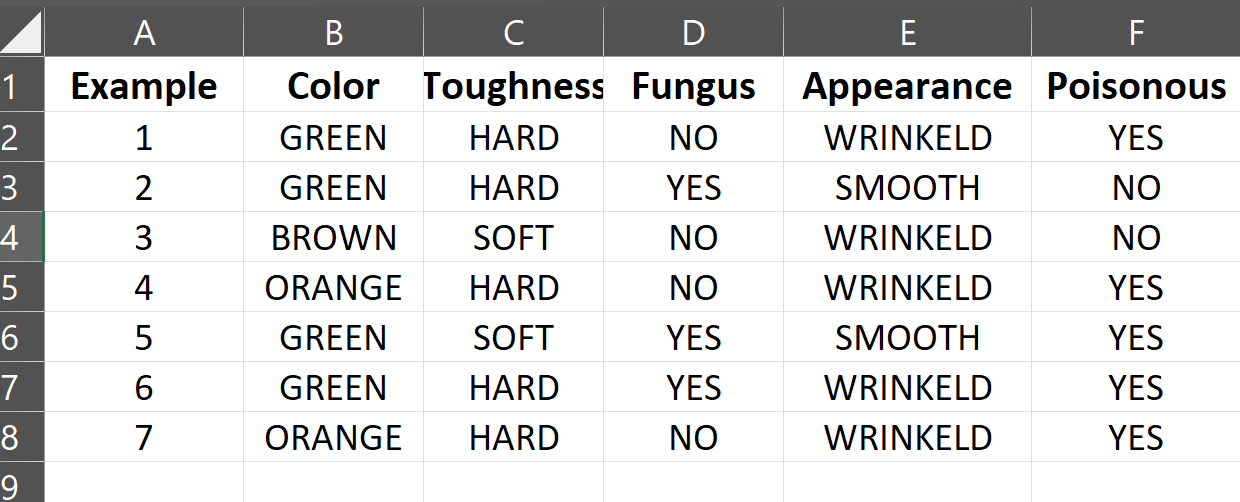
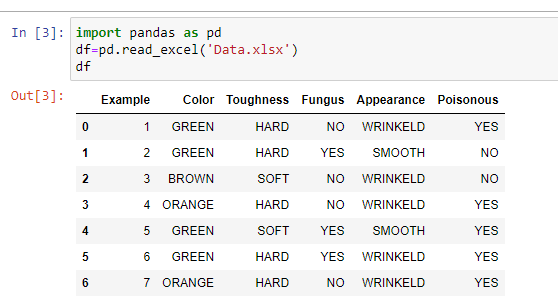
**LAB TEST – 1**

**SET - 1**

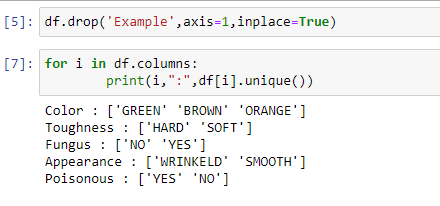
***Perform Find\_S Algorithm***

****

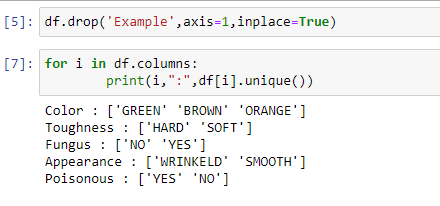
**1.Import and read the dataset**



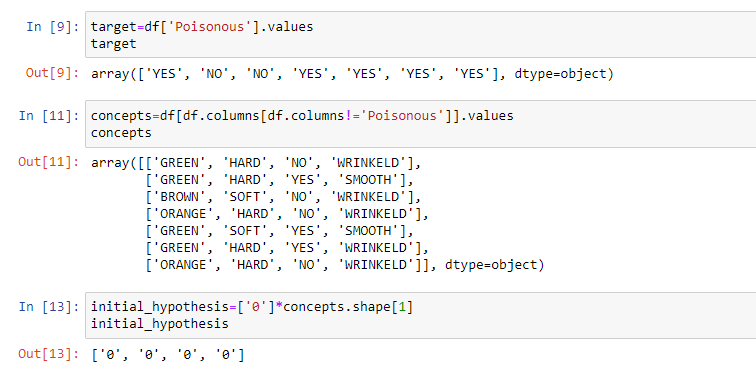
**2. Drop unnecessary columns**



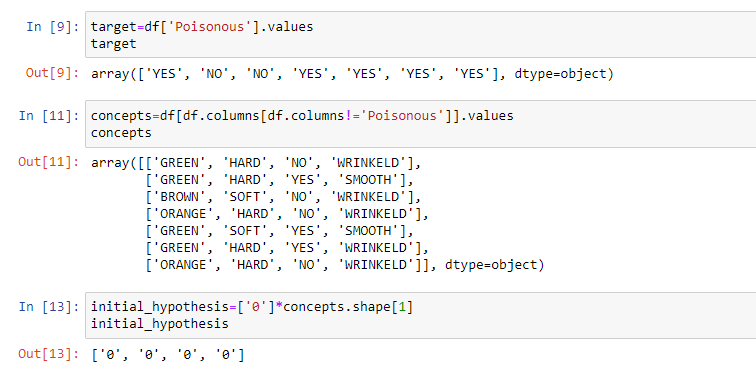
**3. Print unique values from the dataset**



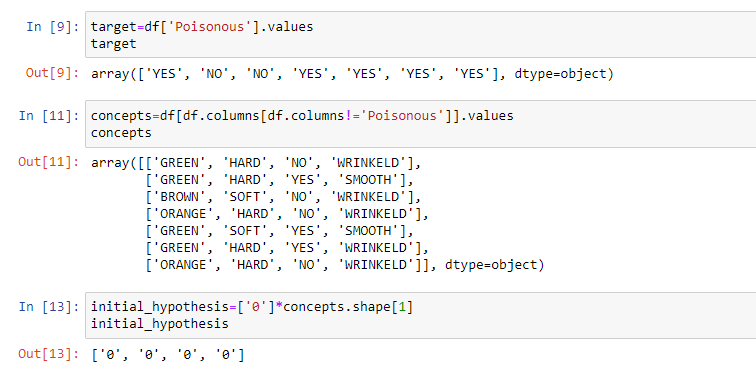
**4. Set the target variable as ‘Poisonous’**

