```
import pandas as pd
import seaborn as sns
```

```
dt = pd.read_csv('/content/Iris.csv')
```

dt

| 3      | 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 ro | ws × | 6 columns     |              |               |              |                |

Generate code with dt

( View recommended plots

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## dt.describe()

Next steps: (

| <b>→</b> |       | Id         | SepalLengthCm | SepalWidthCm | PetalLengthCm | PetalWidthCm |
|----------|-------|------------|---------------|--------------|---------------|--------------|
|          | count | 150.000000 | 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      | 0.100000     |
|          | 25%   | 38.250000  | 5.100000      | 2.800000     | 1.600000      | 0.300000     |
|          | 50%   | 75.500000  | 5.800000      | 3.000000     | 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     |
|          |       |            |               |              |               |              |

dt.info()

<class 'pandas.core.frame.DataFrame'>
 RangeIndex: 150 entries, 0 to 149

| Data                  | COTUMNIS (LOCAL | e corumns):      |         |  |  |  |
|-----------------------|-----------------|------------------|---------|--|--|--|
| #                     | Column          | Non-Null Count   | Dtype   |  |  |  |
|                       |                 |                  |         |  |  |  |
| 0                     | Id              | 150 non-null     | int64   |  |  |  |
| 1                     | SepalLengthCm   | 150 non-null     | float64 |  |  |  |
| 2                     | SepalWidthCm    | 150 non-null     | float64 |  |  |  |
| 3                     | PetalLengthCm   | 150 non-null     | float64 |  |  |  |
| 4                     | PetalWidthCm    | 150 non-null     | float64 |  |  |  |
| 5                     | Species         | 150 non-null     | object  |  |  |  |
| dtyp                  | es: float64(4), | int64(1), object | t(1)    |  |  |  |
| memory usage: 7.2+ KB |                 |                  |         |  |  |  |
|                       |                 |                  |         |  |  |  |

dt['Species'].unique()

```
array(['Iris-setosa', 'Iris-versicolor', 'Iris-virginica'], dtype=object)

from sklearn.preprocessing import LabelEncoder

1 = LabelEncoder()

dt['Species'] = 1.fit_transform(dt['Species'])

dt['Species'].unique()

array([0, 1, 2])
```

dt

| <b>→</b> |        | Id   | SepalLengthCm | SepalWidthCm | PetalLengthCm | PetalWidthCm | Species |     |
|----------|--------|------|---------------|--------------|---------------|--------------|---------|-----|
|          | 0      | 1    | 5.1           | 3.5          | 1.4           | 0.2          | 0       | 11. |
|          | 1      | 2    | 4.9           | 3.0          | 1.4           | 0.2          | 0       | +/  |
|          | 2      | 3    | 4.7           | 3.2          | 1.3           | 0.2          | 0       | -   |
|          | 3      | 4    | 4.6           | 3.1          | 1.5           | 0.2          | 0       |     |
|          | 4      | 5    | 5.0           | 3.6          | 1.4           | 0.2          | 0       |     |
|          |        |      |               |              |               |              |         |     |
|          | 145    | 146  | 6.7           | 3.0          | 5.2           | 2.3          | 2       |     |
|          | 146    | 147  | 6.3           | 2.5          | 5.0           | 1.9          | 2       |     |
|          | 147    | 148  | 6.5           | 3.0          | 5.2           | 2.0          | 2       |     |
|          | 148    | 149  | 6.2           | 3.4          | 5.4           | 2.3          | 2       |     |
|          | 149    | 150  | 5.9           | 3.0          | 5.1           | 1.8          | 2       |     |
|          | 150 rc | ws × | 6 columns     |              |               |              |         |     |

Next steps: Generate code with dt View recommended plots New interactive sheet

from sklearn.model\_selection import train\_test\_split

```
x = dt.drop(['Species','Id'],axis = 1)
y = dt['Species']
```

х

| <b>→</b> |        | SepalLengthCm   | SepalWidthCm | PetalLengthCm | PetalWidthCm |     |
|----------|--------|-----------------|--------------|---------------|--------------|-----|
|          | 0      | 5.1             | 3.5          | 1.4           | 0.2          | ılı |
|          | 1      | 4.9             | 3.0          | 1.4           | 0.2          | +// |
|          | 2      | 4.7             | 3.2          | 1.3           | 0.2          |     |
|          | 3      | 4.6             | 3.1          | 1.5           | 0.2          |     |
|          | 4      | 5.0             | 3.6          | 1.4           | 0.2          |     |
|          |        |                 |              |               |              |     |
|          | 145    | 6.7             | 3.0          | 5.2           | 2.3          |     |
|          | 146    | 6.3             | 2.5          | 5.0           | 1.9          |     |
|          | 147    | 6.5             | 3.0          | 5.2           | 2.0          |     |
|          | 148    | 6.2             | 3.4          | 5.4           | 2.3          |     |
|          | 149    | 5.9             | 3.0          | 5.1           | 1.8          |     |
|          | 150 rc | ows × 4 columns |              |               |              |     |

