Task-2 Iris Flower Classification using ML Project

This particular ML project is usually referred to as the "Hello World" of Machine Learning. The iris flowers dataset contains numeric attributes, and it is perfect for beginners to learn about supervised ML algorithms, mainly how to load and handle

deta. Also, since this is a small dataset, it can easily fit in memory without requiring special transformations or scaling

capabilities.

Author:Sakshi Itnare

Link for the dataset:http://archive.ics.uci.edu/ml/machine-learning-databases/iris/iris.data (http://archive.ics.uci.edu/ml/machine-learning-databases/iris/iris.data)

Importing the necessary libraries

In [2]:

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LogisticRegression
from sklearn.metrics import accuracy_score,confusion_matrix,classification_report
```

Loading the dataset

In [36]:

```
columns =['sepal length','sepal width','petal length','petal width',"target class"]
dataset = pd.read_csv("C:/Users/sakshi itnare/Downloads/iris (2).data",names = columns)
```

In [16]:

```
dataset.head()
```

Out[16]:

	sepal length	sepal width	petal length	petal width	target class
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 [18]:

```
dataset.info()
```

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

In [19]:

```
dataset.describe()
```

Out[19]:

	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

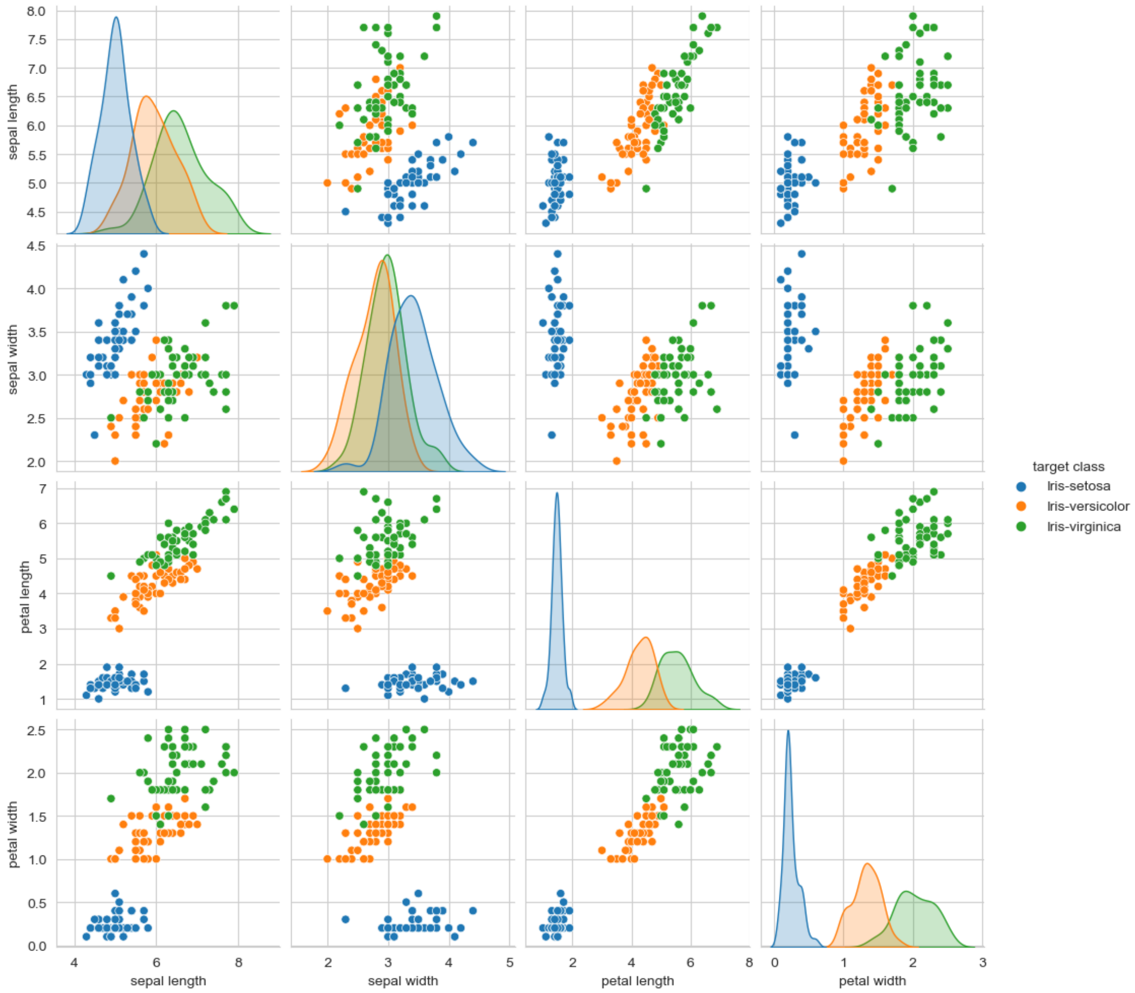
Visualising the dataset

In [39]:

