iristask

March 14, 2024

[1]:
```
import pandas as pd
```

[2]:
```
pd.__version__
```

[2]:
```
'2.1.4'
```

[4]:
```
from sklearn.datasets import load_iris
```

[6]:
```
iris=load_iris()
```

[7]:
```
iris_data=pd.
↪Series(["SepalLengthCm","SepalWidthCm","PatelLengthCm","PatelWidthCm","Species"])
```

[8]:
```
iris_data
```

[8]:
```
0    SepalLengthCm
1     SepalWidthCm
2    PatelLengthCm
3     PatelWidthCm
4          Species
dtype: object
```

[10]:
```
iris_data=pd.read_csv("iris.csv")
```

[11]:
```
iris_data.head(5)
```

[11]:

	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

[12]:
```
type(iris_data.values)
```

[12]:
```
numpy.ndarray
```

[14]:
```
import numpy as np
```

[15]:
```
sepal_length=np.array(iris_data['SepalLengthCm'])
```

[16]:
```
sepal_length[:5]
```

[16]:
```
array([5.1, 4.9, 4.7, 4.6, 5. ])
```

[17]:
```
iris_data
```

[17]:
```
       Id  SepalLengthCm  SepalWidthCm  PetalLengthCm  PetalWidthCm  \
0       1            5.1           3.5            1.4           0.2
1       2            4.9           3.0            1.4           0.2
2       3            4.7           3.2            1.3           0.2
3       4            4.6           3.1            1.5           0.2
4       5            5.0           3.6            1.4           0.2
..    ...            ...           ...            ...           ...
145   146            6.7           3.0            5.2           2.3
146   147            6.3           2.5            5.0           1.9
147   148            6.5           3.0            5.2           2.0
148   149            6.2           3.4            5.4           2.3
149   150            5.9           3.0            5.1           1.8

            Species
0       Iris-setosa
1       Iris-setosa
2       Iris-setosa
3       Iris-setosa
4       Iris-setosa
..              ...
145  Iris-virginica
146  Iris-virginica
147  Iris-virginica
148  Iris-virginica
149  Iris-virginica

[150 rows x 6 columns]
```

[19]:
```
iris_data.Species
```

[19]:
```
0         Iris-setosa
1         Iris-setosa
2         Iris-setosa
3         Iris-setosa
4         Iris-setosa
             ...
145    Iris-virginica
```

```
146    Iris-virginica
147    Iris-virginica
148    Iris-virginica
149    Iris-virginica
Name: Species, Length: 150, dtype: object
```

[23]:
```
sepal_lengthSpecies=np.array([iris_data['Species'],iris_data['SepalLengthCm']])
```

[26]:
```
sepal_lengthSpecies=sepal_length
```

[27]:
```
sepal_lengthSpecies[:5]
```

[27]:
```
array([5.1, 4.9, 4.7, 4.6, 5. ])
```

[28]:
```
sepal_lengthSpecies[:10]
```

[28]:
```
array([5.1, 4.9, 4.7, 4.6, 5. , 5.4, 4.6, 5. , 4.4, 4.9])
```

[29]:
```
sepal_lengthSpecies.shape
```

[29]:
```
(150,)
```

[31]:
```
sepal_length.shape
```

[31]:
```
(150,)
```

[32]:
```
sepal_length.dtype
```

[32]:
```
dtype('float64')
```

[34]:
```
sepal_length[0]
```

[34]:
```
5.1
```

[35]:
```
sepal_length[10]
```

[35]:
```
5.4
```

[36]:
```
sepal_length[2:]
```

[36]:
```
array([4.7, 4.6, 5. , 5.4, 4.6, 5. , 4.4, 4.9, 5.4, 4.8, 4.8, 4.3, 5.8,
       5.7, 5.4, 5.1, 5.7, 5.1, 5.4, 5.1, 4.6, 5.1, 4.8, 5. , 5. , 5.2,
       5.2, 4.7, 4.8, 5.4, 5.2, 5.5, 4.9, 5. , 5.5, 4.9, 4.4, 5.1, 5. ,
       4.5, 4.4, 5. , 5.1, 4.8, 5.1, 4.6, 5.3, 5. , 7. , 6.4, 6.9, 5.5,
       6.5, 5.7, 6.3, 4.9, 6.6, 5.2, 5. , 5.9, 6. , 6.1, 5.6, 6.7, 5.6,
       5.8, 6.2, 5.6, 5.9, 6.1, 6.3, 6.1, 6.4, 6.6, 6.8, 6.7, 6. , 5.7,
       5.5, 5.5, 5.8, 6. , 5.4, 6. , 6.7, 6.3, 5.6, 5.5, 5.5, 6.1, 5.8,
```

```
       5. , 5.6, 5.7, 5.7, 6.2, 5.1, 5.7, 6.3, 5.8, 7.1, 6.3, 6.5, 7.6,
       4.9, 7.3, 6.7, 7.2, 6.5, 6.4, 6.8, 5.7, 5.8, 6.4, 6.5, 7.7, 7.7,
       6. , 6.9, 5.6, 7.7, 6.3, 6.7, 7.2, 6.2, 6.1, 6.4, 7.2, 7.4, 7.9,
       6.4, 6.3, 6.1, 7.7, 6.3, 6.4, 6. , 6.9, 6.7, 6.9, 5.8, 6.8, 6.7,
       6.7, 6.3, 6.5, 6.2, 5.9])
```

