PAGE NO	1	23
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8 Apply EM algorithm to cluster a set of
data stored in a . CSV file. Use the same
data set for customing wing K- Menne
argorism compare the results of there
two algorithms & comment on the quality
of clustering You can add Toval Python
Me Library classes / API in the program.
o , , , , , , , , , , , , , , , , , , ,
import matplotlip. pyhlot as blt
from skleam import datasets
from sklearm. cluster import Kneans
Emport Skleam. mebrics as sm
import pandas as pd.
import numby as np.
iris = dalorete. load - iris ()
X = pd - Dala France (iris. data)
X. column = ['sepal - longth', 'sepal - width
, 'Petal-length', 'Petal-width']
4 = bd. Data Frame (iris, target)
y = pd. DataFrame (iris. target) y. columns = ['Jargets']
model = knoom (n-clusters = 3)
(x) tig. leban
ARIIN'S

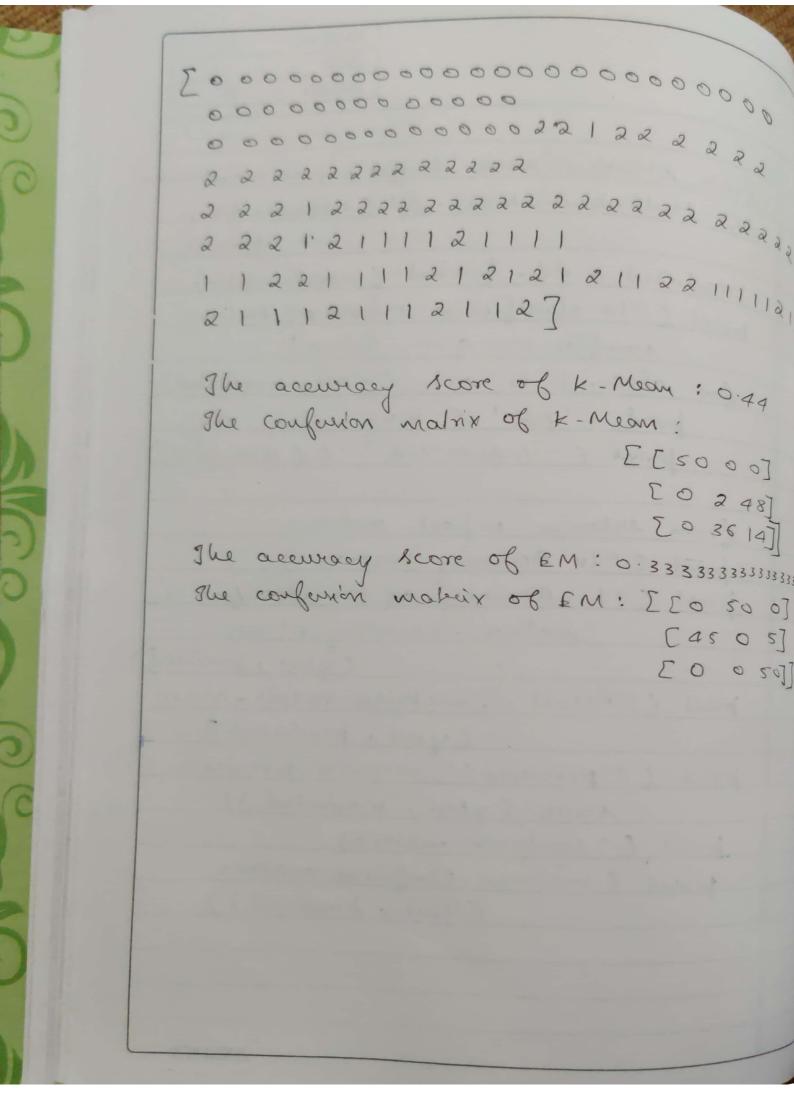
PAGE NO: 24 DATE : EXP.NO. : model. Labely_ 614. figure (figsize = (14,7)) color map = np. avray ([1red', 'Lime', 'black']) bit. Subplot (1,2,1) bit . scatter (x. Relat - length, x. Relat - width, C = colormap [4, Joseph], S=40) pH. title ('Real Classification') plt - Subplot (1,2,2) pH. scatter (x. petal-length, x. petal-evidth C= colormap [model: labels] S= 40) plt-like (' K Mean clarification') felt figure (figsize = (14,7)) pred y = up - choose (woold . Labels -, [0,1,2])-astyle (up.in164) brist (pred 4) plt. Subplot (1,2,1) felt. Scatter (x. Pefal_length, x. Petal_width c = color map [4. Jargets], s= 40) 1016. title ('Real clarrification') 614. 806 Mot (1,2,2)

