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# predict decision choice using SVM and calculate prediction accuracy and weightage of features
import numpy as np
import pandas as pd
from sklearn import svm
from sklearn.preprocessing import LabelEncoder
from sklearn.model_selection import train_test_split

dataset=pd.read_csv('/Users/saurav/Desktop/Research works/my_work/decisionCART.csv')
dataset=pd.DataFrame(data=dataset.iloc[:,0:5].values,columns=["temperature","humidity","rainfall","wi
nd","decision"])
print("Data")
print(dataset)

dataset_encoded=dataset.iloc[:,0:5]
le=LabelEncoder()
for i in dataset_encoded:
    dataset_encoded[i]=le.fit_transform(dataset_encoded[i])

print("Encoded data")
print(dataset_encoded)
#Feature Set
X=dataset_encoded.iloc[:,0:4]
#Label Set
y=dataset_encoded.iloc[:,4]

X_train,X_test,y_train,y_test=train_test_split(X,y,test_size=0.3)
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svm = svm.SVC(kernel='linear')
svm.fit(X_train, y_train)
print("Weightage of features")

print(svm.coef_)
print("Prediction accuracy")

print(svm.score(X_train,y_train))
```