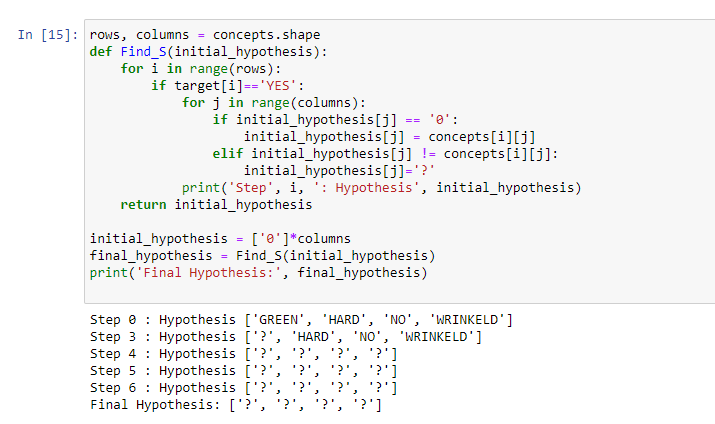


**5. Set all other columns as concepts (features)**

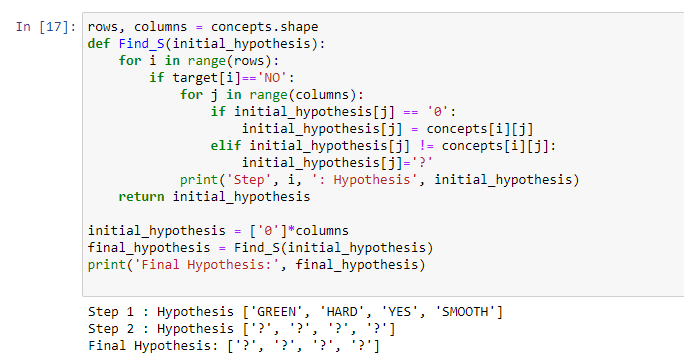


**6.** **Initialize the hypothesis as ‘0’**



**7. Implement the Find-S Algorithm for 'Poisonous' values**

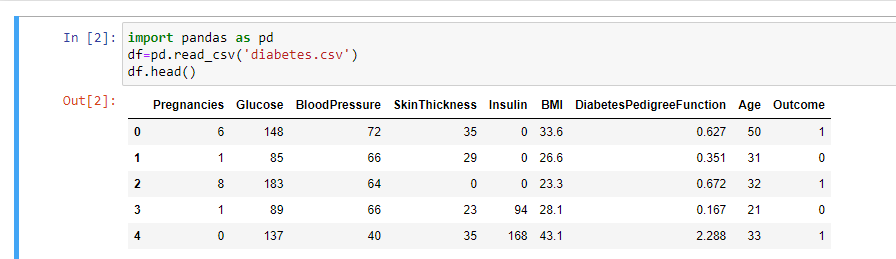
**7. Implement the Find-S Algorithm for 'Non-Poisonous' values.**



**SET - 2**

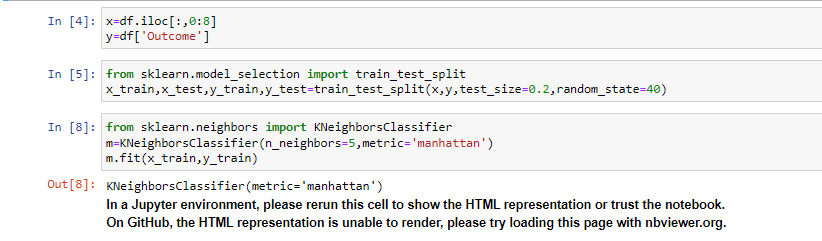
***Perform KNN classification using Diabetes.csv***

******

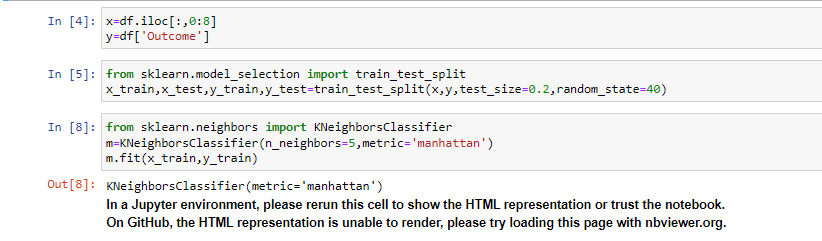
**1.Read the Diabetes CSV file and check for null values**



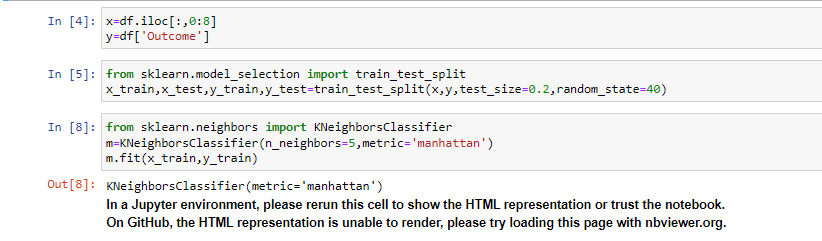
**2.Select features for training and set the target variable as Outcome**



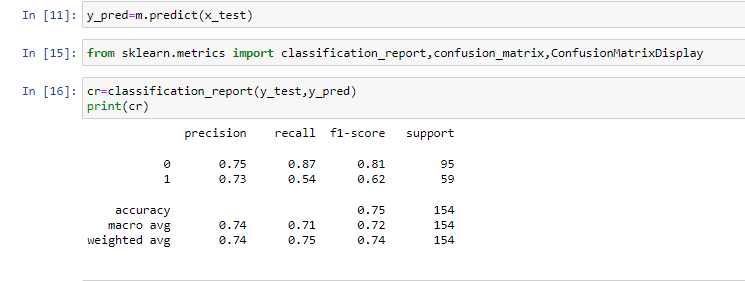
**3. Split data into 80% training and 20% testing using train\_test\_split**



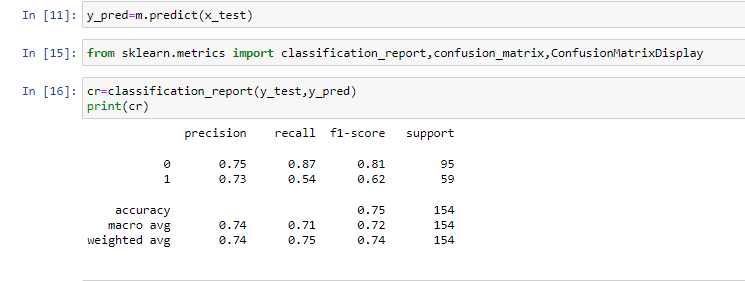
**4 .Train the model with N=5,Manhattan metric and 20% test data**

