KNN Algorithm

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

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

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

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

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

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

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

In [ ]:
```
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 [ ]:
```
from sklearn.neighbors import KNeighborsClassifier

model = KNeighborsClassifier(n_neighbors = 5)
```

In [ ]:
```
model.fit(X_train,y_train)
y_pred = model.predict(X_test)
```

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

```
print(accuracy_score(y_pred,y_test).round(2)*100)
```

In [ ]:

```
score = []
k_range = range(1,31)

for k in k_range:
    model = KNeighborsClassifier(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 [ ]:

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

In [ ]:

```
from matplotlib import pyplot as plt
%matplotlib inline
```

In [ ]:

```
plt.plot(k_range,score)
plt.xlabel('Neighbors')
plt.ylabel('Accuracy')
plt.show()
```