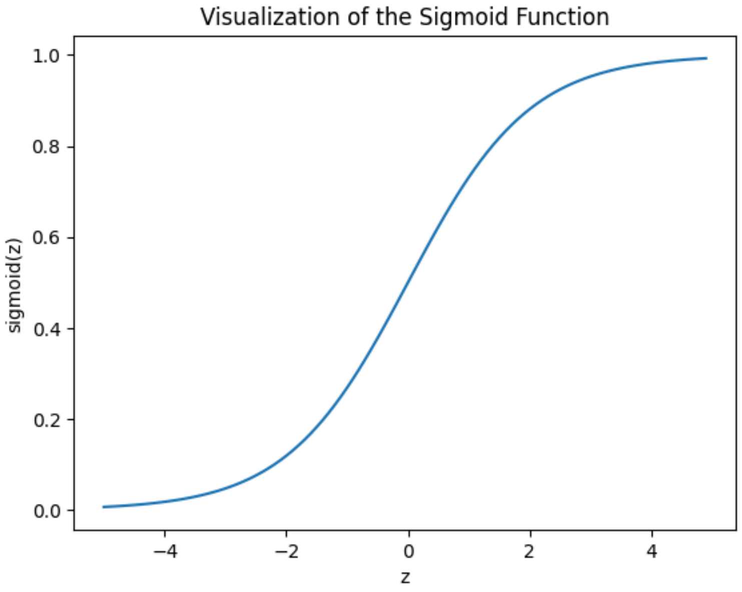
```
Start coding or generate with AI.
```

Double-click (or enter) to edit

6

```
import numpy as np
import matplotlib.pyplot as plt
def sigmoid(z):
    return 1 / (1 + np.exp(-z))
plt.plot(np.arange(-5, 5, 0.1), sigmoid(np.arange(-5, 5, 0.1)))
plt.title('Visualization of the Sigmoid Function')
plt.xlabel('z')
plt.ylabel('sigmoid(z)')
plt.show()
```



7

```
from sklearn.neighbors import KNeighborsClassifier
from sklearn import datasets
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score

iris = datasets.load_iris()
X = iris.data
y = iris.target

X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, random_state=42)

knn = KNeighborsClassifier(n_neighbors=5)
knn.fit(X_train, y_train)

y_pred = knn.predict(X_test)

accuracy = accuracy_score(y_test, y_pred)
print(f"Accuracy: {accuracy:.2f}")
```

```
Accuracy: 1.00
```

8

```
from sklearn.naive_bayes import GaussianNB
from sklearn import datasets
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score

iris = datasets.load_iris()
X = iris.data
y = iris.target

X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, random_state=42)
```

```
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, random_state=42)

nb = GaussianNB()
nb.fit(X_train, y_train)

y_pred = nb.predict(X_test)

accuracy = accuracy_score(y_test, y_pred)
print(f"Accuracy: {accuracy:.2f}")
```

```
Accuracy: 0.98
```

9

```
from sklearn.linear_model import LogisticRegression
from sklearn import datasets
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score

iris = datasets.load_iris()
X = iris.data
y = iris.target

X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, random_state=42)

lr = LogisticRegression(max_iter=200)
lr.fit(X_train, y_train)

y_pred = lr.predict(X_test)

accuracy = accuracy_score(y_test, y_pred)
print(f"Accuracy: {accuracy:.2f}")
```

```
Accuracy: 1.00
```

10

```
from sklearn.tree import DecisionTreeClassifier
from sklearn import datasets
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score

iris = datasets.load_iris()
X = iris.data
y = iris.target

X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, random_state=42)

dt = DecisionTreeClassifier(random_state=42)
dt.fit(X_train, y_train)

y_pred = dt.predict(X_test)

accuracy = accuracy_score(y_test, y_pred)
print(f"Accuracy: {accuracy:.2f}")
```

```
Accuracy: 1.00
```

11

```
from sklearn.svm import SVC
from sklearn import datasets
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score

iris = datasets.load_iris()
X = iris.data
y = iris.target

X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, random_state=42)

svm = SVC(kernel='linear')
svm.fit(X_train, y_train)

y_pred = svm.predict(X_test)

accuracy = accuracy_score(y_test, y_pred)
print(f"Accuracy: {accuracy:.2f}")
```

```
Accuracy: 1.00
```

12

```
from sklearn.ensemble import RandomForestClassifier
from sklearn import datasets
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score

iris = datasets.load_iris()
X = iris.data
y = iris.target

X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, random_state=42)

rf = RandomForestClassifier(n_estimators=100, random_state=42)
rf.fit(X_train, y_train)

y_pred = rf.predict(X_test)

accuracy = accuracy_score(y_test, y_pred)
print(f"Accuracy: {accuracy:.2f}")
```

```
Accuracy: 1.00
```