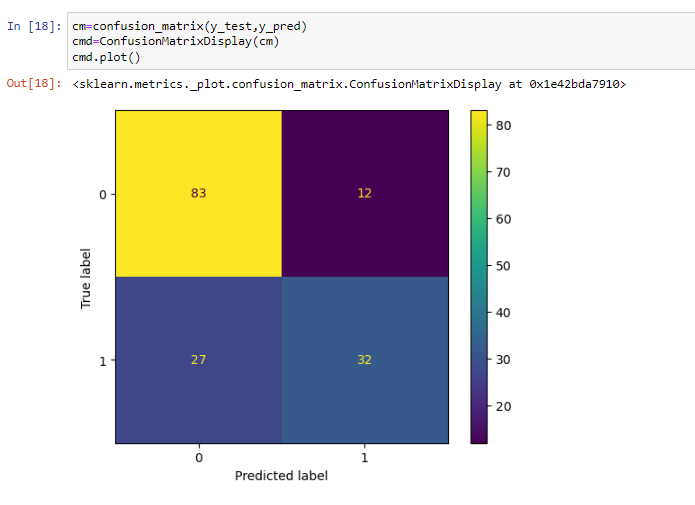


**5. Make predictions on the test data using a trained K-Nearest Neighbors (KNN) classifier**



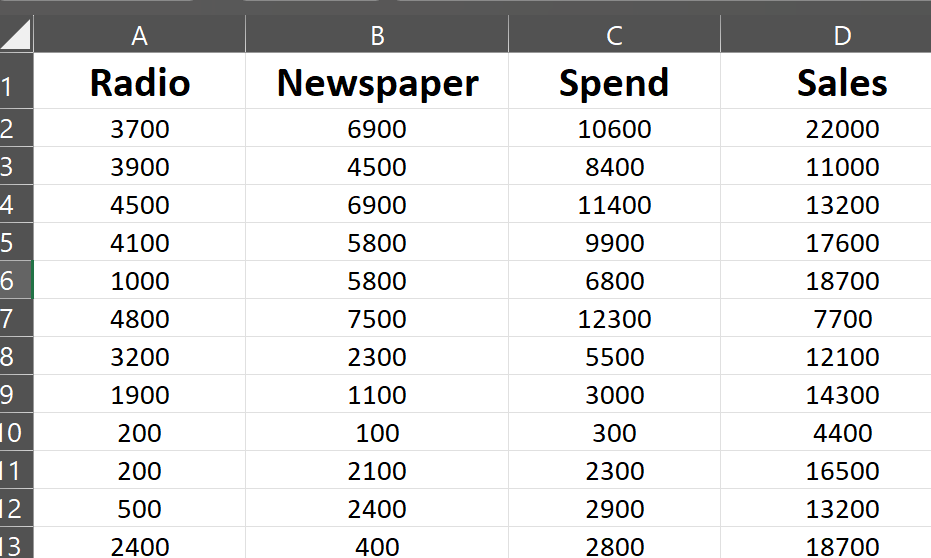
**6. Classification Report for Model Performance Evaluation**

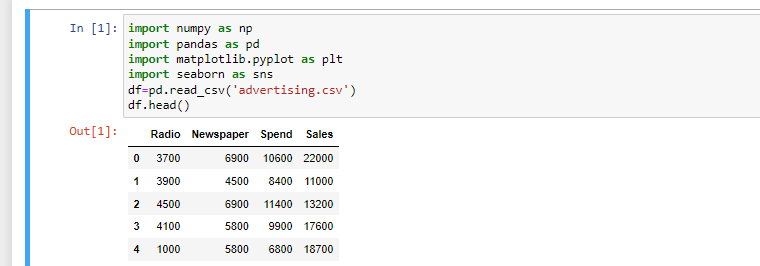


**6. Display the confusion matrix for predicted and actual values**

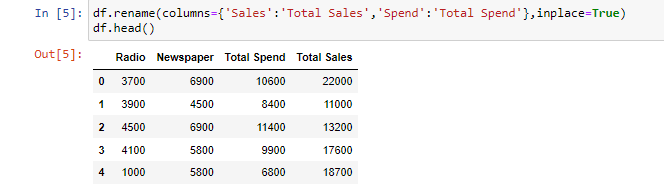
**SET - 3**

***Perform Linear Regression using advertising.csv***

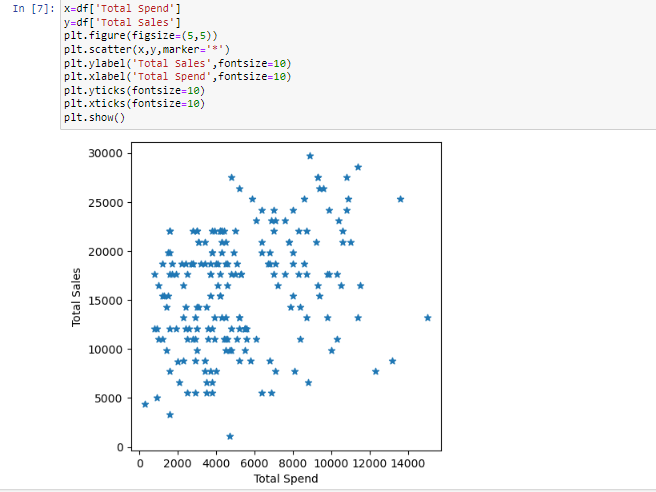
******

**1.Read the Advertising dataset**

**2.Rename the columns Sales to ‘Total Sales’ and Spend to ‘Total Spend'**



**3.Display a Scatter Plot for Total Sales and Total Spend**

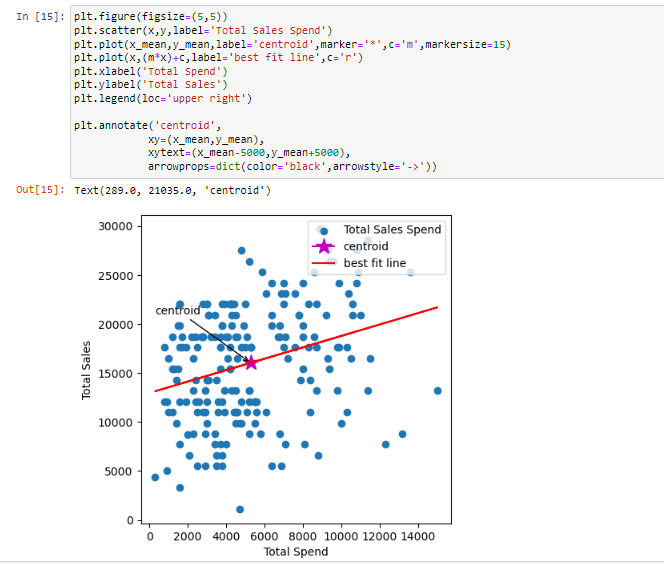


**4. Find the slope and intercept of the regression line**



**5. Calculate the centroid of the dataset**



**5. Display the centroid of the dataset**

**6. Predict values based on the centroid**

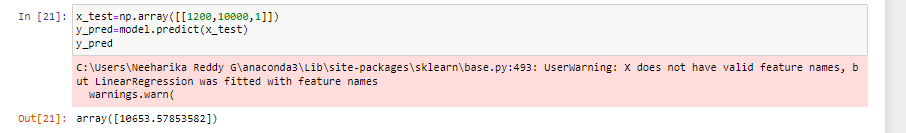
**6. Select features for training and testing**



