**Wine quality prediction using machine learning**

Import numpy as np

Import pandas as pd

Import matplotlib.pyplot as plt

Import seaborn as sb

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

From sklearn.preprocessing import MinMaxScaler

From sklearn import metrics

From sklearn.svm import SVC

From xgboost import XGBClassifier

From sklearn.linear\_model import LogisticRegression

Import warnings

Warnings.filterwarnings(‘ignore’)df = pd.read\_csv(‘winequality.csv’)

Print(df.head())

df.infodf.isnull().sum()df.describe().Tfor col in df.columns:

if df[col].isnull().sum() > 0:

df[col] = df[col].fillna(df[col].mean())

df.isnull().sum().sum()df[‘best quality’] = [1 if x > 5 models = [LogisticRegression(), XGBClassifier(), SVC(kernel=’rbf’)]

for I in range(3):

models[i].fit(xtrain, ytrain)

print(f’{models[i]} : ‘)

print(‘Training Accuracy : ‘, metrics.roc\_auc\_score(ytrain, models[i].predict(xtrain)))

print(‘Validation Accuracy : ‘, metrics.roc\_auc\_score(

ytest, models[i].predict(xtest)))

print()features = df.drop([‘quality’, ‘best quality’], axis=1)

target = df[‘best quality’]

xtrain, xtest, ytrain, ytest = train\_test\_split(

features, target, test\_size=0.2, random\_state=40)

xtrain.shape, xtest.shape

metrics.plot\_confusion\_matrix(models[1], xtest, ytest)

plt.show()

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