```
import pandas as pd
from sklearn import tree
import matplotlib.pyplot as plt

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

X = data.drop("Pass", axis=1)  # Features: Hours_Studied, Sleep_Hours,
Tuition_Attended
Y = data["Pass"]               # Labels: Pass (0/1)


clf = tree.DecisionTreeClassifier()
clf = clf.fit(X, Y)


sample = [[3, 7, 1]]
prediction = clf.predict(sample)
print("Will the student pass? (1 = Yes, 0 = No):", prediction[0])


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

/usr/local/lib/python3.11/dist-packages/sklearn/utils/
validation.py:2739: UserWarning: X does not have valid feature names,
but DecisionTreeClassifier was fitted with feature names
  warnings.warn(

plt.figure(figsize=(12, 8))
tree.plot_tree(clf,
               feature_names=["Hours_Studied", "Sleep_Hours",
"Tuition_Attended"],
               class_names=["Fail", "Pass"],
               filled=True)
plt.title("Decision Tree - Student Pass Prediction")
plt.show()
```

Decision Tree - Student Pass Prediction