**7. Perform Linear Regression**

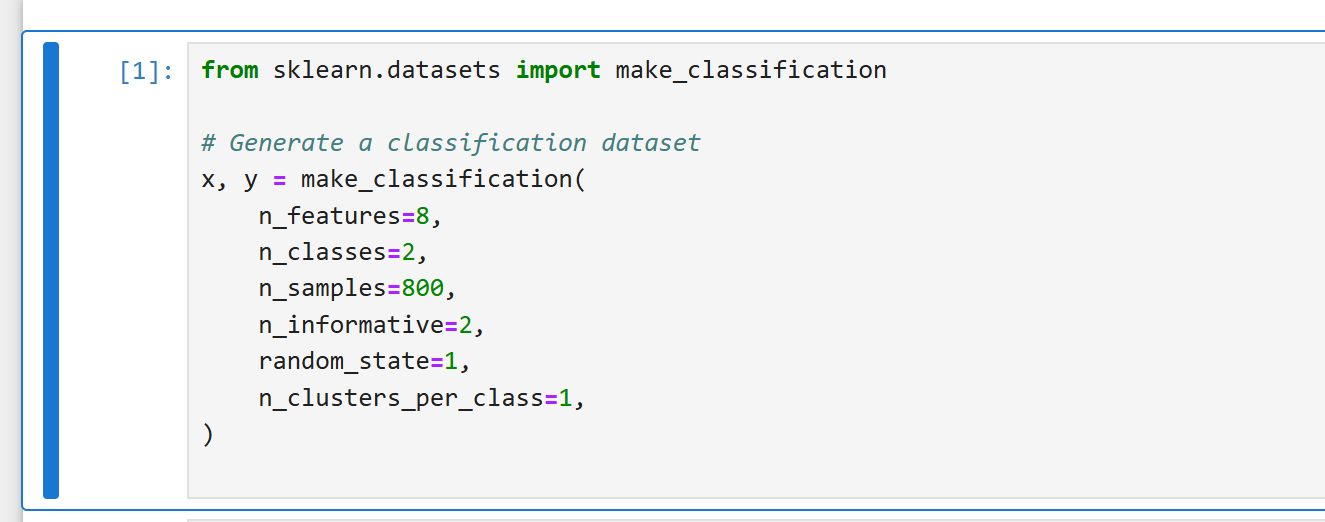


**8. Predict the values**

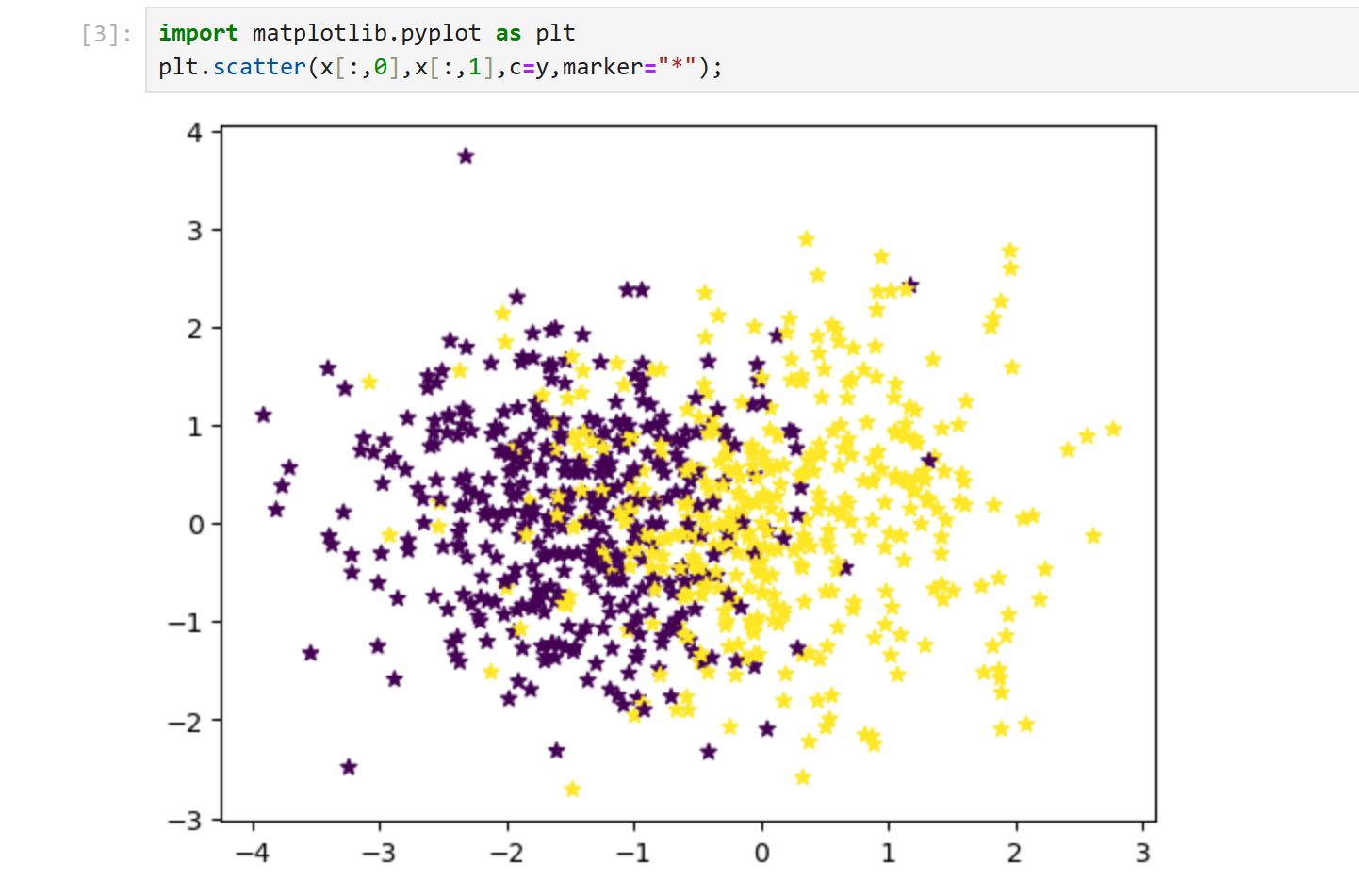


**SET - 4**

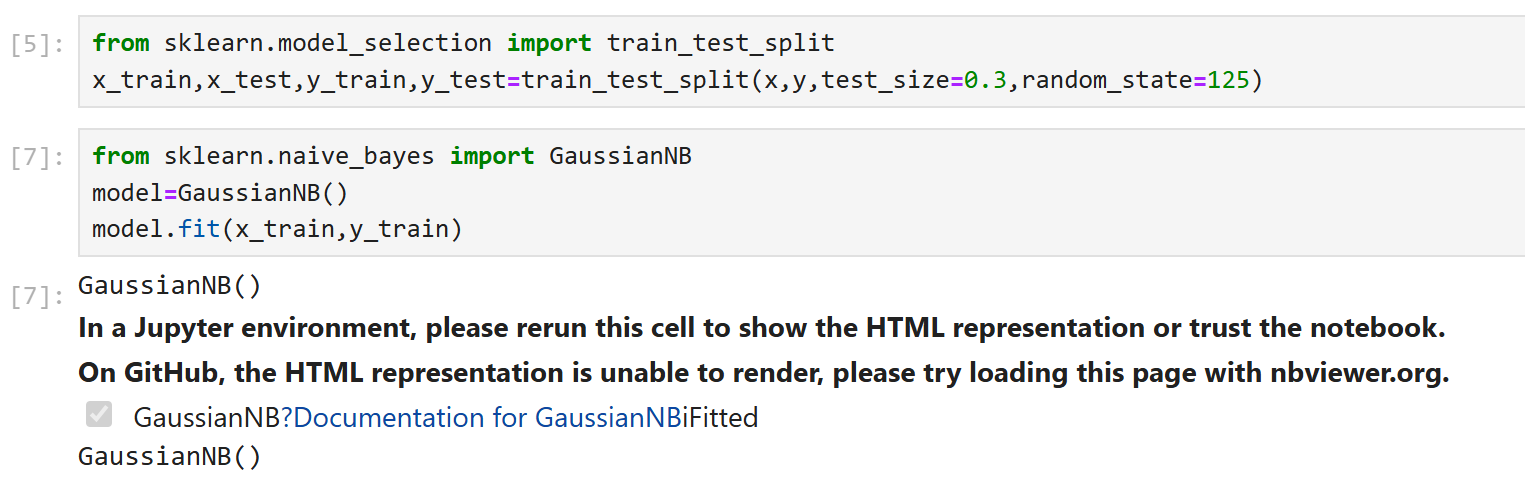
