fig, ax = plt.subplots(figsize=(6,6))
sns.heatmap(corr, annot=True, ax=ax, cmap = 'coolwarm')
```

Simple | 0 | 1 | Python 3 (ipykernel) | Idle | Mode: Command | Ln 5, Col 10 | pineapple.ipynb

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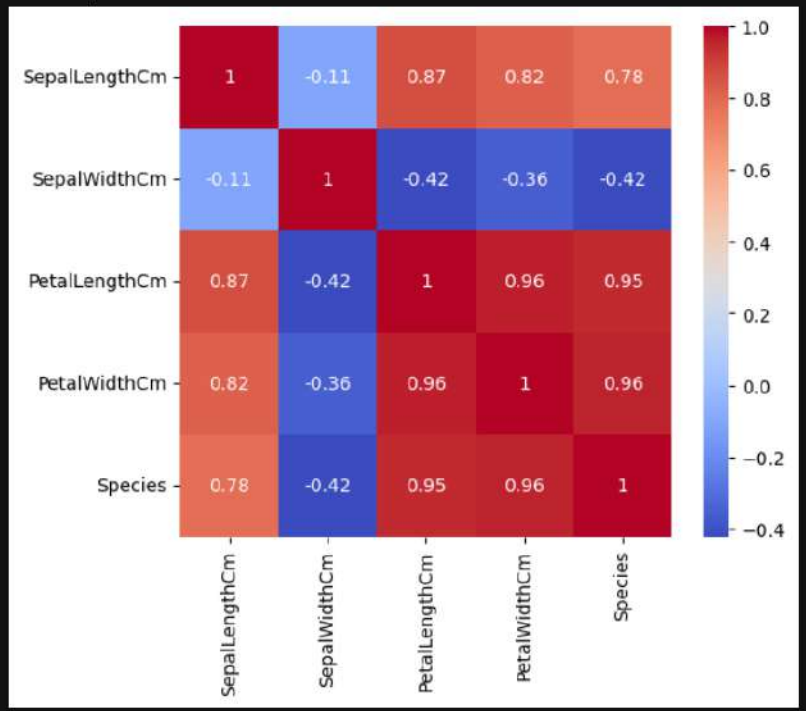
pineapple.ipynb IRIS.csv

Code Python 3 (pykernel)

[87]:
```
corr = df.corr()
fig, ax = plt.subplots(figsize=(6,5))
sns.heatmap(corr, annot=True, ax=ax, cmap = 'coolwarm')
```

[87]: <AxesSubplot: >



[84]:
```
df.corr()
```

Simple 0 1 Python 3 (ipykernel) | Idle Mode: Command Ln 1, Col 10 pineapple.ipynb

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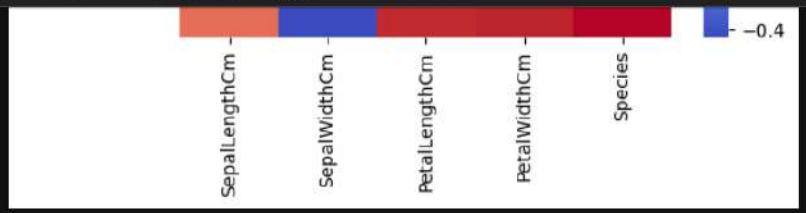
pineapple.ipynb | IRIS.csv

Code | Python 3 (pykernel)



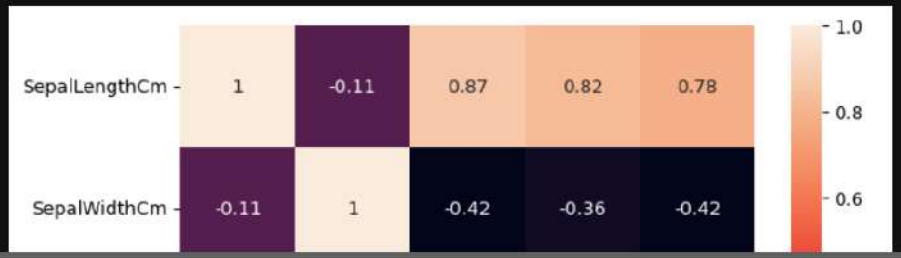
[84]:
```
df.corr()
```

[84]:

	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
SepalLengthCm	1.000000	-0.109369	0.871754	0.817954	0.782561
SepalWidthCm	-0.109369	1.000000	-0.420516	-0.356544	-0.419446
PetalLengthCm	0.871754	-0.420516	1.000000	0.962757	0.949043
PetalWidthCm	0.817954	-0.356544	0.962757	1.000000	0.956464
Species	0.782561	-0.419446	0.949043	0.956464	1.000000

[89]:
```
corr = df.corr()
fig,ax = plt.subplots(figsize=(7,6))
sns.heatmap(corr,annot=True)
```

[89]: <AxesSubplot: >



Simple | 0 | 1 | Python 3 (ipykernel) | Idle | Mode: Command | Ln 2, Col 20 | pineapple.ipynb

