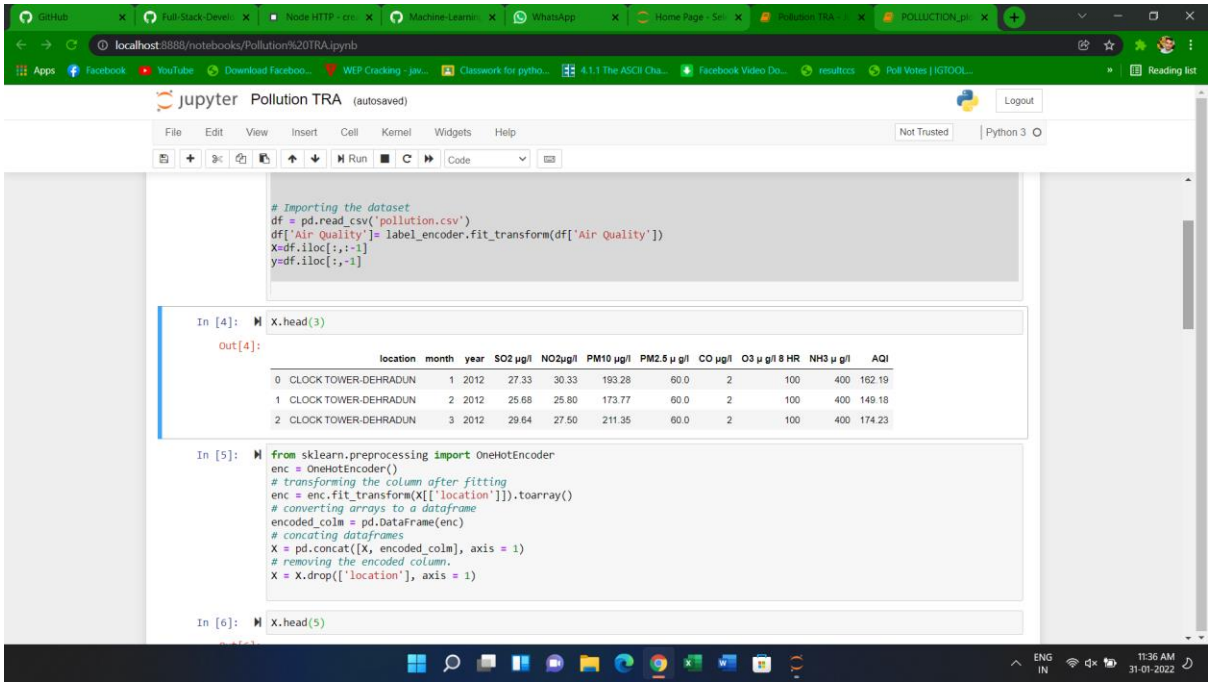
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Code
# Importing the dataset
df = pd.read_csv('pollution.csv')
df['Air Quality']= label_encoder.fit_transform(df['Air Quality'])
X=df.iloc[:,:-1]
y=df.iloc[:,-1]
In [4]:
X.head(3)
Out[4]:
location month year SO2 µg/l NO2µg/l PM10 µg/l PM2.5 µ g/l CO µg/l O3 µ g/l 8 HR NH3 µ g/l AQI
0 CLOCK TOWER-DEHRADUN 1 2012 27.33 30.33 193.28 60.0 2 100 400 162.19
1 CLOCK TOWER-DEHRADUN 2 2012 25.68 25.80 173.77 60.0 2 100 400 149.18
2 CLOCK TOWER-DEHRADUN 3 2012 29.64 27.50 211.35 60.0 2 100 400 174.23
In [5]:
from sklearn.preprocessing import OneHotEncoder
enc = OneHotEncoder()
# transforming the column after fitting
enc = enc.fit_transform(X[['location']]).toarray()
# converting arrays to a dataframe
encoded_colm = pd.DataFrame(enc)
# concating dataframes
X = pd.concat([X, encoded_colm], axis = 1)
