

File Edit Selection View Go Run Terminal Help Pollution_Rohit_Rawat.ipynb - Untitled (Workspace) - Visual Studio Code

EXPLORER

OPEN EDITORS

UNTITLED (WORKSPACE)

Rohit

angular

node_modules

src

app

card

condition

contact

filenotfound

form

form.component.css U

form.component.html U

form.component.ts U

modal

projectwork

projectwork.component... U

projectwork.component... U

projectwork.component... U

resurant

OUTLINE

TIMELINE

TOMCAT SERVERS

Pollution_Rohit_Rawat.ipynb

import numpy as npimport matplotlib.pyplot as pltimport pandas as pdfrom sklearn import preprocessing...

+ Code + Markdown Run All Clear Outputs of All Cells Outline

Python 3.9.6 64-bit

```
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
from sklearn import preprocessing

label_encoder = preprocessing.LabelEncoder()

# Encode labels in column 'species'.

# Importing the dataset
df = pd.read_csv('Desktop/pollution.csv')
df['Air Quality']= label_encoder.fit_transform(df['Air Quality'])
X=df.iloc[:, :-1]
y=df.iloc[:, -1]
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL JUPYTER C#

master* 0 0 0 11°C Cloudy 4:08 AM 01-Feb-22

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import numpy as npimport matplotlib.pyplot as pltimport pandas as pdfrom sklearn import preprocessing...

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Python 3.9.6 64-bit

X.head(3)

[26]

...

	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

+ Code + Markdown

```
from sklearn.preprocessing import OneHotEncoder
enc = OneHotEncoder()
# transforming the column after fitting
enc.fit_transform(X[['location']]).toarray()
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL JUPYTER C#

master* 0 0 0 11°C Cloudy 4:08 AM 01-Feb-22

Visual Studio Code interface showing a Jupyter Notebook titled "Pollution_Rohit_Rawat.ipynb". The notebook is running on a Jupyter Server (local) and contains Python code for data preprocessing and visualization.

Code Snippets:

```
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)
```

Output:

```
X.head(5)
```

month	year	SO2 µg/l	NO2µg/l	PM10 µg/l	PM2.5 µg/l	CO µg/l	O3 µg/l 8 HR	NH3 µg/l	AQI	0	1	2	3	4	5
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
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
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
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
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

Code Snippets:

```
y.head(5)
```

Visual Studio Code interface showing a Jupyter Notebook titled "Pollution_Rohit_Rawat.ipynb". The notebook is open in the "Code" view, displaying Python code for data analysis and machine learning.

The Explorer sidebar shows the file structure of the project, including folders like "angular", "node_modules", "src", "app", "card", "condition", "contact", "filenotfound", "form", "modal", "projectwork", and "resurant".

The Jupyter Notebook code includes the following sections:

- Importing Libraries:** `import numpy as np; import matplotlib.pyplot as plt; import pandas as pd; from sklearn import preprocessing...`
- Data Inspection:** `y.head(5)` displays the first 5 rows of the dataset.
- Dataset Splitting:** `# Splitting the dataset into the Training set and Test set` using `from sklearn.model_selection import train_test_split` and `X_train, X_test, y_train, y_test = train_test_split(X, y, test_size = 0.20, random_state = 0)`.
- Feature Scaling:** `# Feature Scaling` using `from sklearn.preprocessing import StandardScaler`.
- Model Fitting:** `# Fitting Decision Tree Classification to the Training set` using `from sklearn.tree import DecisionTreeClassifier` and `classifier = DecisionTreeClassifier(criterion = 'entropy', random_state = 0)`.
- Predicting Test Set Results:** `# Predicting the Test set results` using `y_pred = classifier.predict(X_test)`.
- Confusion Matrix and Accuracy Score:** `from sklearn.metrics import confusion_matrix` and `from sklearn.metrics import accuracy_score`.
- Printing Accuracy:** `#printing the accuracy of Decision tree` using `accuracy_score(y_test, y_pred)`.

The output of the notebook shows the first 5 rows of the dataset and the accuracy score of the Decision Tree model, which is 0.9895833333333334.

The bottom status bar indicates the current environment is "Jupyter Server: local" and the cell is "Cell 1 of 16". The system tray shows the date and time as "4:09 AM 01-Feb-22".

Visual Studio Code interface showing a Jupyter Notebook titled "Pollution_Rohit_Rawat.ipynb". The notebook is open in the "Code" view, displaying Python code for fitting an SVM model and predicting test set results.

The Explorer sidebar shows the file structure of the project, including folders like "angular", "node_modules", "src", "app", "card", "condition", "contact", "filenotfound", "form", "projectwork", and "resurant".

The Jupyter Notebook code includes the following cells:

```
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
from sklearn import preprocessing

# 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)
```

The output of the SVM model shows an accuracy score of 0.9739583333333334.

```
#Accuracy of SVM
accuracy_score(y_test, y_pred)
... 0.9739583333333334
```

The Jupyter Notebook also includes a cell for fitting a KNN model and predicting test set results, along with a cell for making the Confusion Matrix.

```
#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)

# Making the Confusion Matrix
from sklearn.metrics import confusion_matrix
cm = confusion_matrix(y_test, y_pred)

#Accuracy of knn
```

The interface also shows the "PROBLEMS" panel with 10 errors, the "OUTPUT" panel, and the "DEBUG CONSOLE". The status bar at the bottom indicates the current file is "Pollution_Rohit_Rawat.ipynb" and the workspace is "Untitled (Workspace)".

Visual Studio Code interface showing a Jupyter Notebook titled "Pollution_Rohit_Rawat.ipynb".

EXPLORER:

- OPEN EDITORS
- UNTITLED (WORKSPACE)
 - Rohit
 - angular
 - node_modules
 - src
 - app
 - card
 - condition
 - contact
 - filenotfound
 - form
 - form.component.css
 - form.component.html
 - form.component.ts
 - modal
 - projectwork
 - projectwork.component...
 - projectwork.component...
 - projectwork.component...
 - resurant

Code Editor:

```
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
from sklearn import preprocessing

# 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)

#Accuracy of knn
accuracy_score(y_test, y_pred)
```

Output: 0.875

Python 3.9.6 64-bit

PROBLEMS (10) OUTPUT DEBUG CONSOLE TERMINAL JUPYTER C#

master* 0 10 Rohit Jupyter Server: local Cell 1 of 16 11°C Cloudy 4:09 AM 01-Feb-22

Filename: New Microsoft Word Document.docx
Directory: C:\Users\Rohit Rawat\OneDrive\Documents
Template: C:\Users\Rohit
Rawat\AppData\Roaming\Microsoft\Templates\Normal.dotm
Title:
Subject:
Author: ROHIT RAWAT
Keywords:
Comments:
Creation Date: 01-Feb-22 4:04:00 AM
Change Number: 5
Last Saved On: 01-Feb-22 4:09:00 AM
Last Saved By: ROHIT RAWAT
Total Editing Time: 2 Minutes
Last Printed On: 01-Feb-22 4:09:00 AM
As of Last Complete Printing
Number of Pages: 5
Number of Words: 1 (approx.)
Number of Characters: 12 (approx.)