[37]:
```
sepal_length[:2]
```

[37]:
```
array([5.1, 4.9])
```

[38]:
```
print(sepal_length.ndim)
```

```
1
```

[40]:
```
sepal_width=np.array([iris_data['SepalWidthCm']])
```

[41]:
```
sepal_width
```

[41]:
```
array([[3.5, 3. , 3.2, 3.1, 3.6, 3.9, 3.4, 3.4, 2.9, 3.1, 3.7, 3.4, 3. ,
        3. , 4. , 4.4, 3.9, 3.5, 3.8, 3.8, 3.4, 3.7, 3.6, 3.3, 3.4, 3. ,
        3.4, 3.5, 3.4, 3.2, 3.1, 3.4, 4.1, 4.2, 3.1, 3.2, 3.5, 3.1, 3. ,
        3.4, 3.5, 2.3, 3.2, 3.5, 3.8, 3. , 3.8, 3.2, 3.7, 3.3, 3.2, 3.2,
        3.1, 2.3, 2.8, 2.8, 3.3, 2.4, 2.9, 2.7, 2. , 3. , 2.2, 2.9, 2.9,
        3.1, 3. , 2.7, 2.2, 2.5, 3.2, 2.8, 2.5, 2.8, 2.9, 3. , 2.8, 3. ,
        2.9, 2.6, 2.4, 2.4, 2.7, 2.7, 3. , 3.4, 3.1, 2.3, 3. , 2.5, 2.6,
        3. , 2.6, 2.3, 2.7, 3. , 2.9, 2.9, 2.5, 2.8, 3.3, 2.7, 3. , 2.9,
        3. , 3. , 2.5, 2.9, 2.5, 3.6, 3.2, 2.7, 3. , 2.5, 2.8, 3.2, 3. ,
        3.8, 2.6, 2.2, 3.2, 2.8, 2.8, 2.7, 3.3, 3.2, 2.8, 3. , 2.8, 3. ,
        2.8, 3.8, 2.8, 2.8, 2.6, 3. , 3.4, 3.1, 3. , 3.1, 3.1, 3.1, 2.7,
        3.2, 3.3, 3. , 2.5, 3. , 3.4, 3. ]])
```

[44]:
```
sepal_width.shape
```

[44]:
```
(1, 150)
```

[45]:
```
sepal_width.dtype
```

[45]:
```
dtype('float64')
```

[48]:
```
sepal_widthConv=sepal_widthConv.astype('i')
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[48], line 1
----> 1 sepal_widthConv=sepal_widthConv.astype('i')
```

```
NameError: name 'sepal_widthConv' is not defined
```

[50]:
```
sepal_widthconv=sepal_width.astype('i')
```

[51]:
```
sepal_widthconv
```

[51]:
```
array([[3, 3, 3, 3, 3, 3, 3, 3, 2, 3, 3, 3, 3, 3, 4, 4, 3, 3, 3, 3, 3, 3,
        3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 4, 4, 3, 3, 3, 3, 3, 3, 3, 2, 3, 3,
        3, 3, 3, 3, 3, 3, 3, 3, 3, 2, 2, 2, 3, 2, 2, 2, 2, 3, 2, 2, 2, 3,
        3, 2, 2, 2, 3, 2, 2, 2, 2, 3, 2, 3, 2, 2, 2, 2, 2, 2, 3, 3, 3, 2,
        3, 2, 2, 3, 2, 2, 2, 3, 2, 2, 2, 2, 3, 2, 3, 2, 3, 3, 2, 2, 2, 3,
        3, 2, 3, 2, 2, 3, 3, 3, 2, 2, 3, 2, 2, 2, 3, 3, 2, 3, 2, 3, 2, 3,
        2, 2, 2, 3, 3, 3, 3, 3, 3, 3, 2, 3, 3, 3, 2, 3, 3, 3]],
      dtype=int32)
```

