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Assignment - 06 [KNN]

In[1]:
```
from sklearn.datasets import load_iris
```

In[2]:
```
iris = load_iris()
```

In[3]:
```
import pandas as pd
```

In[4]:
```
data = pd.DataFrame(iris.data, columns = iris.feature_names)
```

In[5]:
```
data.head()
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)
0	5.1	3.5	1.4	0.2
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

In[6]:
```
data['Species'] = pd.DataFrame(iris.target)
```

In[7]:
```
x = data.iloc[:, :-1]
y = data.iloc[:, -1]
```

In[8]:
```
from sklearn.model_selection import train_test_split
x_train, x_test, y_train, y_test = train_test_split(x, y, test_size=0.3)
```

In[9]:
```
from sklearn.neighbours import KNeighbonsClassifier
model = KNeighbonsClassifier (n_neighbors = 5)
```

In[10]:
```
model.fit (x_train, y_train)
y_pred=(model.predict (x_test))
```

In[11]:
```
from sklearn.metrices import accuracy_score
print(accuracy_score (y_pred, y_test).round(2) *100)
```

96.0

In[12]:
```
score = []
k_range = range (1, 31)
for k in k_range:
    model = KNeighbonsClassifier (n_neighbors = k)
    model.fit (x_train, y_train)
    y_pred = model.predict (x_test)
    score.append (accuracy_score (y_pred, y_test).round(2)*100)
```

In[13]:
```
for k in k_range:
    print (k, ':', score[k-1])
```

1 : 96.0

2 : 93.0

.....

29 : 89.0

30 : 91.0

Teacher's Signature .....

In [14]:
```
from matplotlib import pyplot as plt.
% matplotlib inline.
```

In [15]:
```
plt.plot ( k_range, score)
plt.xlabel ('Neighbors')
plt.ylabel ('Accuracy')
plt.show()
```