***Perform Naïve Bayes by creating synthetic dataset***

**1. Generate a classification dataset**

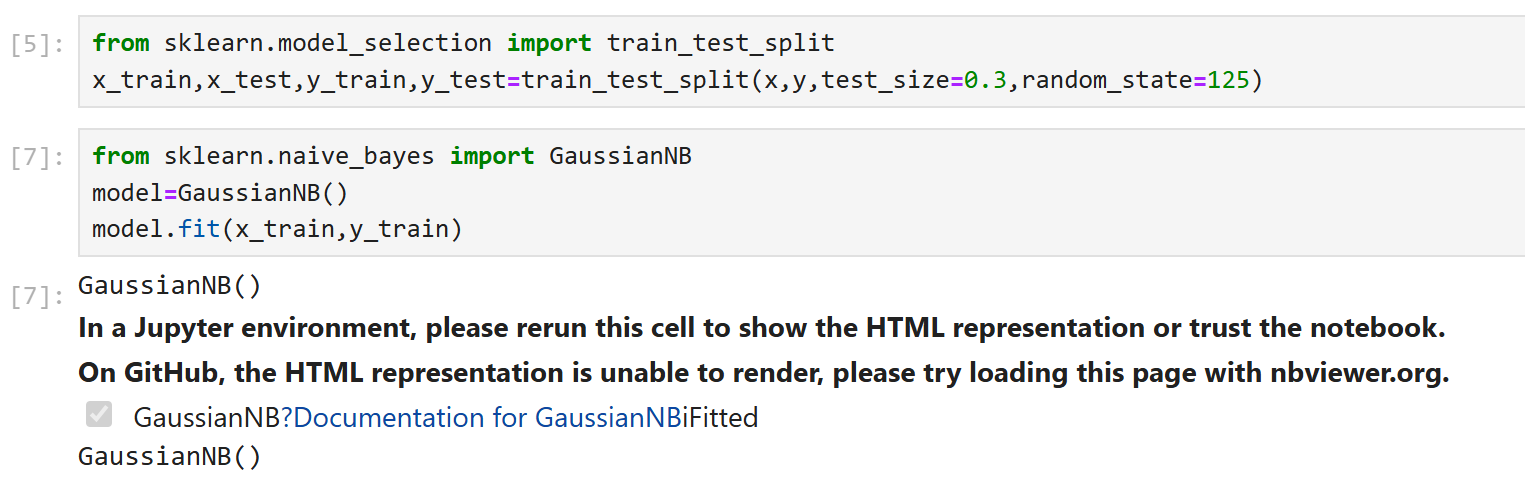
**2.Display a scatter plot**



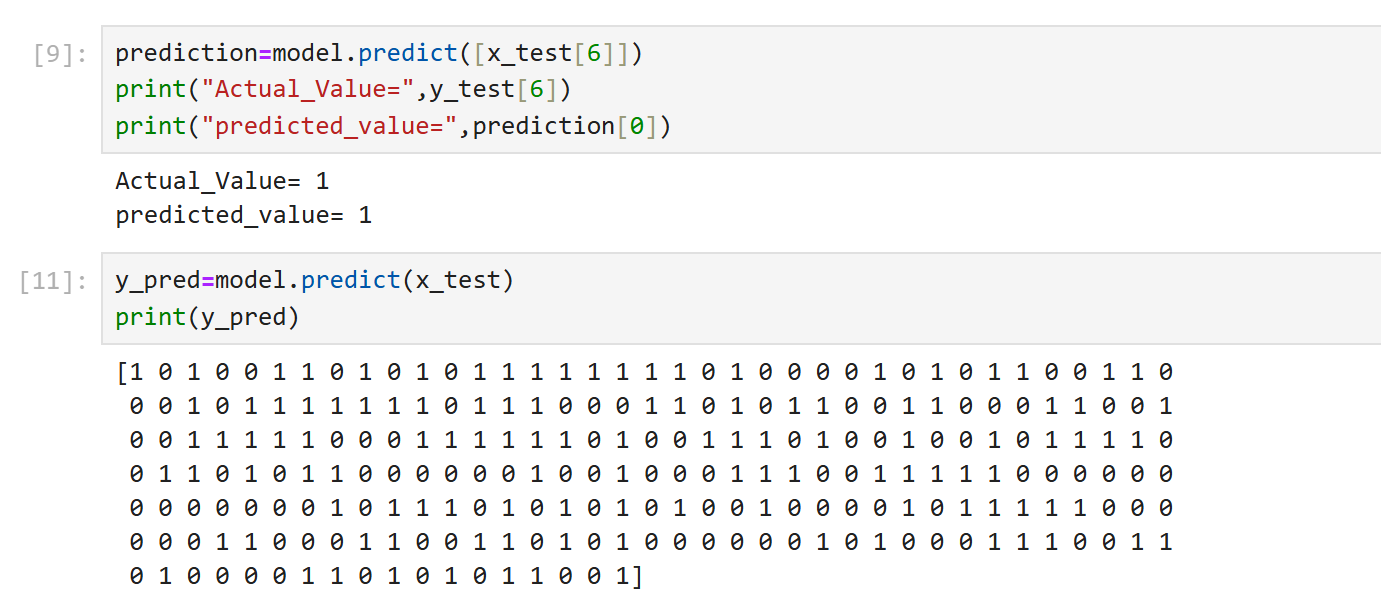
**3.Select features for training and testing**