# removing the encoded column.
X = X.drop(['location'], axis = 1)
In [6]:
X.head(5)
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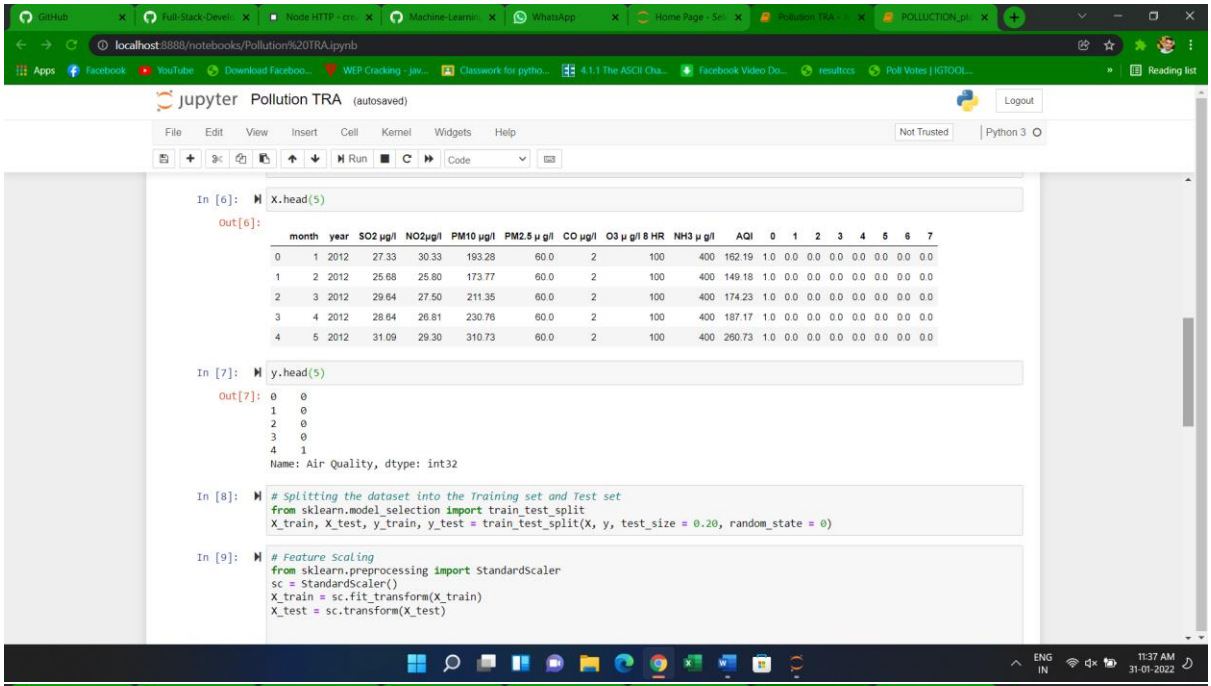
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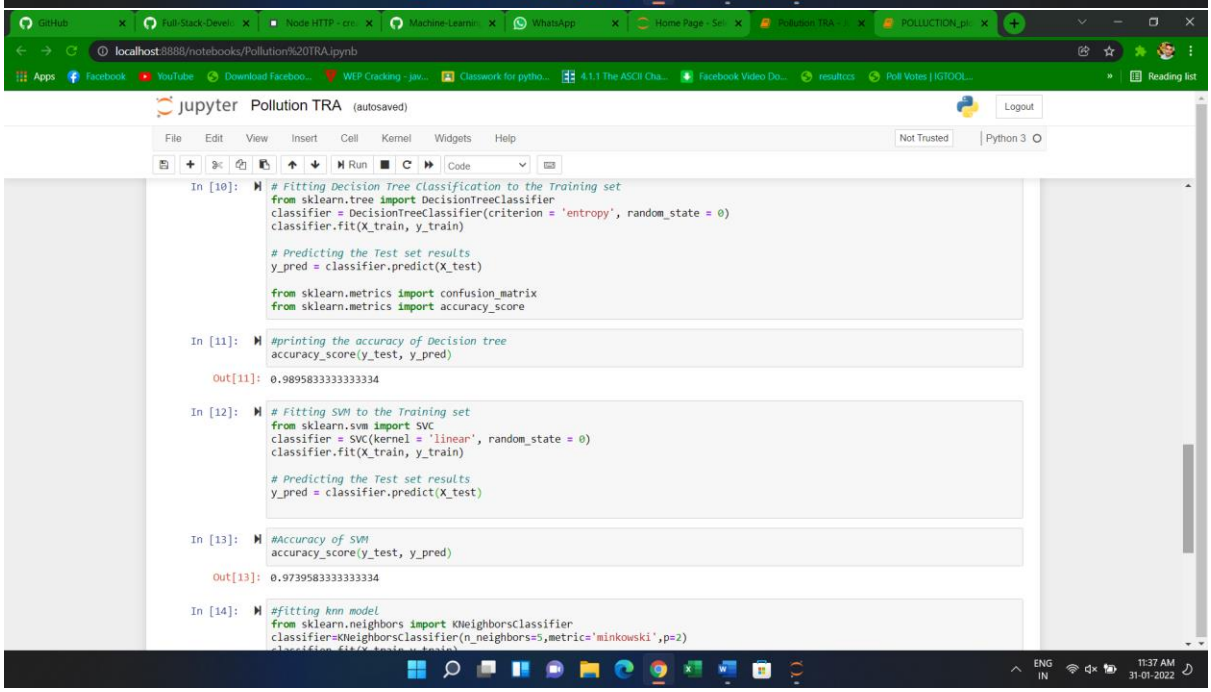
Code
In [6]:
X.head(5)
Out[6]:
month year SO2 µg/l NO2µg/l PM10 µg/l PM2.5 µ g/l CO µg/l O3 µ g/l 8 HR NH3 µ g/l AQI 0 1 2 3 4 5 6 7
0 1 2012 27.33 30.33 193.28 60.0 2 100 400 162.19 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
1 2 2012 25.68 25.80 173.77 60.0 2 100 400 149.18 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
2 3 2012 29.64 27.50 211.35 60.0 2 100 400 174.23 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
3 4 2012 28.64 26.81 230.76 60.0 2 100 400 187.17 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
4 5 2012 31.09 29.30 310.73 60.0 2 100 400 260.73 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
In [7]:
y.head(5)
Out[7]:
0 0
1 0
2 0
3 0
4 1
Name: Air Quality, dtype: int32
In [8]:
# Splitting the dataset into the Training set and Test set
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size = 0.20, random_state = 0)
In [9]:
# Feature Scaling
from sklearn.preprocessing import StandardScaler
sc = StandardScaler()
X_train = sc.fit_transform(X_train)
X_test = sc.transform(X_test)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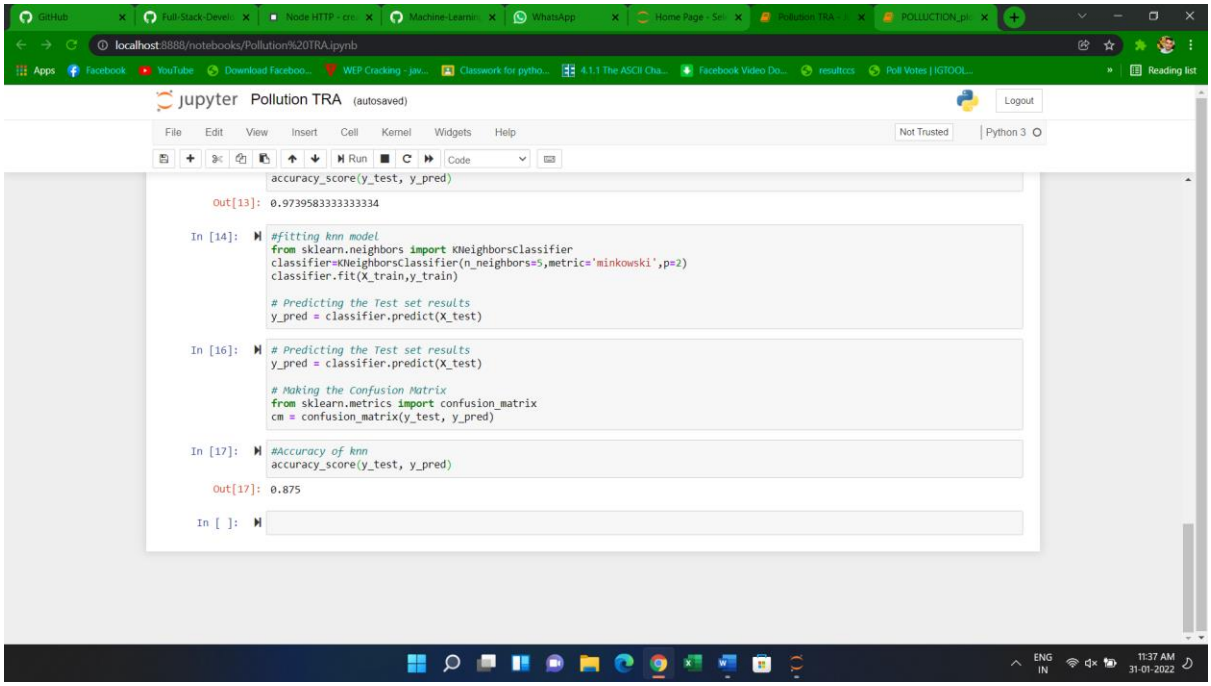
In [10]:
# Fitting Decision Tree Classification to the Training set
from sklearn.tree import DecisionTreeClassifier
