lab 6

#implement support vecctor machine for classification

import numpy as np

import pandas as pd

import seaborn as sns

import matplotlib.pyplot as plt

from sklearn.datasets import load\_iris

from sklearn.svm import SVC

from sklearn.preprocessing import StandardScaler

from sklearn.model\_selection import train\_test\_split

from sklearn.metrics import accuracy\_score,confusion\_matrix,classification\_report

# load dataset

dataset = load\_iris()

x=dataset.data

y=dataset.target

# standardization

sc=StandardScaler()

x=sc.fit\_transform(x)

# train test split

x\_train,x\_test,y\_train,y\_test=train\_test\_split(x,y,test\_size=0.2,random\_state=0)

# create and train svc

svc=SVC(kernel='rbf',C=1.0,gamma='scale')#Radaial bias

svc.fit(x\_train,y\_train)

# predict

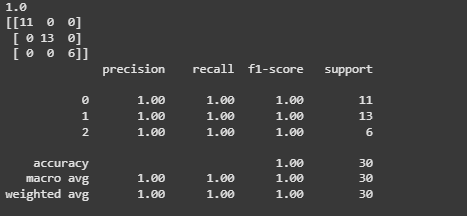
y\_pred=svc.predict(x\_test)

# evaluation

print(accuracy\_score(y\_test,y\_pred))

print(confusion\_matrix(y\_test,y\_pred))

print(classification\_report(y\_test,y\_pred))



# conhfusion matrix using heatmap

plt.figure(figsize=(4,2))

sns.heatmap(confusion\_matrix(y\_test,y\_pred),annot=True)

plt.title('Confusion Matrix using svm')

plt.xlabel('Predicted')

plt.ylabel('Truth')