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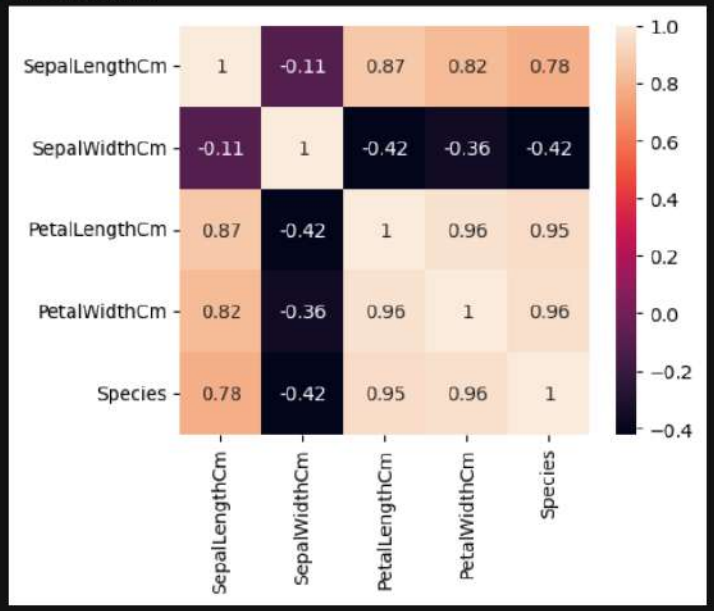
pineapple.ipynb | IRIS.csv

Code | Python 3 (pykernel)

[91]:
```
corr = df.corr()
fig,ax = plt.subplots(figsize=(5,4))
sns.heatmap(corr,annot=True)
```

[91]: <AxesSubplot: >



[45]:
```
from sklearn.preprocessing import LabelEncoder
le = LabelEncoder()
```

[56]:
```
df["Species"] = le.fit_transform(df["Species"])
df.head()
```

Simple 0 1 Python 3 (ipykernel) | Idle Mode: Command Ln 2, Col 35 pineapple.ipynb

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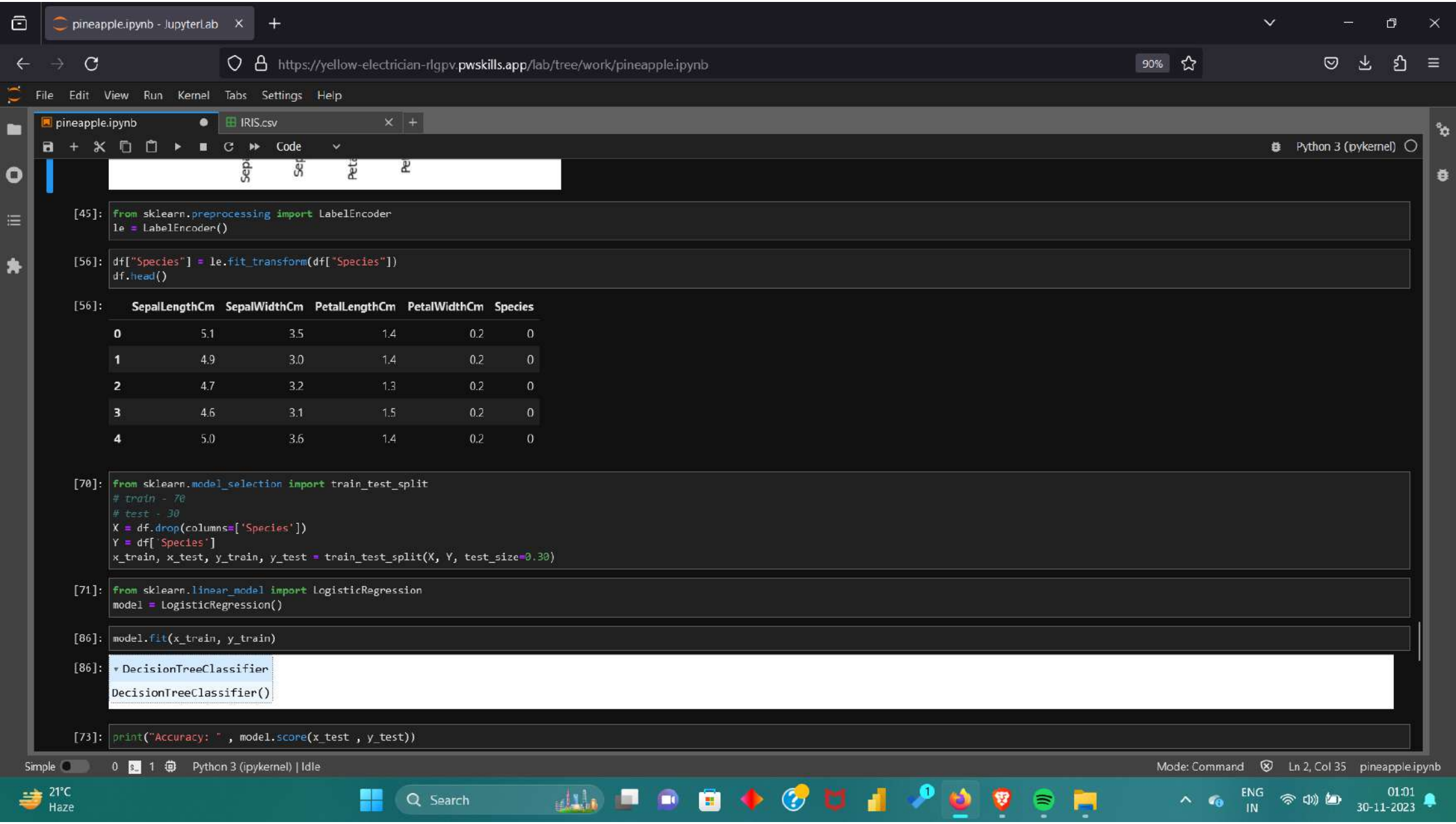
pineapple.ipynb - JupyterLab
https://yellow-electrician-rlgpv.pwskills.app/lab/tree/work/pineapple.ipynb
90%
File Edit View Run Kernel Tabs Settings Help
pineapple.ipynb
IRIS.csv
Code
Python 3 (pykernel)
[45]:
from sklearn.preprocessing import LabelEncoder
le = LabelEncoder()
[56]:
df["Species"] = le.fit_transform(df["Species"])
df.head()
[56]:
SepalLengthCm SepalWidthCm PetalLengthCm PetalWidthCm Species
0 5.1 3.5 1.4 0.2 0
1 4.9 3.0 1.4 0.2 0
2 4.7 3.2 1.3 0.2 0
3 4.6 3.1 1.5 0.2 0
4 5.0 3.6 1.4 0.2 0
[70]:
from sklearn.model_selection import train_test_split
# train - 70
# test - 30
X = df.drop(columns=['Species'])
Y = df['Species']
x_train, x_test, y_train, y_test = train_test_split(X, Y, test_size=0.30)
[71]:
from sklearn.linear_model import LogisticRegression
model = LogisticRegression()
[86]:
model.fit(x_train, y_train)
[86]:
DecisionTreeClassifier
DecisionTreeClassifier()
[73]:
print("Accuracy: " , model.score(x_test , y_test))
Simple 0 1 Python 3 (ipykernel) | Idle
Mode: Command Ln 2, Col 35 pineapple.ipynb
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File Edit View Run Kernel Tabs Settings Help

pineapple.ipynb IRIS.csv

Code Python 3 (pykernel)

[73]:
```
print("Accuracy: " , model.score(x_test , y_test))
```
```
Accuracy:  0.9333333333333333
```

[74]:
```
print("Accuracy: ",model.score(x_test, y_test) * 100)
```
```
Accuracy:  93.33333333333333
```

[ ]:

[75]:
```
from sklearn.neighbors import KNeighborsClassifier
model = KNeighborsClassifier()
```

[76]:
```
model.fit(x_train, y_train)
```

[76]:
```
KNeighborsClassifier
KNeighborsClassifier()
```

[77]:
```
print("Accuracy: ",model.score(x_test, y_test) * 100)
```
```
Accuracy:  97.77777777777777
```

[78]:
```
from sklearn.tree import DecisionTreeClassifier
model = DecisionTreeClassifier()
```

[79]:
```
model.fit(x_train, y_train)
```

[79]:
```
DecisionTreeClassifier
DecisionTreeClassifier()
```

[80]:
```
print("Accuracy: ",model.score(x_test, y_test) * 100)
```
```
Accuracy:  95.55555555555556
```

[ ]:

Simple 0 1 Python 3 (ipykernel) | Idle Mode: Command Ln 2, Col 35 pineapple.ipynb

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