Next steps: Generate code with x View recommended plots New interactive sheet

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| <b>→</b> |     | Species |
|----------|-----|---------|
|          | 0   | 0       |
|          | 1   | 0       |
|          | 2   | 0       |
|          | 3   | 0       |
|          | 4   | 0       |
|          |     |         |
|          | 145 | 2       |
|          | 146 | 2       |
|          | 147 | 2       |
|          | 148 | 2       |
|          | 149 | 2       |
|          |     |         |

150 rows × 1 columns

dtvpe: int64

dt.corr()

| <b>→</b> |               | Id        | SepalLengthCm | SepalWidthCm | PetalLengthCm | PetalWidthCm | Species   |
|----------|---------------|-----------|---------------|--------------|---------------|--------------|-----------|
|          | ld            | 1.000000  | 0.716676      | -0.397729    | 0.882747      | 0.899759     | 0.942830  |
|          | SepalLengthCm | 0.716676  | 1.000000      | -0.109369    | 0.871754      | 0.817954     | 0.782561  |
|          | SepalWidthCm  | -0.397729 | -0.109369     | 1.000000     | -0.420516     | -0.356544    | -0.419446 |
|          | PetalLengthCm | 0.882747  | 0.871754      | -0.420516    | 1.000000      | 0.962757     | 0.949043  |
|          | PetalWidthCm  | 0.899759  | 0.817954      | -0.356544    | 0.962757      | 1.000000     | 0.956464  |
|          | Species       | 0.942830  | 0.782561      | -0.419446    | 0.949043      | 0.956464     | 1.000000  |
|          | 4             |           |               |              |               |              |           |

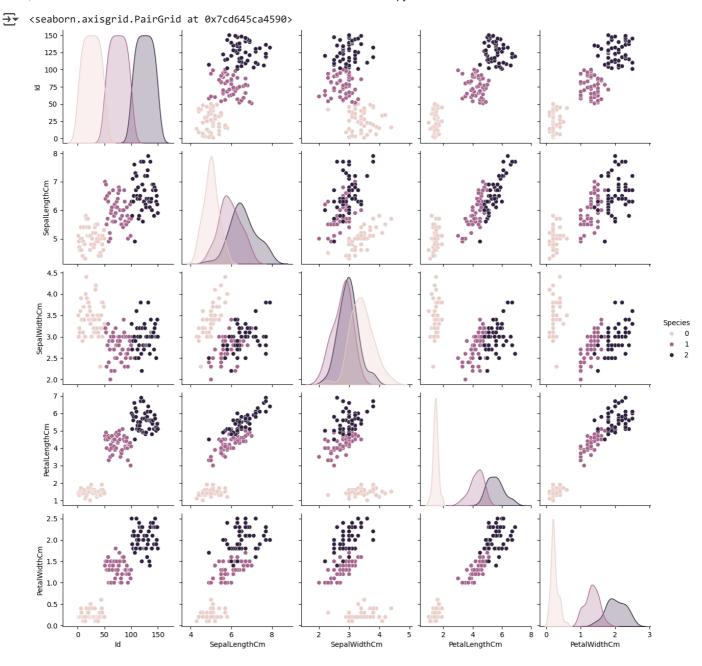
xtrain, xtest, ytrain, ytest = train\_test\_split(x,y, test\_size=0.25)

