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import numpy as np
import matplotlib.pyplot as plt
from sklearn.datasets import make_classification
from sklearn.model_selection import train_test_split
from sklearn.tree import DecisionTreeClassifier, export_graphviz
import graphviz
import pydotplus
from IPython.display import Image # Import the necessary class for displaying images

# Generate some synthetic data for classification
X, y = make_classification(n_samples=1000, n_features=2, n_classes=2, n_clusters_per_class=1, n_redundant=0, random_state=42)

# Split the data into training and testing sets
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, random_state=42)

# Create a Decision Tree classifier (CART)
cart_classifier = DecisionTreeClassifier(random_state=42)

# Train the classifier on the training data
cart_classifier.fit(X_train, y_train)

# Make predictions on the test data
y_pred = cart_classifier.predict(X_test)

# Visualize the decision tree with a beautiful output
dot_data = export_graphviz(cart_classifier, out_file=None, filled=True, rounded=True, special_characters=True,
                           feature_names=["Feature 1", "Feature 2"], class_names=["Class 0", "Class 1"])

graph = pydotplus.graph_from_dot_data(dot_data)

# Convert the graph to an image and display it
image = Image(graph.create_png())
display(image)

```

Saved successfully!

