

INSTITUTE OF AERONAUTICAL ENGINEERING (An Autonomous Institute affiliated to JNTUH, Hyderabad) Dundigal, Hyderabad - 500 043

LABORATORY WORK BOOK

Name of the Student :HIMAKAR C							Doll Mumber								
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	Exercise Number		Aim/ Preparation	Algorithm	Source Code				on vi	Viva -		1			
				Performar	Calculations and Graphs		Res	Results and Error Analysis		1	Voce		Total		
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1 9-1		Build a decision. tree crassifier to determine kind of flower	h	Q 4		u		ч		u	4		20		
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4	1 = 1	by given Dimension	\$								-		-		
3		Train with various split	let 1	-eizh	n =, 39	7 P.	vol	·¥a	1	.0		Ŧ			
4		measures				1	C per			< 1	1	Ť			
5	9.3	compare the			(537)		ille s	ref	ž	f _{ef}		4			
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9.1 Build a decision tree classifier to determine the kind of flower by using given dimensions. from sklearn. datasets import load iris from skiearn. model_selection import train_test_split from sklearn. tree import Decision Tree Classifier from shearn-metrics import accuracy-score, Classification-beauti i = load_ivis() × = i.data y = i. target xt, xte, yt, yte = train_test_split(x, y, test_size =0.2, random-state = 42) CIF = DecisionTree Classifier (random-state = 42) CIf.fit (xt, yt) YP = c18. Proedict (xte) a = accuracy-score(4te, 4P) Print ('Accuracy: ', a) OUTPUT: ACCUracy: 1.0

```
with various split
   Train
                                measures (hini
9.2
   index, Entropy and information (gain)
         skiearn. datasets import load iris
   from
          sklearn. model-selection import train-test-split
   from
        sklearn . tree import Decision Tree Classifier
   480m
   from sklearn-metrics import
                                  accuracy-Score
   i = load-irisc)
   X = i.data; Y = i.target
   xt, xte, 4t, 4te = train_test_split(x, y, test_size=0.2)
       DEPORTED AND FROMME STORY (LES CONT
                                       vandom_state=42)
  d = { Gini Index: DecisionTree classifier(
                   Criterion = gini', random-state=42)
   and knothing
   Entropy': Decision Tree Classifier (criterion = 'entropy',
                              vandom-state = 42),
  Information Gain': DecisionTree classifier (
                    Criterion = ' gini', splitter = best;
                       vandom-State = 42) }
              in ditems co:
       CIF. fit (XE, 4E)
               cif.predict(xte)
                                    'Draision Tree'
               accuracy-score (4te, 4P)
       Print (f { ) } } - A couracy: {a: -24}!
    Support Vector Machine': Sivilandom-stark
```

OUTPUT'S SERVICE FIRE SERVICE OF SERVICE

Entropy - Accuracy: 1.00

Entropy - Accuracy: 1.00

Information Gain - Accuracy: 1.00

9.3 Compare the accuracy

from sklearn-datasets import load-iris

from sklearn-model-selection import train-test-split

from sklearn-tree import Decision Tree Classifier

from sklearn-neighbors import kneighbors Classifier

from sklearn-neighbors import skleighbors Classifier

from sklearn-sym import skl

from sklearn-metrics import accuracy-score

[==load-irisc)

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9 = 1. target mil

xt, xte, yt, yte = train_test_split (x, y, test_size =0.2, random_sheep)

 $d = {$

3

Decision Tree': Decision Tree classifier (random state-42)
'K-Nearest Neighbors': KNeighbors Classifier(),

Support Vector Machine': SVC(random_stale=42)

for j, K in ditensely: K.FiE(xE, 4E) 4P = K.Predict(xE) a = accuracy-score(4E, 4P) $Print(9, 5) - Accuracy: {a...21}')$

OUTPUT:

pecision Tree - Accuracy: 1.00 K-Neavest Neighbors - Accuracy: 1.00 Support Vector Machine - Accuracy: 1.00