xtest

| 101         5.8         2.7         5.1         1.9           34         4.9         3.1         1.5         0.1           37         4.9         3.1         1.5         0.1           123         6.3         2.7         4.9         1.8           21         5.1         3.7         1.5         0.4           87         6.3         2.3         4.4         1.3           61         5.9         3.0         4.2         1.5           59         5.2         2.7         3.9         1.4           124         6.7         3.3         5.7         2.1           107         7.3         2.9         6.3         1.8           1         4.9         3.0         1.4         0.2           60         5.0         2.0         3.5         1.0           18         5.7         3.8         1.7         0.3           135         7.7         3.0         6.1         2.3           125         7.2         3.2         6.0         1.8           78         6.0         2.9         4.5         1.5           132         6.4         2.8 |     | SepalLengthCm | SepalWidthCm | PetalLengthCm | PetalWidthCm |
|--|-----|---------------|--------------|---------------|--------------|
| 37       4.9       3.1       1.5       0.1         123       6.3       2.7       4.9       1.8         21       5.1       3.7       1.5       0.4         87       6.3       2.3       4.4       1.3         61       5.9       3.0       4.2       1.5         106       4.9       2.5       4.5       1.7         59       5.2       2.7       3.9       1.4         124       6.7       3.3       5.7       2.1         107       7.3       2.9       6.3       1.8         1       4.9       3.0       1.4       0.2         60       5.0       2.0       3.5       1.0         18       5.7       3.8       1.7       0.3         135       7.7       3.0       6.1       2.3         125       7.2       3.2       6.0       1.8         78       6.0       2.9       4.5       1.5         132       6.4       2.8       5.6       2.2         15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6  | 10  | <b>1</b> 5.8  | 2.7          | 5.1           | 1.9          |
| 123       6.3       2.7       4.9       1.8         21       5.1       3.7       1.5       0.4         87       6.3       2.3       4.4       1.3         61       5.9       3.0       4.2       1.5         106       4.9       2.5       4.5       1.7         59       5.2       2.7       3.9       1.4         124       6.7       3.3       5.7       2.1         107       7.3       2.9       6.3       1.8         1       4.9       3.0       1.4       0.2         60       5.0       2.0       3.5       1.0         18       5.7       3.8       1.7       0.3         135       7.7       3.0       6.1       2.3         125       7.2       3.2       6.0       1.8         78       6.0       2.9       4.5       1.5         132       6.4       2.8       5.6       2.2         15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2  | 34  | 4.9           | 3.1          | 1.5           | 0.1          |
| 21       5.1       3.7       1.5       0.4         87       6.3       2.3       4.4       1.3         61       5.9       3.0       4.2       1.5         106       4.9       2.5       4.5       1.7         59       5.2       2.7       3.9       1.4         124       6.7       3.3       5.7       2.1         107       7.3       2.9       6.3       1.8         1       4.9       3.0       1.4       0.2         60       5.0       2.0       3.5       1.0         18       5.7       3.8       1.7       0.3         135       7.7       3.0       6.1       2.3         125       7.2       3.2       6.0       1.8         78       6.0       2.9       4.5       1.5         132       6.4       2.8       5.6       2.2         15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3     <   | 37  | 4.9           | 3.1          | 1.5           | 0.1          |
| 87       6.3       2.3       4.4       1.3         61       5.9       3.0       4.2       1.5         106       4.9       2.5       4.5       1.7         59       5.2       2.7       3.9       1.4         124       6.7       3.3       5.7       2.1         107       7.3       2.9       6.3       1.8         1       4.9       3.0       1.4       0.2         60       5.0       2.0       3.5       1.0         18       5.7       3.8       1.7       0.3         135       7.7       3.0       6.1       2.3         125       7.2       3.2       6.0       1.8         78       6.0       2.9       4.5       1.5         132       6.4       2.8       5.6       2.2         15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2     <   | 12  | <b>3</b> 6.3  | 2.7          | 4.9           | 1.8          |
| 61       5.9       3.0       4.2       1.5         106       4.9       2.5       4.5       1.7         59       5.2       2.7       3.9       1.4         124       6.7       3.3       5.7       2.1         107       7.3       2.9       6.3       1.8         1       4.9       3.0       1.4       0.2         60       5.0       2.0       3.5       1.0         18       5.7       3.8       1.7       0.3         135       7.7       3.0       6.1       2.3         125       7.2       3.2       6.0       1.8         78       6.0       2.9       4.5       1.5         132       6.4       2.8       5.6       2.2         15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5     <   | 21  | 5.1           | 3.7          | 1.5           | 0.4          |
