Name:KALYANAM VENKATA SREE SAI

ID:2000030439

SEC:01

CourseCode:20cs3026RA

In [1]:
```
import numpy as np
import pandas as pd
```

In [2]:
```
from sklearn.datasets import load_iris
iris = load_iris()
X = iris.data
```

In [3]:
```
X
```

Out[3]:
```
array([[5.1, 3.5, 1.4, 0.2],
       [4.9, 3. , 1.4, 0.2],
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       [5. , 3.2, 1.2, 0.2],
       [5.5, 3.5, 1.3, 0.2],
       [4.9, 3.6, 1.4, 0.1],
```

```
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[4.8, 3. , 1.4, 0.3],
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[5.7, 2.8, 4.1, 1.3],
[6.3, 3.3, 6. , 2.5],
[5.8, 2.7, 5.1, 1.9],
[7.1, 3. , 5.9, 2.1],
[6.3, 2.9, 5.6, 1.8],
```

```
       [6.5, 3. , 5.8, 2.2],
       [7.6, 3. , 6.6, 2.1],
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       [7.3, 2.9, 6.3, 1.8],
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       [6.5, 3.2, 5.1, 2. ],
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       [6.8, 3. , 5.5, 2.1],
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       [6. , 2.2, 5. , 1.5],
       [6.9, 3.2, 5.7, 2.3],
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       [7.7, 2.8, 6.7, 2. ],
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       [6.4, 2.8, 5.6, 2.1],
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       [6.3, 2.8, 5.1, 1.5],
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       [6.4, 3.1, 5.5, 1.8],
       [6. , 3. , 4.8, 1.8],
       [6.9, 3.1, 5.4, 2.1],
       [6.7, 3.1, 5.6, 2.4],
       [6.9, 3.1, 5.1, 2.3],
       [5.8, 2.7, 5.1, 1.9],
       [6.8, 3.2, 5.9, 2.3],
       [6.7, 3.3, 5.7, 2.5],
       [6.7, 3. , 5.2, 2.3],
       [6.3, 2.5, 5. , 1.9],
       [6.5, 3. , 5.2, 2. ],
       [6.2, 3.4, 5.4, 2.3],
       [5.9, 3. , 5.1, 1.8]])
```

In [4]:

```
from sklearn.preprocessing import StandardScaler
scaler = StandardScaler()

# we fit the train data
scaler.fit(train_data)

# scaling the train data
train_data = scaler.transform(train_data)
test_data = scaler.transform(test_data)

print(train_data[:3])
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Input In [4], in <cell line: 5>()
      2 scaler = StandardScaler()
      4 # we fit the train data
----> 5 scaler.fit(train_data)
```

```
      7 # scaling the train data
      8 train_data = scaler.transform(train_data)

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

In [5]:
```
from sklearn.neural_network import MLPClassifier
# creating an classifier from the model:
mlp = MLPClassifier(hidden_layer_sizes=(10, 5), max_iter=1000)

# let's fit the training data to our model
mlp.fit(train_data, train_labels)
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Input In [5], in <cell line: 6>()
      3 mlp = MLPClassifier(hidden_layer_sizes=(10, 5), max_iter=1000)
      5 # let's fit the training data to our model
----> 6 mlp.fit(train_data, train_labels)

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

In [ ]:
```
from sklearn.metrics import accuracy_score

predictions_train = mlp.predict(train_data)
print(accuracy_score(predictions_train, train_labels))
predictions_test = mlp.predict(test_data)
print(accuracy_score(predictions_test, test_labels))
```