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import pandas as pd
from sklearn import tree
import matplotlib.pyplot as plt
from google.colab import files

data = pd.read_csv("study_dataset.csv")

# Step 2: Separate features and labels
X = data.drop("Pass", axis=1)
Y = data["Pass"]

# Step 3: Create and train the model
clf = tree.DecisionTreeClassifier()
clf = clf.fit(X, Y)

# Step 4: Predict for a new student
sample = pd.DataFrame([[3, 7, 1]], columns=["Hours_Studied",
"Sleep_Hours", "Tuition_Attended"])
prediction = clf.predict(sample)

print("Will the student pass? (1 = Yes, 0 = No):", prediction[0])
```

```
Will the student pass? (1 = Yes, 0 = No): 0
```

```
# Step 5: Visualize the tree
plt.figure(figsize=(12, 8))
tree.plot_tree(clf,
               feature_names=X.columns,
               class_names=["Fail", "Pass"],
               filled=True)
plt.title("Decision Tree - Student Pass Prediction")
plt.show()
```

Decision Tree - Student Pass Prediction