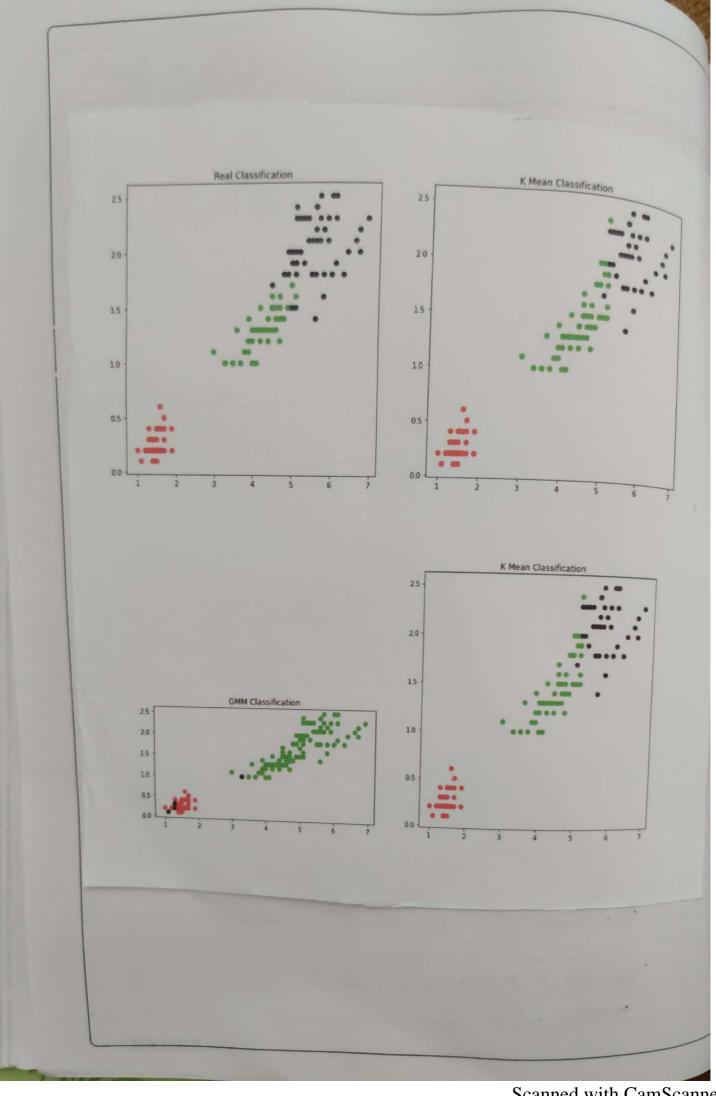
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plf. Scatter Cx. Pelal - length, x. Petal - width, C = Colormap & pred 4], S=40) bit. title (' k Mean clossification') Print ('The occuracy Score of K-Mean:', sm. accuracy - score (y, model. labely.)) brist (The confession materia of K-Mean! sm. confesion-matein (ymodel. (abels) from skleam moost preprousing scaler = preprocessing standard scaler () Scaler. fit (x) X &a = Scalar. Framform (x) xs = pd. Dayafrance (xsa, column = x. colum) from skleven mixture import Graussian Mixture gum = gamiannixture (4. components = 3) gum. fit (xx) y - cluster - grum = grum. predict (xs) plt. subplot (2,2,3) plt. Scatter (x. petal - longth, x. Petal - width, C= colormap [y-cluster_gnm], S=40) plt. Litte ('GMM clouifecation') ARUN'S

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