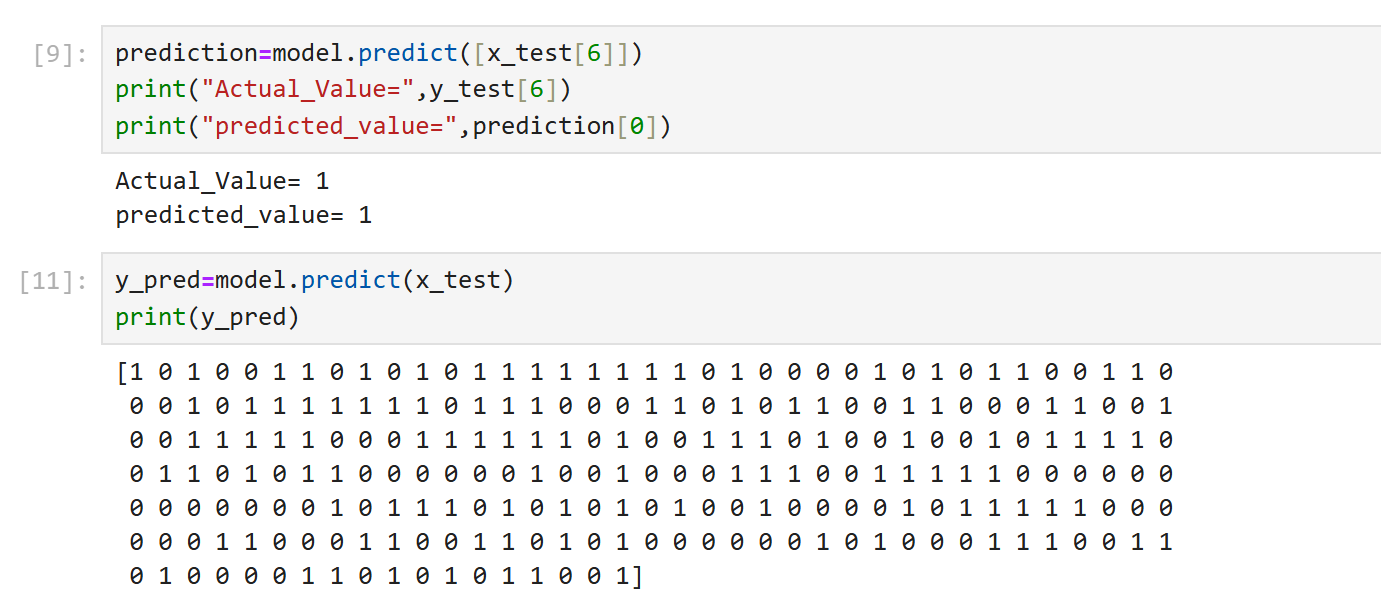
**4.Import the Naïve Bayes classifier**

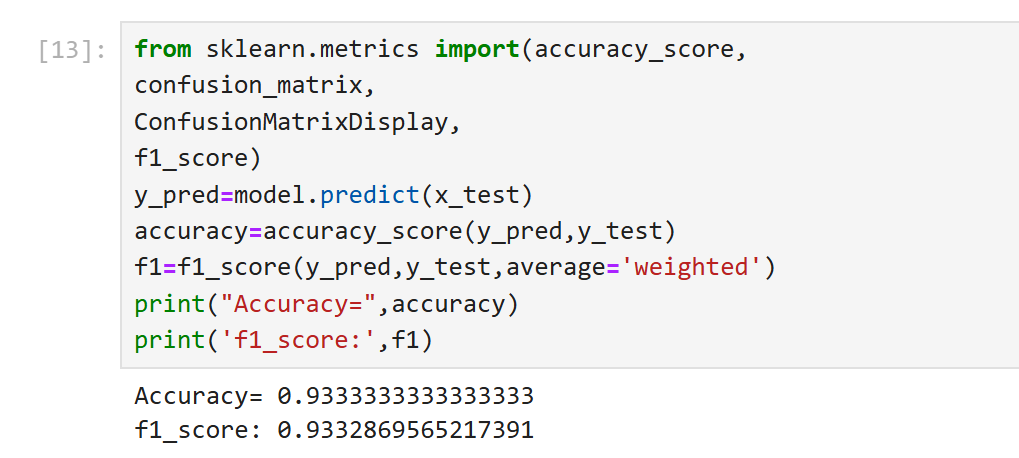


**5.Print actual and predicted values**

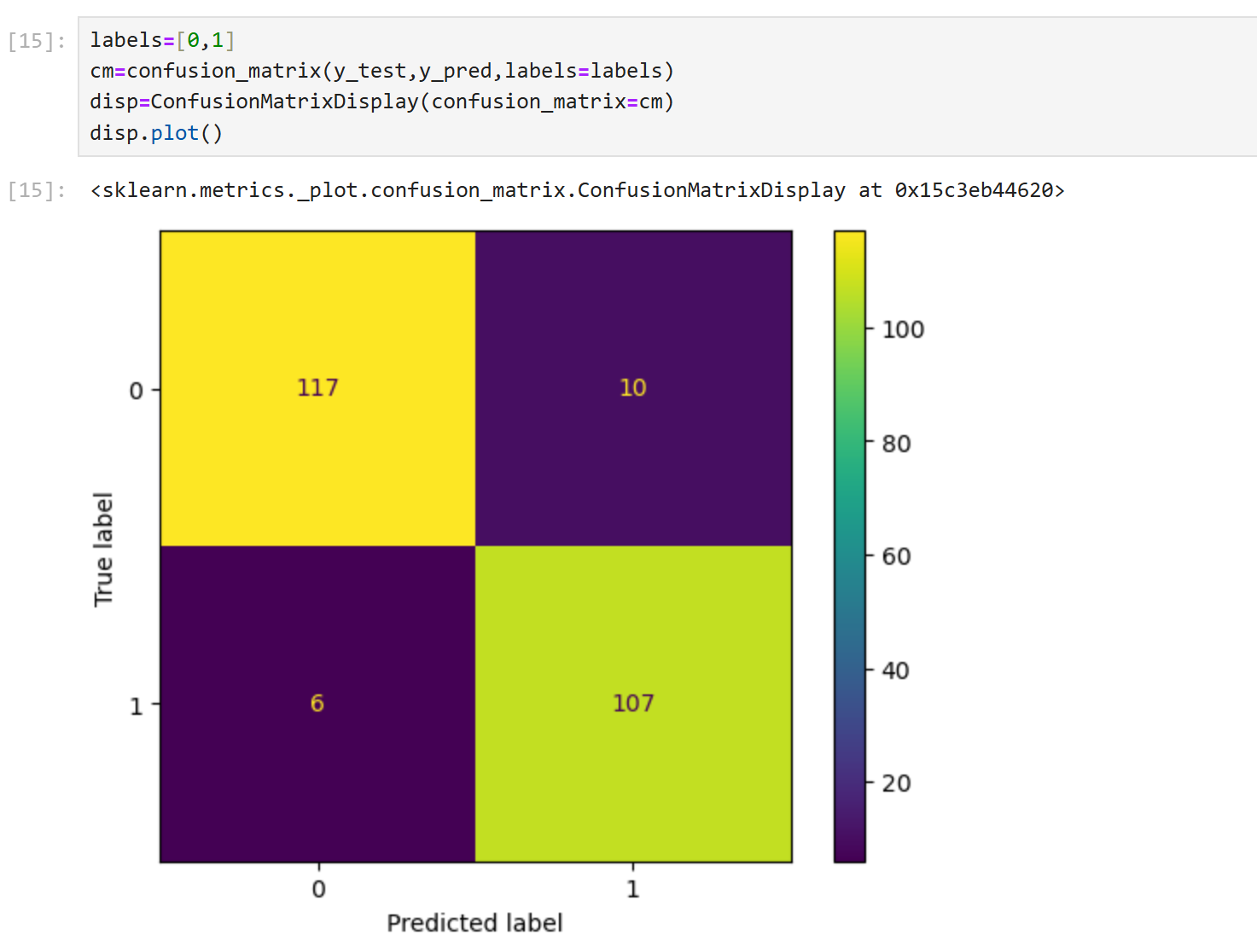


**6.Predicting the training data**



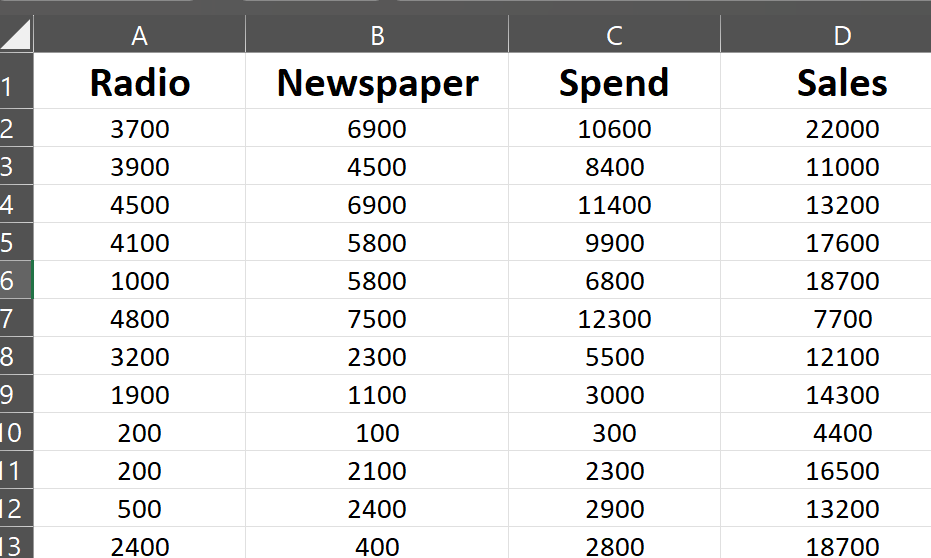