```
sns.pairplot(dataset,hue='target class')
```

Out[39]:

```
<seaborn.axisgrid.PairGrid at 0x1532d651fd0>
```



In [20]:

```
dataset.columns
```

Out[20]:

```
Index(['sepal length', 'sepal width', 'petal length', 'petal width',
       'target class'],
      dtype='object')
```

In [21]:

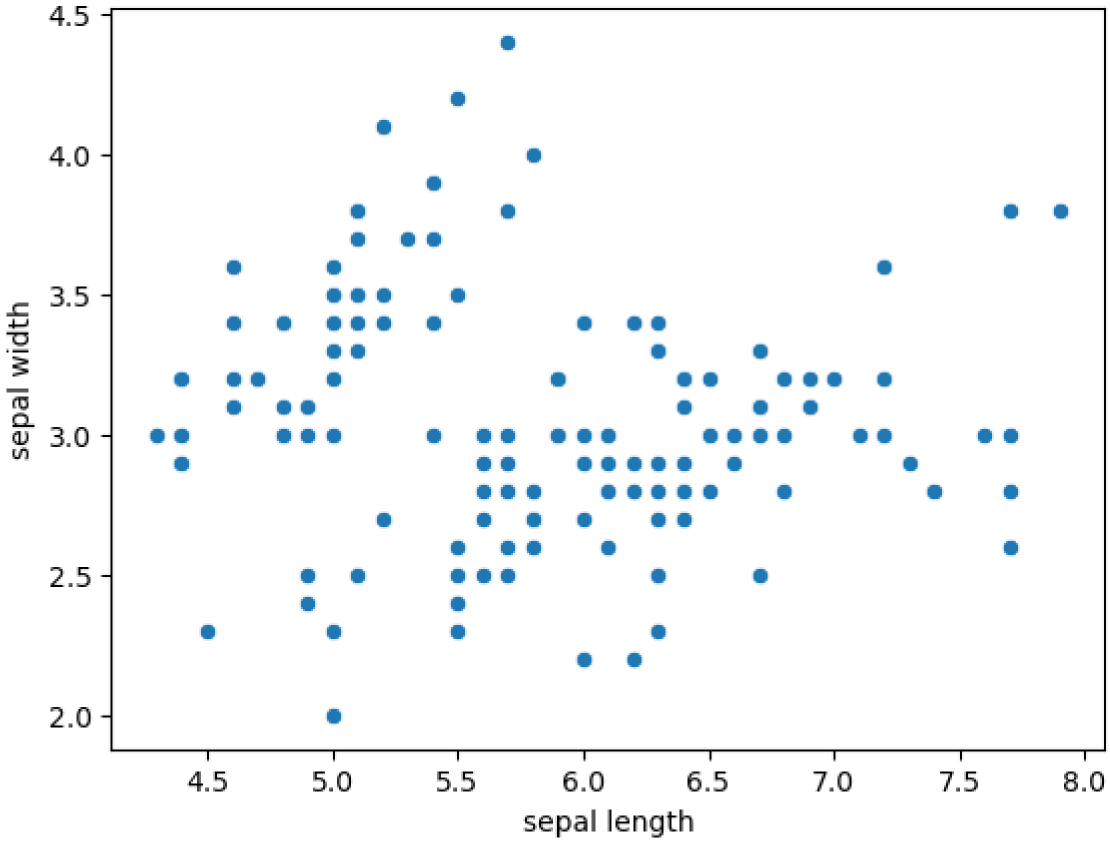
```
dataset.isnull().sum()
```

Out[21]:

```
sepal length    0
sepal width     0
petal length    0
petal width     0
target class    0
dtype: int64
```

In [22]:

```
sns.scatterplot(data=dataset,x='sepal length',y='sepal width')
plt.show()
```



Correlation Between the numeric variables

In [40]:

```
dataset.corr()
```

Out[40]:

	sepal length	sepal width	petal length	petal width
sepal length	1.000000	-0.109369	0.871754	0.817954
sepal width	-0.109369	1.000000	-0.420516	-0.356544
petal length	0.871754	-0.420516	1.000000	0.962757
petal width	0.817954	-0.356544	0.962757	1.000000

In [2]:

```
TargetClass = {}
TargetClass["Iris-setosa"]=(["target_class"]== 'Iris-setosa')


print(TargetClass)
```

```
{'Iris-setosa': False}
```

Thank You!!