| 106       4.9       2.5       4.5       1.7         59       5.2       2.7       3.9       1.4         124       6.7       3.3       5.7       2.1         107       7.3       2.9       6.3       1.8         1       4.9       3.0       1.4       0.2         60       5.0       2.0       3.5       1.0         18       5.7       3.8       1.7       0.3         135       7.7       3.0       6.1       2.3         125       7.2       3.2       6.0       1.8         78       6.0       2.9       4.5       1.5         132       6.4       2.8       5.6       2.2         15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6     <   | 87  | 6.3           | 2.3          | 4.4           | 1.3          |
| 59       5.2       2.7       3.9       1.4         124       6.7       3.3       5.7       2.1         107       7.3       2.9       6.3       1.8         1       4.9       3.0       1.4       0.2         60       5.0       2.0       3.5       1.0         18       5.7       3.8       1.7       0.3         135       7.7       3.0       6.1       2.3         125       7.2       3.2       6.0       1.8         78       6.0       2.9       4.5       1.5         132       6.4       2.8       5.6       2.2         15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4     <   | 61  | 5.9           | 3.0          | 4.2           | 1.5          |
| 124       6.7       3.3       5.7       2.1         107       7.3       2.9       6.3       1.8         1       4.9       3.0       1.4       0.2         60       5.0       2.0       3.5       1.0         18       5.7       3.8       1.7       0.3         135       7.7       3.0       6.1       2.3         125       7.2       3.2       6.0       1.8         78       6.0       2.9       4.5       1.5         132       6.4       2.8       5.6       2.2         15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8  | 10  | <b>6</b> 4.9  | 2.5          | 4.5           | 1.7          |
| 107       7.3       2.9       6.3       1.8         1       4.9       3.0       1.4       0.2         60       5.0       2.0       3.5       1.0         18       5.7       3.8       1.7       0.3         135       7.7       3.0       6.1       2.3         125       7.2       3.2       6.0       1.8         78       6.0       2.9       4.5       1.5         132       6.4       2.8       5.6       2.2         15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2     <   | 59  | 5.2           | 2.7          | 3.9           | 1.4          |
| 1       4.9       3.0       1.4       0.2         60       5.0       2.0       3.5       1.0         18       5.7       3.8       1.7       0.3         135       7.7       3.0       6.1       2.3         125       7.2       3.2       6.0       1.8         78       6.0       2.9       4.5       1.5         132       6.4       2.8       5.6       2.2         15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2 <td>12</td> <td><b>4</b> 6.7</td> <td>3.3</td> <td>5.7</td> <td>2.1</td>                        | 12  | <b>4</b> 6.7  | 3.3          | 5.7           | 2.1          |
| 60       5.0       2.0       3.5       1.0         18       5.7       3.8       1.7       0.3         135       7.7       3.0       6.1       2.3         125       7.2       3.2       6.0       1.8         78       6.0       2.9       4.5       1.5         132       6.4       2.8       5.6       2.2         15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3     <   | 10  | 7.3           | 2.9          | 6.3           | 1.8          |
| 18       5.7       3.8       1.7       0.3         135       7.7       3.0       6.1       2.3         125       7.2       3.2       6.0       1.8         78       6.0       2.9       4.5       1.5         132       6.4       2.8       5.6       2.2         15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2     <   | 1   | 4.9           | 3.0          | 1.4           | 0.2          |
| 135       7.7       3.0       6.1       2.3         125       7.2       3.2       6.0       1.8         78       6.0       2.9       4.5       1.5         132       6.4       2.8       5.6       2.2         15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2         43       5.0       3.5       1.6       0.6     <   | 60  | 5.0           | 2.0          | 3.5           | 1.0          |
| 125       7.2       3.2       6.0       1.8         78       6.0       2.9       4.5       1.5         132       6.4       2.8       5.6       2.2         15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2         48       6.2       2.2       4.5       1.5         43       5.0       3.5       1.6       0.6 </td <td>18</td> <td>5.7</td> <td>3.8</td> <td>1.7</td> <td>0.3</td>                           | 18  | 5.7           | 3.8          | 1.7           | 0.3          |
| 78       6.0       2.9       4.5       1.5         132       6.4       2.8       5.6       2.2         15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2         43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4 <td>13</td> <td><b>5</b> 7.7</td> <td>3.0</td> <td>6.1</td> <td>2.3</td>                        | 13  | <b>5</b> 7.7  | 3.0          | 6.1           | 2.3          |
| 132       6.4       2.8       5.6       2.2         15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2         43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         44       5.4       3.0       4.5       1.5 <td>12</td> <td><b>5</b> 7.2</td> <td>3.2</td> <td>6.0</td> <td>1.8</td>                        | 12  | <b>5</b> 7.2  | 3.2          | 6.0           | 1.8          |
| 15       5.7       4.4       1.5       0.4         83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2         68       6.2       2.2       4.5       1.5         43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5 <td>78</td> <td>6.0</td> <td>2.9</td> <td>4.5</td> <td>1.5</td>                                  | 78  | 6.0           | 2.9          | 4.5           | 1.5          |
| 83       6.0       2.7       5.1       1.6         42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2         68       6.2       2.2       4.5       1.5         43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0 <td>13</td> <td><b>2</b> 6.4</td> <td>2.8</td> <td>5.6</td> <td>2.2</td>                        | 13  | <b>2</b> 6.4  | 2.8          | 5.6           | 2.2          |
| 42       4.4       3.2       1.3       0.2         96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2         68       6.2       2.2       4.5       1.5         43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0  | 15  | 5.7           | 4.4          | 1.5           | 0.4          |
| 96       5.7       2.9       4.2       1.3         46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2         68       6.2       2.2       4.5       1.5         43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0   | 83  | 6.0           | 2.7          | 5.1           | 1.6          |
| 46       5.1       3.8       1.6       0.2         23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2         68       6.2       2.2       4.5       1.5         43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0  | 42  | 4.4           | 3.2          | 1.3           | 0.2          |
| 23       5.1       3.3       1.7       0.5         56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2         68       6.2       2.2       4.5       1.5         43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0   | 96  | 5.7           | 2.9          | 4.2           | 1.3          |
| 56       6.3       3.3       4.7       1.6         136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2         68       6.2       2.2       4.5       1.5         43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0  | 46  | 5.1           | 3.8          | 1.6           | 0.2          |
| 136       6.3       3.4       5.6       2.4         116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2         68       6.2       2.2       4.5       1.5         43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0   | 23  | 5.1           | 3.3          | 1.7           | 0.5          |
| 116       6.5       3.0       5.5       1.8         30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2         68       6.2       2.2       4.5       1.5         43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0   | 56  | 6.3           | 3.3          | 4.7           | 1.6          |
| 30       4.8       3.1       1.6       0.2         0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2         68       6.2       2.2       4.5       1.5         43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0   | 13  | 6.3           | 3.4          | 5.6           | 2.4          |
| 0       5.1       3.5       1.4       0.2         143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2         68       6.2       2.2       4.5       1.5         43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0  | 110 | 6.5           | 3.0          | 5.5           | 1.8          |
| 143       6.8       3.2       5.9       2.3         92       5.8       2.6       4.0       1.2         68       6.2       2.2       4.5       1.5         43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0  | 30  | 4.8           | 3.1          | 1.6           | 0.2          |
| 92       5.8       2.6       4.0       1.2         68       6.2       2.2       4.5       1.5         43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0  | 0   | 5.1           | 3.5          | 1.4           | 0.2          |
| 68       6.2       2.2       4.5       1.5         43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0   | 14  | <b>3</b> 6.8  | 3.2          | 5.9           | 2.3          |
| 43       5.0       3.5       1.6       0.6         12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0  | 92  | 5.8           | 2.6          | 4.0           | 1.2          |
| 12       4.8       3.0       1.4       0.1         31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0   | 68  | 6.2           | 2.2          | 4.5           | 1.5          |
| 31       5.4       3.4       1.5       0.4         84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0  | 43  | 5.0           | 3.5          | 1.6           | 0.6          |
| 84       5.4       3.0       4.5       1.5         121       5.6       2.8       4.9       2.0   | 12  | 4.8           | 3.0          | 1.4           | 0.1          |
| <b>121</b> 5.6 2.8 4.9 2.0   | 31  | 5.4           | 3.4          | 1.5           | 0.4          |
|  | 84  | 5.4           | 3.0          | 4.5           | 1.5          |
| <b>19</b> 5.1 3.8 1.5 0.3  | 12  | <b>1</b> 5.6  | 2.8          | 4.9           | 2.0          |
|  | 19  | 5.1           | 3.8          | 1.5           | 0.3          |

Next steps: Generate code with xtest View recommended plots New interactive sheet

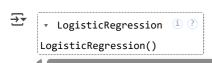
sns.pairplot(dt, hue='Species')



from sklearn.linear\_model import LogisticRegression

lr = LogisticRegression()

lr.fit(xtrain,ytrain)



ypred = lr.predict(xtest)

 ${\tt from \ sklearn.metrics \ import \ accuracy\_score}$ 

accuracy\_score(ytest,ypred)

0.9473684210526315

import pickle

| pickl | e.dump( | lr, | open('iris      | s.pkl | ','wb')) |
|-------|---------|-----|-----------------|-------|----------|
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| Start | coding  | or  | <u>generate</u> | with  | AI.      |