Artificial Intelligence

Lab#13

Name: Zainab Bibi

Sap Id: 46462

BSCS-6th Semester

Submitted to

Miss Ayesha Akram

Task#1

Solution:

```python
import pandas as pd
from sklearn import tree
import matplotlib.pyplot as plt
#load dataset
data = pd.read_csv(r"C:\Users\DELL\Downloads\study_dataset.csv")

X = data.drop( labels: "Pass", axis=1)
Y = data["Pass"]

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

sample = pd.DataFrame( data: [[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])

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()
```

Output:

```
C:\Users\DELL\PycharmProjects\PythonProject\.venv\Scripts\p
Will the student pass? (1 = Yes, 0 = No): 1
```