**7.** **Calculate the accuracy and F1 score**

**8. Display the confusion matrix for predicted and actual values**

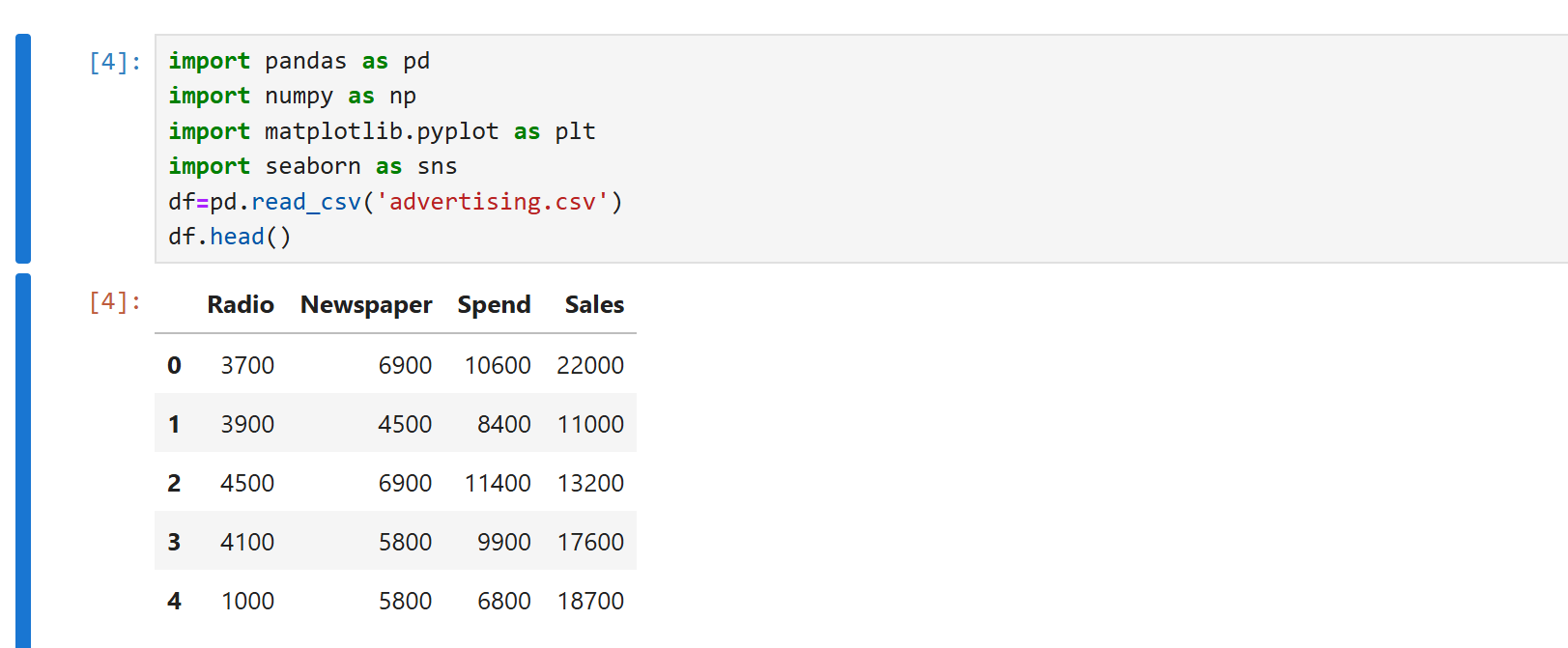


**SET - 5**

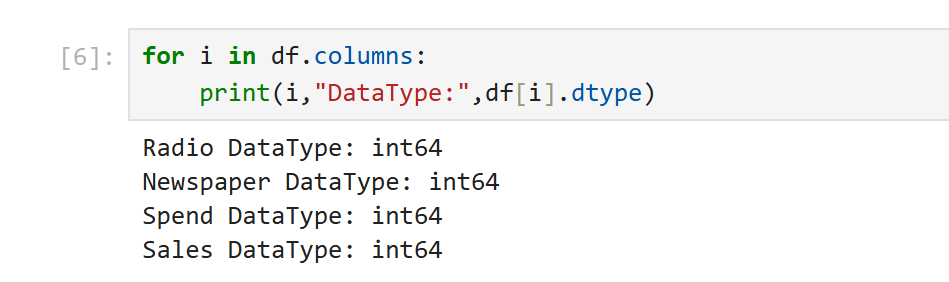
***Perform Linear Regression using advertising.csv***

