Tyler Echols

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
df = pd.read csv('weatherAUS.csv')
df.head()
to_drop = ['Location', 'Date']
df.drop(to_drop, inplace=True, axis=1)
df['RainToday'] = df['RainToday'].fillna('No')
df['RainTomorrow'] = df['RainTomorrow'].fillna('No')
missing_values_numeric_features = [col for col in df.columns if (df.isnull().sum()[c
def impute_means(df, missing_values_columns):
    data = df.copy()
    '''Filling missing values with mean'''
    for col in missing values columns:
        data[col] = data[col].fillna(data[col].mean())
    return data
df = impute means(df,missing_values_numeric_features)
df.isnull().sum()
print(df)
df.plot(x="Rainfall", y="Humidity9am", kind="scatter")
```

| | MinTemp | MaxTemp | Raini | fall | Evapor | ation | Sunshi | ne Wind | lGustDir | \ | |
|--------|----------|------------|--------|--------|---------|-------|----------|---------|----------|-------|---|
| 0 | 13.4 | 22.900000 | | 0.6 | _ | 68232 | 7.6111 | | W | , | |
| 1 | 7.4 | 25.100000 | | 0.0 | | 68232 | 7.6111 | | WNW | | |
| 2 | 12.9 | 25.700000 | | 0.0 | | 68232 | 7.6111 | | WSW | | |
| 3 | 9.2 | 28.000000 | | 0.0 | | 68232 | 7.6111 | | NE | | |
| 4 | 17.5 | 32.300000 | | 1.0 | | 68232 | 7.6111 | | W | | |
| | • • • | • • • | | | | | | • • | | | |
| 145455 | 2.8 | 23.400000 | | 0.0 | 5.4 | 68232 | 7.6111 | | Е | | |
| 145456 | 3.6 | 25.300000 | | 0.0 | | 68232 | 7.6111 | | NNW | | |
| 145457 | 5.4 | 26.900000 | | 0.0 | | 68232 | 7.6111 | | N | | |
| 145458 | 7.8 | 27.000000 | | 0.0 | | 68232 | 7.6111 | | SE | | |
| 145459 | 14.9 | 23.221348 | | 0.0 | | 68232 | 7.6111 | | NaN | | |
| | | | | | | | | | | | |
| | WindGust | Speed Wind | Dir9am | WindI | Dir3pm | Winds | Speed9am | | Humidit | y9am | \ |
| 0 | 44. | 00000 | W | | WNW | | 20.0 | • • • | | 71.0 | |
| 1 | 44. | 00000 | NNW | | WSW | | 4.0 | • • • | | 44.0 | |
| 2 | 46. | 00000 | W | | WSW | | 19.0 | | | 38.0 | |
| 3 | 24. | 00000 | SE | | E | | 11.0 | | | 45.0 | |
| 4 | 41. | 00000 | ENE | | NW | | 7.0 | | | 82.0 | |
| | | • • • | | | | | • • • | • • • | | | |
| 145455 | 31. | 00000 | SE | | ENE | | 13.0 | | | 51.0 | |
| 145456 | 22. | 00000 | SE | | N | | 13.0 | | | 56.0 | |
| 145457 | 37. | 00000 | SE | | WNW | | 9.0 | • • • | | 53.0 | |
| 145458 | 28. | 00000 | SSE | | N | | 13.0 | • • • | | 51.0 | |
| 145459 | 40. | 03523 | ESE | | ESE | | 17.0 | • • • | | 62.0 | |
| | | _ | | | _ | | | | | _ | , |
| | Humidity | | ıre9am | Pres | ssure3p | | | Cloud3p | | | \ |
| 0 | | | 1007.7 | | 1007. | | 000000 | 4.5099 | | 6.9 | |
| 1 | | | 1010.6 | | 1007. | | 447461 | 4.5099 | | 7.2 | |
| 2 | | | 1007.6 | | 1008. | | 447461 | 2.0000 | | 1.0 | |
| 3 | | | 1017.6 | | 1012. | | 447461 | 4.5099 | | 8.1 | |
| 4 | 3. | 3.0 | 1010.8 | | 1006. | 0 7.0 | 000000 | 8.0000 | 00 1 | 7.8 | |
| • • • | | • • • | | | | | | | | • • • | |
| 145455 | | | 1024.6 | | 1020. | | 447461 | 4.5099 | | 0.1 | |
| 145456 | | | 1023.5 | | 1019. | | 447461 | 4.5099 | | 0.9 | |
| 145457 | | | 1021.0 | | 1016. | | 447461 | 4.5099 | | 2.5 | |
| 145458 | | | 1019.4 | | 1016. | | 000000 | 2.0000 | | 5.1 | |