classifier = DecisionTreeClassifier(criterion = 'entropy', random_state = 0)
classifier.fit(X_train, y_train)
# Predicting the Test set results
y_pred = classifier.predict(X_test)
from sklearn.metrics import confusion_matrix
from sklearn.metrics import accuracy_score
In [11]:
#printing the accuracy of Decision tree
accuracy_score(y_test, y_pred)
Out[11]:
0.9895833333333334
In [12]:
# Fitting SVM to the Training set
from sklearn.svm import SVC
classifier = SVC(kernel = 'linear', random_state = 0)
classifier.fit(X_train, y_train)
# Predicting the Test set results
y_pred = classifier.predict(X_test)
In [13]:
#Accuracy of SVM
accuracy_score(y_test, y_pred)
Out[13]:
0.9739583333333334
In [14]:
#fitting knn model
from sklearn.neighbors import KNeighborsClassifier
classifier=KNeighborsClassifier(n_neighbors=5,metric='minkowski',p=2)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Code
accuracy_score(y_test, y_pred)
Out[13]: 0.9739583333333334
In [14]:
#fitting knn model
from sklearn.neighbors import KNeighborsClassifier
classifier=KNeighborsClassifier(n_neighbors=5,metric='minkowski',p=2)
classifier.fit(X_train,y_train)
# Predicting the Test set results
y_pred = classifier.predict(X_test)
In [16]:
# Predicting the Test set results
y_pred = classifier.predict(X_test)
# Making the Confusion Matrix
from sklearn.metrics import confusion_matrix
cm = confusion_matrix(y_test, y_pred)
In [17]:
#Accuracy of knn
accuracy_score(y_test, y_pred)
Out[17]: 0.875
In [ ]: