

Serial no.	Kernel name	Parameters	Accuracy
1	Linear	_	87.8868258179
2	poly	Degree = 2	87.886825817860299
3	Poly	Degree = 3	88.240495137
4	Poly	Degree = 4	87.798408488063657
5	poly	Degree = 5	87.3563218391
6	rbf	Gamma = 2	87.3563218391
7	rbf	Gamma = 3	87.3563218391

#code

Created on Sun Jul 8 22:12:03 2018

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SVM on bank_mutuak_fund_data

#importing libraries

import numpy as np

import pandas as pd

import matplotlib.pyplot as plt

#importing datasets

dataset = pd.read_csv("bank.csv", sep = ";")

X = dataset.iloc[:, :-1].values

Y = dataset.iloc[:, 16].values

#using encoding

from sklearn.preprocessing import LabelEncoder ,OneHotEncoder

labelencoder_X = LabelEncoder()

X[:, 1] = labelencoder_X.fit_transform(X[:, 1])

```
X[:,2] = labelencoder_X.fit_transform(X[:,2])
X[:,3] = labelencoder_X.fit_transform(X[:,3])
X[:,4] = labelencoder_X.fit_transform(X[:,4])
X[:,6] = labelencoder_X.fit_transform(X[:,6])
X[:,7] = labelencoder_X.fit_transform(X[:,7])
X[:,8] = labelencoder_X.fit_transform(X[:,8])
X[:,10] = labelencoder_X.fit_transform(X[:,10])
X[:,15] = labelencoder_X.fit_transform(X[:,15])
```

```
Y = labelencoder_X.fit_transform(Y)
onehotencoder = OneHotEncoder(categorical_features= [1,2,3,4,6,7,8,10,15])
X = onehotencoder.fit_transform(X).toarray()
```

```
#splitting dataset into training and testing dataset
from sklearn.model_selection import train_test_split
X_train, X_test, Y_train, Y_test = train_test_split(X,Y, test_size = .25, random_state = 1)
```

```
#normalizing
from sklearn.preprocessing import StandardScaler
sc_X = StandardScaler()
X_train = sc_X.fit_transform(X_train)
X_test = sc_X.fit_transform(X_test)
```

```
#fitting the SVM to the training set
from sklearn.svm import SVC #support vector classifier
classifier = SVC(kernel = 'rbf', gamma=3, random_state = 0)
classifier.fit(X_train,Y_train)
```

```
Y_pred = classifier.predict(X_test)
```

```
accuracy = (cm[0,0]+cm[1,1])/(cm[0,0]+cm[1,1]+cm[0,1]+cm[1,0])*100
```

```
#making confusion matrix
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```
from sklearn.metrics import confusion_matrix
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cm = confusion_matrix(Y_test,Y_pred)
```