| 145459 | 3 | 6.0 | 1020.2 | | 1017. | 9 8.0 | 000000 | 8.0000 | 00 1. | 5.0 | |
| | Temp3pm | RainToday | PainΨα | omorro | 25.7 | | | | | | |
| 0 | 21.8 | No | Rainic | | 10 | | | | | | |
| 1 | 24.3 | No | | | 10 | | | | | | |
| 2 | 23.2 | No | | | 10 | | | | | | |
| 3 | 26.5 | No | | | 10 | | | | | | |
| 4 | 29.7 | No | | | 10 | | | | | | |
| | 29.1 | | | • • | | | | | | | |
| 145455 | 22.4 | No | | | 10 | | | | | | |
| 145456 | 24.5 | No | | | 10 | | | | | | |
| 145457 | 26.1 | No | | | 10 | | | | | | |
| 145458 | 26.0 | No | | | 10 | | | | | | |
| 145459 | 20.9 | No | | | 10 | | | | | | |
| | 20.7 | 110 | | • | | | | | | | |
| | | | | | | | | | | | |

[145460 rows x 21 columns]

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import pandas as pd

```
import numpy as np
import matplotlib.pyplot as plt
from sklearn.linear model import LogisticRegression
from sklearn.metrics import classification report, confusion matrix
df = pd.read csv('weatherAUS.csv')
df.head()
to drop = ['Location', 'Date']
df.drop(to_drop, inplace=True, axis=1)
df['RainToday'] = df['RainToday'].fillna('No')
df['RainTomorrow'] = df['RainTomorrow'].fillna('No')
missing values numeric features = [col for col in df.columns if (df.isnull().sum()[c
def impute means(df, missing values columns):
    data = df.copy()
    '''Filling missing values with mean'''
    for col in missing_values_columns:
        data[col] = data[col].fillna(data[col].mean())
    return data
df = impute_means(df,missing_values_numeric_features)
df.isnull().sum()
print(df)
df.plot(x="Rainfall", y="Humidity9am", kind="scatter")
df.head()
df.info()
x = np.arange(10).reshape(-1, 1)
y = np.array([0, 0, 0, 0, 1, 1, 1, 1, 1, 1])
df = LogisticRegression(solver= 'liblinear', random state=0).fit(x,y)
df.fit(x, y)
df.classes
df.intercept
df.coef
df.predict_proba(x)
df.predict(x)
df.score(x, y)
confusion_matrix(y, df.predict(x))
```

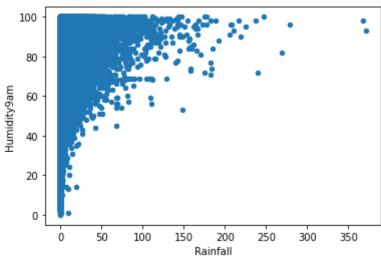
| | MinTemp | MaxTemp | Rainf | fall E | Evapor | ation | Sunshi | ne Wind | GustDir | \ | |
|----------|-----------|-------------|--------|----------|--------|-------|----------|---------|----------|-----|---|
| 0 | 13.4 | 22.900000 | -10 | 0.6 | _ | 68232 | 7.6111 | | W | ` | |
| 1 | 7.4 | 25.100000 | | 0.0 | | 68232 | 7.6111 | | WNW | | |
| 2 | 12.9 | 25.700000 | | 0.0 | | 68232 | 7.6111 | | WSW | | |
| 3 | 9.2 | 28.000000 | | 0.0 | | 68232 | 7.6111 | | NE | | |
| 4 | 17.5 | 32.300000 | | 1.0 | | 68232 | 7.6111 | | W | | |
| • • • | ••• | • • • | | • • • | | • • • | | • • | • • • | | |
| 145455 | 2.8 | 23.400000 | | 0.0 | 5.4 | 68232 | 7.6111 | | E | | |
| 145456 | 3.6 | 25.300000 | | 0.0 | | 68232 | 7.6111 | | NNW | | |
| 145457 | 5.4 | 26.900000 | | 0.0 | | 68232 | 7.6111 | | N | | |
| 145458 | 7.8 | 27.000000 | | 0.0 | | 68232 | 7.6111 | | SE | | |
| 145459 | 14.9 | 23.221348 | | 0.0 | | 68232 | 7.6111 | | NaN | | |
| | | | | | | | | | | | |
| | WindGustS | Speed WindD | ir9am | WindDi | r3pm | Wind | Speed9am | | Humidity | 9am | \ |
| 0 | 44.0 | 00000 | W | | WNW | | 20.0 | • • • | 7 | 1.0 | |
| 1 | 44.0 | 00000 | NNW | | WSW | | 4.0 | • • • | 4 | 4.0 | |
| 2 | 46.0 | 00000 | W | | WSW | | 19.0 | | 3 | 8.0 | |
| 3 | 24.0 | 00000 | SE | | E | | 11.0 | | 4 | 5.0 | |
| 4 | 41.0 | 00000 | ENE | | NW | | 7.0 | • • • | 8 | 2.0 | |
| | | • • • | | | | | | • • • | | | |
| 145455 | 31.0 | 00000 | SE | | ENE | | 13.0 | • • • | 5 | 1.0 | |
| 145456 | 22.0 | 00000 | SE | | N | | 13.0 | | 5 | 6.0 | |
| 145457 | 37.0 | 00000 | SE | | WNW | | 9.0 | • • • | 5 | 3.0 | |
| 145458 | 28.0 | 00000 | SSE | | N | | 13.0 | • • • | 5 | 1.0 | |
| 145459 | 40.0 | 03523 | ESE | | ESE | | 17.0 | | 6 | 2.0 | |
| | | | | | | | | | | | |
| | Humidity3 | | | Press | sure3p | | | Cloud3p | | | \ |
| 0 | | | .007.7 | | 1007. | | 000000 | 4.5099 | | . 9 | |
| 1 | | | .010.6 | | 1007. | | 447461 | 4.5099 | | . 2 | |
| 2 | | | .007.6 | | 1008. | | 447461 | 2.0000 | | . 0 | |
| 3 | | | 017.6 | | 1012. | | 447461 | 4.5099 | | . 1 | |
| 4 | 33 | 3.0 1 | 010.8 | | 1006. | 0 7.0 | 000000 | 8.0000 | 0 17 | . 8 | |
| • • • | | • • • | | | | | • • • | | | • • | |
| 145455 | | | 024.6 | | 1020. | | 447461 | 4.5099 | | . 1 | |
| 145456 | | | .023.5 | | 1019. | | 447461 | 4.5099 | | .9 | |
| 145457 | | | 021.0 | | 1016. | | 447461 | 4.5099 | | • 5 | |
| 145458 | | | .019.4 | | 1016. | | 000000 | 2.0000 | | . 1 | |
| 145459 | 36 | 5.0 1 | .020.2 | | 1017. | 9 8.0 | 000000 | 8.0000 | 0 15 | .0 | |
| | Temp3pm | RainToday | Раірто | morrow | 7 | | | | | | |
| 0 | 21.8 | No | Naimi | No | | | | | | | |
| 1 | 24.3 | No | | No | | | | | | | |
| 2 | 23.2 | No | | No | | | | | | | |
| 3 | 26.5 | No | | No | | | | | | | |
| 4 | 29.7 | No | | No | | | | | | | |
| T | | | | | | | | | | | |
| 145455 | 22.4 | NO. | | N. | | | | | | | |
| 145455 | 24.5 | No No | | No No | | | | | | | |
| 145456 | 24.5 | NO No | | No | | | | | | | |
| 145457 | 26.0 | | | No | | | | | | | |
| 145458 | 20.9 | No No | | NC NC | | | | | | | |
| エオノマノフ | 2 U • J | 140 | | 14.0 | , | | | | | | |

[145460 rows x 21 columns]

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 145460 entries, 0 to 145459

Data columns (total 21 columns):

```
Column
                     Non-Null Count
                                       Dtype
 0
     MinTemp
                     145460 non-null
                                       float64
 1
     MaxTemp
                     145460 non-null
                                       float64
 2
     Rainfall
                     145460 non-null
                                       float64
 3
     Evaporation
                     145460 non-null
                                       float64
 4
     Sunshine
                     145460 non-null
                                       float64
 5
     WindGustDir
                                       object
                     135134 non-null
 6
     WindGustSpeed
                     145460 non-null
                                       float64
 7
     WindDir9am
                     134894 non-null
                                       object
 8
     WindDir3pm
                     141232 non-null
                                       object
                                       float64
 9
     WindSpeed9am
                     145460 non-null
 10
     WindSpeed3pm
                     145460 non-null
                                       float64
                     145460 non-null
 11
     Humidity9am
                                       float64
 12
     Humidity3pm
                     145460 non-null
                                       float64
 13
     Pressure9am
                     145460 non-null
                                       float64
 14
     Pressure3pm
                     145460 non-null
                                       float64
 15
     Cloud9am
                     145460 non-null
                                       float64
     Cloud3pm
                     145460 non-null
                                       float64
 16
 17
     Temp9am
                     145460 non-null
                                       float64
                                       float64
 18
     Temp3pm
                     145460 non-null
     RainToday
                     145460 non-null
                                       object
 19
 20
     RainTomorrow
                     145460 non-null
                                       object
dtypes: float64(16), object(5)
memory usage: 23.3+ MB
array([[3, 1],
       [0, 6]])
```



```
import pandas as pd
import numpy as np
import seaborn as sb
from sklearn.model selection import train test split
from sklearn.linear model import LinearRegression
from sklearn import tree
import pydotplus
from sklearn.tree import DecisionTreeRegressor
import matplotlib.pyplot as plt
import matplotlib.image as pltimg
import matplotlib.pyplot as plt
from sklearn.neighbors import KNeighborsRegressor
```

```
df = pd.read csv('weatherAUS.csv')
print('\Data Frame \n', df)
# Data Exploration
df.head()
df.info()
df.describe()
df.shape
df.columns
# Data Cleaning
df = df.drop(columns=['Location', 'Date', 'WindGustDir', 'WindDir9am', 'WindDir3pm'])
print(df)
# Graphs
df.plot(x="Humidity9am", y="Rainfall", kind="scatter")
df.plot(x= "Humidity3pm", y="Rainfall", kind = "scatter")
# Linear Regression
print(df.head())
print('\n Data Frame Dimensions', df.shape)
X = df.iloc[:, 0:12]
y = df.iloc[:, 13]
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state
print('train size:', X_train.shape)
print('test size:', X_test.shape)
# Decision Tree
# we are going to try and create a decision tree
d = {'WindGustDir': 1}
df['WindGustDir'] = df['WindGustDir'].map(d)
d = \{ 'YES': 1, 'NO': 0 \}
```

```
7/24/22, 10:50 PM
                                      Homework: Machine Learning with Python - Colaboratory
   df['Go'] = df['Go'] \cdot map(d)
   print(df)
   features = ['Rainfall', 'Presure3pm', 'Pressure9am', 'WindDir3pm', 'WindDir9am', 'Win
   X = df[features]
   y = df['Go']
   print(X)
   print(y)
   dtree = DecisionTreeClassifier()
   dtree = dtree.fit(X, y)
   data = tree.export graphviz(dtree, out file=None, feature names=features)
   graph = pydotplus.graph_from_dot_data(data)
   # kNN
   regressor = KNeighborsRegressorn(n Rainfall=3)
   regressor.fit(X_train, y_train)
   X train scaled = scaler.transform(X train)
   X_test = scaler.transform(X_test)
   #Analysis
   # Based on the results used for this project I have came to the conclusion that there
   # Some data can be read and calculated properly but if not defined properly it will h
   # it is possiable to get whatever results needed. Python seems to run at a decent eno
   # from a lack of uncorprative data, or hard to translate. They both should work with
   # My Thought's
   # this Language is just as frustrating to work in as R. Though there are some things
   # However if it is to be belevied that Python is better than R for machine learning t
   # and conversions need to calculate data and display data. Even though most of my val
```

| \Data Frame | | | | | | | | | | | |
|---|---|---|--|--|--|--|--|---|--|--|--|
| | Date | Location | MinTemp | MaxTemp | Rainfall | Evaporat | ion \ | | | | |
| 0 | 2008-12-01 | Albury | 13.4 | 22.9 | 0.6 | Na | aN | | | | |
| 1 | 2008-12-02 | Albury | 7.4 | 25.1 | 0.0 | Na | aN | | | | |
| 2 | 2008-12-03 | Albury | 12.9 | 25.7 | 0.0 | Na | aN | | | | |
| 3 | 2008-12-04 | Albury | 9.2 | 28.0 | 0.0 | Na | aN | | | | |
| 4 | 2008-12-05 | Albury | 17.5 | 32.3 | 1.0 | Na | aN | | | | |
| | • • • | • • • | | | • • • | | • • | | | | |
| 145455 | 2017-06-21 | Uluru | 2.8 | 23.4 | 0.0 | Na | aN | | | | |
| 145456 | 2017-06-22 | Uluru | 3.6 | 25.3 | 0.0 | Na | aN | | | | |
| 145457 | 2017-06-23 | Uluru | 5.4 | 26.9 | 0.0 | Na | aN | | | | |
| 145458 | 2017-06-24 | Uluru | 7.8 | 27.0 | 0.0 | Na | aN | | | | |
| 145459 | 2017-06-25 | Uluru | 14.9 | NaN | 0.0 | Na | aN | | | | |
| | | | | | | | | | | | |
| | Sunshine Wir | ndGustDir | WindGust | Speed Wir | ndDir9am . | Humidi | _ | | | | |
| 0 | NaN | W | | 44.0 | | • • | 71.0 | | | | |
| 1 | NaN | WNW | | 44.0 | | • • • | 44.0 | | | | |
| 2 | NaN | WSW | | 46.0 | | • • • | 38.0 | | | | |
| 3 | NaN | NE | | 24.0 | SE . | • • • | 45.0 | | | | |
| 4 | NaN | W | | 41.0 | | • • • | 82.0 | | | | |
| • • • | • • • | • • • | | • • • | • • • • | • • • | • • • | | | | |
| 145455 | NaN | E | | 31.0 | | • • | 51.0 | | | | |
| 145456 | NaN | NNW | | 22.0 | SE . | • • | 56.0 | | | | |
| 145457 | NaN | N | | 37.0 | SE . | • • | 53.0 | | | | |
| 145458 | NaN | SE | | 28.0 | SSE . | • • | 51.0 | | | | |
| 145459 | NaN | NaN | | NaN | ESE . | | 62.0 | | | | |
| 143437 | Nan | IVALIV | | IVALIV | ESE . | • • • | 02.0 | | | | |
| 143437 | | |) am Drog | | | | | \ | | | |
| | Humidity3pm | Pressure | | sure3pm | Cloud9am | Cloud3pm | Temp9am | \ | | | |
| 0 | Humidity3pm 22.0 | Pressure | 7.7 | sure3pm 1007.1 | Cloud9am 8.0 | Cloud3pm NaN | Temp9am 16.9 | \ | | | |
| 0 1 | Humidity3pm 22.0 25.0 | Pressures | 7.7 0.6 | sure3pm 1007.1 1007.8 | Cloud9am 8.0 NaN | Cloud3pm NaN NaN | Temp9am 16.9 17.2 | \ | | | |
| 0 1 2 | Humidity3pm 22.0 25.0 30.0 | Pressure 1000 1010 1000 | 7.7 0.6 7.6 | sure3pm 1007.1 1007.8 1008.7 | Cloud9am 8.0 NaN NaN | Cloud3pm NaN NaN 2.0 | Temp9am 16.9 17.2 21.0 | \ | | | |
| 0 1 2 3 | Humidity3pm 22.0 25.0 30.0 16.0 | Pressure 1007 1010 1007 1017 | 7.7).6 7.6 | sure3pm 1007.1 1007.8 1008.7 1012.8 | Cloud9am 8.0 NaN NaN NaN | Cloud3pm NaN NaN 2.0 NaN | Temp9am 16.9 17.2 21.0 18.1 | \ | | | |
| 0 1 2 | Humidity3pm 22.0 25.0 30.0 16.0 33.0 | Pressure 1000 1010 1000 1010 1010 | 7.7 0.6 7.6 7.8 | sure3pm 1007.1 1007.8 1008.7 | Cloud9am 8.0 NaN NaN NaN 7.0 | Cloud3pm NaN NaN 2.0 NaN 8.0 | Temp9am 16.9 17.2 21.0 18.1 17.8 | \ | | | |
| 0 1 2 3 4 | Humidity3pm 22.0 25.0 30.0 16.0 33.0 | Pressure 1000 1010 1000 1011 1010 | 7.7 0.6 7.6 7.6 | sure3pm 1007.1 1007.8 1008.7 1012.8 1006.0 | Cloud9am 8.0 NaN NaN NaN 7.0 | Cloud3pm NaN NaN 2.0 NaN 8.0 | Temp9am 16.9 17.2 21.0 18.1 17.8 | \ | | | |
| 0 1 2 3 4 | Humidity3pm 22.0 25.0 30.0 16.0 33.0 24.0 | Pressures 1007 1010 1007 1017 1010 | 7.7 0.6 7.6 7.6 0.8 | sure3pm 1007.1 1007.8 1008.7 1012.8 1006.0 | Cloud9am 8.0 NaN NaN NaN 7.0 NaN | Cloud3pm NaN NaN 2.0 NaN 8.0 NaN | Temp9am 16.9 17.2 21.0 18.1 17.8 10.1 | \ | | | |
| 0 1 2 3 4 145455 145456 | Humidity3pm 22.0 25.0 30.0 16.0 33.0 24.0 21.0 | Pressure 9 1007 1010 1007 1017 1010 1024 1025 | 7.7 7.6 7.6 7.8 4.6 3.5 | sure3pm 1007.1 1007.8 1008.7 1012.8 1006.0 1020.3 1019.1 | Cloud9am 8.0 NaN NaN NaN 7.0 NaN | Cloud3pm NaN NaN 2.0 NaN 8.0 NaN | Temp9am 16.9 17.2 21.0 18.1 17.8 10.1 10.9 | \ | | | |
| 0 1 2 3 4 145455 145456 145457 | Humidity3pm 22.0 25.0 30.0 16.0 33.0 24.0 21.0 24.0 | Pressures 1007 1010 1007 1017 1010 1024 1023 | 7.7 0.6 7.6 7.6 0.8 4.6 3.5 | sure3pm 1007.1 1007.8 1008.7 1012.8 1006.0 1020.3 1019.1 1016.8 | Cloud9am 8.0 NaN NaN NaN 7.0 NaN NaN | Cloud3pm NaN NaN 2.0 NaN 8.0 NaN NaN NaN | Temp9am 16.9 17.2 21.0 18.1 17.8 10.1 10.9 12.5 | \ | | | |
| 0 1 2 3 4 145455 145456 145457 145458 | Humidity3pm 22.0 25.0 30.0 16.0 33.0 24.0 21.0 24.0 | Pressures 1007 1010 1007 1017 1010 1024 1023 1023 | 7.7 0.6 7.6 7.6 0.8 4.6 3.5 | sure3pm 1007.1 1007.8 1008.7 1012.8 1006.0 1020.3 1019.1 1016.8 1016.5 | Cloud9am 8.0 NaN NaN 7.0 NaN NaN NaN NaN NaN NaN NaN NaN NaN | Cloud3pm NaN NaN 2.0 NaN 8.0 NaN NaN NaN NaN NaN 2.0 | Temp9am 16.9 17.2 21.0 18.1 17.8 10.1 10.9 12.5 15.1 | | | | |
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[145460 rows x 23 columns]

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 145460 entries, 0 to 145459

| Data # | columns (total | | umns): | Dty | pe | | | |
|-----------|-----------------|--------------|-----------------|---------|------------|------------|--------------|--------|
| | | | | | | | | |
| 0 | Date | 145460 | non-null | obj | ect | | | |
| 1 | Location | 145460 | non-null | obj | ect | | | |
| 2 | MinTemp | 143975 | non-null | | at64 | | | |
| 3 | MaxTemp | | non-null | | at64 | | | |
| 4 | Rainfall | 142199 | non-null | | at64 | | | |
| 5 | Evaporation | | non-null | | at64 | | | |
| 6 | Sunshine | | on-null | | at64 | | | |
| 7 | WindGustDir | | non-null | _ | | | | |
| 8 | WindGustSpeed | | non-null | | at64 | | | |
| 9 | WindDir9am | | non-null | - | | | | |
| 10 | WindDir3pm | | non-null | - | | | | |
| 11 | WindSpeed9am | | non-null | | at64 | | | |
| 12 | WindSpeed3pm | | non-null | | at64 | | | |
| 13 | Humidity9am | | non-null | | at64 | | | |
| 14 | Humidity3pm | | non-null | | at64 | | | |
| 15 | Pressure9am | | non-null | | at64 | | | |
| 16 | Pressure3pm | | non-null | | at64 | | | |
| 17 | Cloud9am | | on-null | | at64 | | | |
| 18 | Cloud3pm | | on-null | | at64 | | | |
| 19 | Temp9am | | non-null | | at64 | | | |
| 20 | Temp3pm | | non-null | | at64 | | | |
| 21 | RainToday | | non-null | - | | | | |
| 22 | RainTomorrow | | non-null | obj | ect | | | |
| | es: float64(16) | | 2(/) | | | | | |
| memoi | ry usage: 25.5+ | |) o i n f o l l | Errom | 020+ion | Cunabino | WindCug+Cnoc | ۱ اه د |
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| 1 2 | 12.9 | 25.7 | 0.0 | | NaN | NaN NaN | 46. | |
| 3 | 9.2 | 28.0 | 0.0 | | NaN | NaN | 24. | |
| 4 | 17.5 | 32.3 | 1.0 | | NaN | Nan | 41. | |
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| 14545 | | 23.4 | 0.0 | | NaN | naN | 31. | |
| 14545 | | 25.3 | 0.0 | | NaN | Nan | 22. | |
| 14545 | | 26.9 | 0.0 | | NaN | NaN | 37. | |
| 14545 | | 27.0 | 0.0 | | NaN | NaN | 28. | |
| 14545 | | NaN | 0.0 | | NaN | NaN | Na Na | |
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| | WindSpeed9a | m WindS | Speed3pm | Humi | dity9am | Humiditv3 | om Pressure | ∂am \ |
| 0 | 20. | | 24.0 | | 71.0 | 22 | | |
| 1 | 4. | | 22.0 | | 44.0 | 25 | | |
| 2 | 19. | | 26.0 | | 38.0 | 30 | | |
| 3 | 11.0 | | 9.0 | | 45.0 | 16 | | |
| 4 | 7.0 | | 20.0 | | 82.0 | 33 | | |
| | | | | | | | | |
| 14545 | | | 11.0 | | 51.0 | 24 | | |
| 14545 | 56 13. | 0 | 9.0 | | 56.0 | 21 | | |
| 14545 | | | 9.0 | | 53.0 | 24 | | |
| 14545 | | | 7.0 | | 51.0 | 24 | | |
| 14545 | | | 17.0 | | 62.0 | 36 | | |
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| | Pressure3pm | Cloud9 | am Clou | d3pm | Temp9am | Temp3pm I | RainToday \ | |
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[145460 rows x 18 columns]
   MinTemp
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                      Rainfall Evaporation Sunshine WindGustSpeed
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   WindSpeed9am WindSpeed3pm Humidity9am Humidity3pm Pressure9am
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                 Cloud9am Cloud3pm
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                                                                  No
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 Data Frame Dimensions (145460, 18)
train size: (116368, 12)
test size: (29092, 12)
KeyError
                                              Traceback (most recent call last)
/usr/local/lib/python3.7/dist-packages/pandas/core/indexes/base.py in
get_loc(self, key, method, tolerance)
   3360
                      try:
-> 3361
                          return self. engine.get loc(casted key)
   3362
                      except KeyError as err:
```

```
4 frames
```

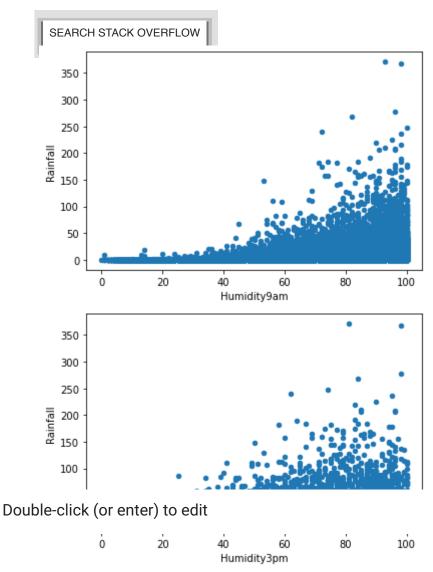
raise KeyError(key) from err

if is scalar(key) and isna(key) and not self.hasnans:

KeyError: 'WindGustDir'

-> 3363

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1 1s completed at 10:49 PM

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