

```
In [2]: import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
iris = pd.read_csv("IRIS.csv")
```

```
In [3]: print(iris.head())
```

	sepal_length	sepal_width	petal_length	petal_width	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

```
In [4]: print(iris.describe())
```

	sepal_length	sepal_width	petal_length	petal_width
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

```
In [5]: print("Target Labels", iris["species"].unique())
```

Target Labels ['Iris-setosa' 'Iris-versicolor' 'Iris-virginica']

```
In [6]: import plotly.express as px
fig = px.scatter(iris, x="sepal_width", y="sepal_length", color="sp
fig.show()
```



```
In [7]: x = iris.drop("species", axis=1)
y = iris["species"]
from sklearn.model_selection import train_test_split
x_train, x_test, y_train, y_test = train_test_split(x, y,
                                                    test_size=0.2,
                                                    random_state=0)

from sklearn.neighbors import KNeighborsClassifier
knn = KNeighborsClassifier(n_neighbors=1)
knn.fit(x_train, y_train)
```

```
Out[7]: > KNeighborsClassifier
```

```
In [9]: x_new = np.array([[5, 2.9, 1, 0.2]])  
prediction = knn.predict(x_new)  
print("Prediction: {}".format(prediction))
```

Prediction: ['Iris-setosa']

/Users/amjaf/anaconda3/lib/python3.11/site-packages/sklearn/base.py:439: UserWarning:

X does not have valid feature names, but KNeighborsClassifier was fitted with feature names

In []: