```
# Tille : Decision Tree


import pandas as pd
import numpy as np


pima = pd.read_csv("/content/pima-indians-diabetes.xls")
X =pima.iloc[:,[1,2,3]].values
Y=pima.iloc[:,-1].values



from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, Y, test_size=0.3, random_state=1)

from sklearn.tree import DecisionTreeClassifier
model = DecisionTreeClassifier().fit(X_train,y_train)
y_pred = model.predict(X_test)

from sklearn import metrics

print("Accuracy:",metrics.accuracy_score(y_test, y_pred))
```

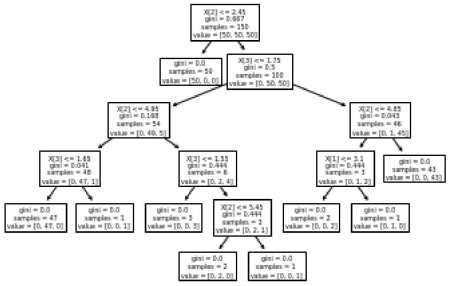
```
Accuracy: 0.683982683982684
```

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


pima = pd.read_csv("/content/pima-indians-diabetes.xls", header=None)

pima.head()

X =pima.iloc[:,[1,2,3]].values
Y=pima.iloc[:,-1].values

X_train, X_test, y_train, y_test = train_test_split(X, Y, test_size=0.3, random_state=1)
model = DecisionTreeClassifier()
model = model.fit(X_train,y_train)
y_pred = model.predict(X_test)

print("Accuracy:",metrics.accuracy_score(y_test, y_pred))
```

```
Accuracy: 0.645021645021645
```

```
from sklearn.datasets import load_iris
from sklearn import tree

dataset=load_iris()
x=dataset.data
y=dataset.target
y

model=tree.DecisionTreeClassifier().fit(x,y)

tree.plot_tree(model)

model.predict([[2,2,2,2]])
```

```
array([0])
```


X[2] <= 2.45
gini = 0.667
samples = 150
value = [50, 50, 50]
gini = 0.0
samples = 50
value = [50, 0, 0]
X[3] <= 1.75
gini = 0.5
samples = 100
value = [0, 50, 50]
X[2] <= 4.95
gini = 0.168
samples = 54
value = [0, 49, 5]
X[2] <= 4.85
gini = 0.043
samples = 46
value = [0, 1, 45]
X[3] <= 1.65
gini = 0.041
samples = 48
value = [0, 47, 1]
X[3] <= 1.55
gini = 0.444
samples = 6
value = [0, 2, 4]
X[1] <= 3.1
gini = 0.444
samples = 3
value = [0, 1, 2]
gini = 0.0
samples = 43
value = [0, 0, 43]
gini = 0.0
samples = 47
value = [0, 47, 0]
gini = 0.0
samples = 1
value = [0, 0, 1]
gini = 0.0
samples = 3
value = [0, 0, 3]
X[2] <= 5.45
gini = 0.444
samples = 3
value = [0, 2, 1]
gini = 0.0
samples = 2
value = [0, 0, 2]
gini = 0.0
samples = 1
value = [0, 1, 0]
gini = 0.0
samples = 2
value = [0, 2, 0]
gini = 0.0
samples = 1
value = [0, 0, 1]