[52]:
```
sepal_widthconv=sepal_width
```

[53]:
```
sepal_width
```

[53]:
```
array([[3.5, 3. , 3.2, 3.1, 3.6, 3.9, 3.4, 3.4, 2.9, 3.1, 3.7, 3.4, 3. ,
        3. , 4. , 4.4, 3.9, 3.5, 3.8, 3.8, 3.4, 3.7, 3.6, 3.3, 3.4, 3. ,
        3.4, 3.5, 3.4, 3.2, 3.1, 3.4, 4.1, 4.2, 3.1, 3.2, 3.5, 3.1, 3. ,
        3.4, 3.5, 2.3, 3.2, 3.5, 3.8, 3. , 3.8, 3.2, 3.7, 3.3, 3.2, 3.2,
        3.1, 2.3, 2.8, 2.8, 3.3, 2.4, 2.9, 2.7, 2. , 3. , 2.2, 2.9, 2.9,
        3.1, 3. , 2.7, 2.2, 2.5, 3.2, 2.8, 2.5, 2.8, 2.9, 3. , 2.8, 3. ,
        2.9, 2.6, 2.4, 2.4, 2.7, 2.7, 3. , 3.4, 3.1, 2.3, 3. , 2.5, 2.6,
        3. , 2.6, 2.3, 2.7, 3. , 2.9, 2.9, 2.5, 2.8, 3.3, 2.7, 3. , 2.9,
        3. , 3. , 2.5, 2.9, 2.5, 3.6, 3.2, 2.7, 3. , 2.5, 2.8, 3.2, 3. ,
        3.8, 2.6, 2.2, 3.2, 2.8, 2.8, 2.7, 3.3, 3.2, 2.8, 3. , 2.8, 3. ,
        2.8, 3.8, 2.8, 2.8, 2.6, 3. , 3.4, 3.1, 3. , 3.1, 3.1, 3.1, 2.7,
        3.2, 3.3, 3. , 2.5, 3. , 3.4, 3. ]])
```

[54]:
```
sepal_widthconv
```

[54]:
```
array([[3.5, 3. , 3.2, 3.1, 3.6, 3.9, 3.4, 3.4, 2.9, 3.1, 3.7, 3.4, 3. ,
        3. , 4. , 4.4, 3.9, 3.5, 3.8, 3.8, 3.4, 3.7, 3.6, 3.3, 3.4, 3. ,
        3.4, 3.5, 3.4, 3.2, 3.1, 3.4, 4.1, 4.2, 3.1, 3.2, 3.5, 3.1, 3. ,
        3.4, 3.5, 2.3, 3.2, 3.5, 3.8, 3. , 3.8, 3.2, 3.7, 3.3, 3.2, 3.2,
        3.1, 2.3, 2.8, 2.8, 3.3, 2.4, 2.9, 2.7, 2. , 3. , 2.2, 2.9, 2.9,
        3.1, 3. , 2.7, 2.2, 2.5, 3.2, 2.8, 2.5, 2.8, 2.9, 3. , 2.8, 3. ,
        2.9, 2.6, 2.4, 2.4, 2.7, 2.7, 3. , 3.4, 3.1, 2.3, 3. , 2.5, 2.6,
        3. , 2.6, 2.3, 2.7, 3. , 2.9, 2.9, 2.5, 2.8, 3.3, 2.7, 3. , 2.9,
        3. , 3. , 2.5, 2.9, 2.5, 3.6, 3.2, 2.7, 3. , 2.5, 2.8, 3.2, 3. ,
        3.8, 2.6, 2.2, 3.2, 2.8, 2.8, 2.7, 3.3, 3.2, 2.8, 3. , 2.8, 3. ,
        2.8, 3.8, 2.8, 2.8, 2.6, 3. , 3.4, 3.1, 3. , 3.1, 3.1, 3.1, 2.7,
        3.2, 3.3, 3. , 2.5, 3. , 3.4, 3. ]])
```

[55]:
```
import pandas as pd
```

[56]:
```
df=pd.DataFrame((sepal_length)(sepal_width))
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[56], line 1
----> 1 df=pd.DataFrame((sepal_length)(sepal_width))

TypeError: 'numpy.ndarray' object is not callable
```

[57]:
```
df=pd.DataFrame(sepal_width)
```

[58]:
```
df
```

[58]:
```
   0    1    2    3    4    5    6    7    8    9    …  140  141  142  143  \
0  3.5  3.0  3.2  3.1  3.6  3.9  3.4  3.4  2.9  3.1  …  3.1  3.1  2.7  3.2

   144  145  146  147  148  149
0  3.3  3.0  2.5  3.0  3.4  3.0

[1 rows x 150 columns]
```

[59]:
```
dff=pd.DataFrame(sepal_length)
```

[60]:
```
dff
```

[60]:
```
       0
0    5.1
1    4.9
2    4.7
3    4.6
4    5.0
..   …
145  6.7
146  6.3
147  6.5
148  6.2
149  5.9

[150 rows x 1 columns]
```

[65]:
```
import pandas as pd
import matplotlib.pyplot as plt
from sklearn import preprocessing
import seaborn as sns
```

```
iris = pd.read_csv("iris.csv")
print(iris.head())
```

```
   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
```

[67]:
```
sns.scatterplot(data=iris, x='SepalLengthCm',
                                y='SepalWidthCm')
plt.plot()
```

[67]: []