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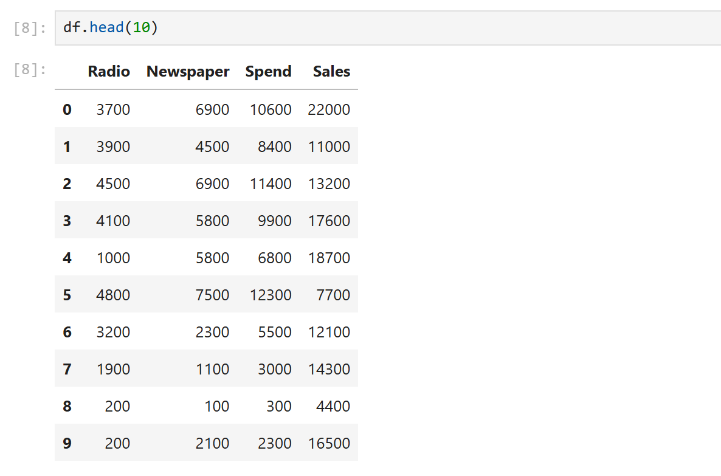
**1. Read the Advertising dataset**



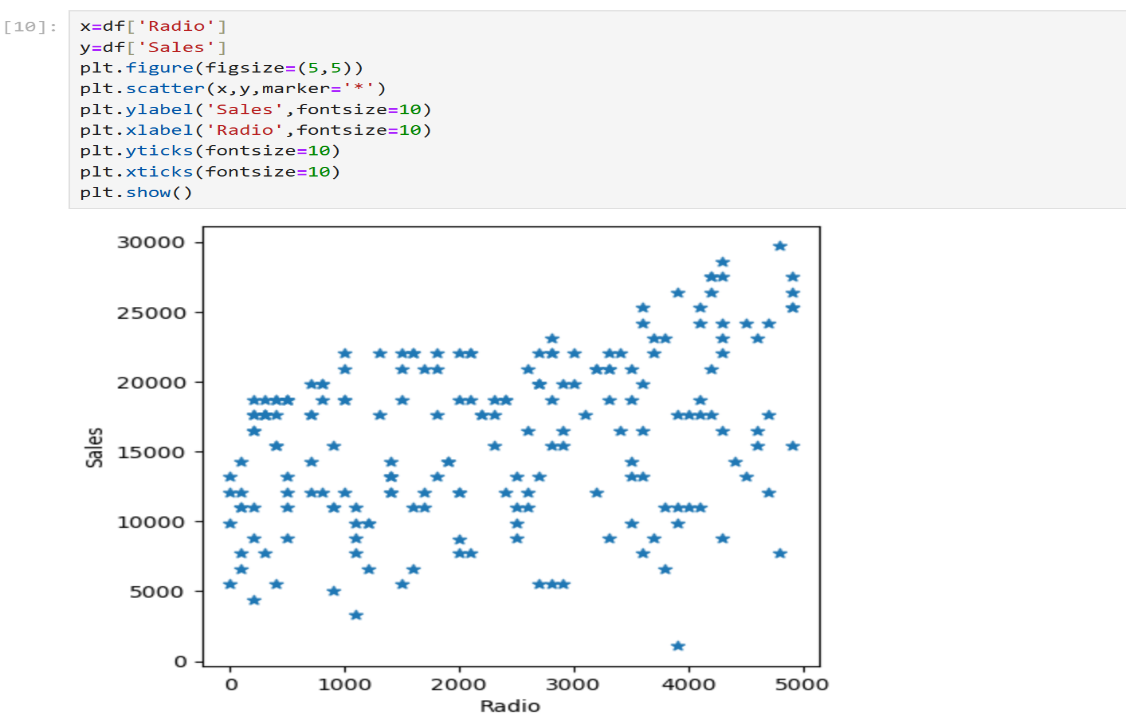
**2. Find the data type of the columns**



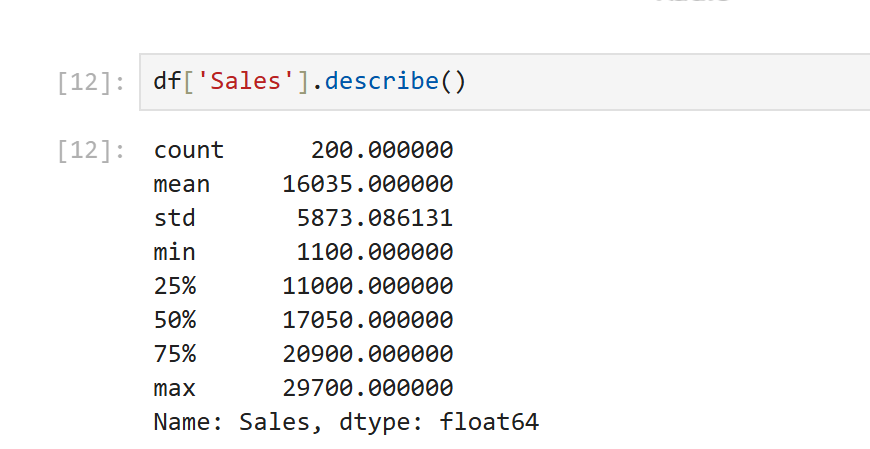
**3. Display the first 10 rows**



**4. Display a scatter plot for Radio and Sales**



**5. Perform statistical analysis on the dataset**



**5. Display a box plot for Sales**



**6.Select features for training and testing**



**7.Split data into 80% training and 20% testing using train\_test\_split**



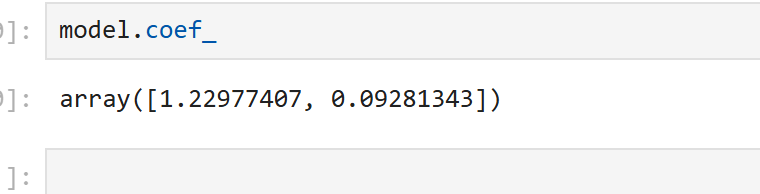
**8.Import Linear Regression**



**9.Predicting the values**

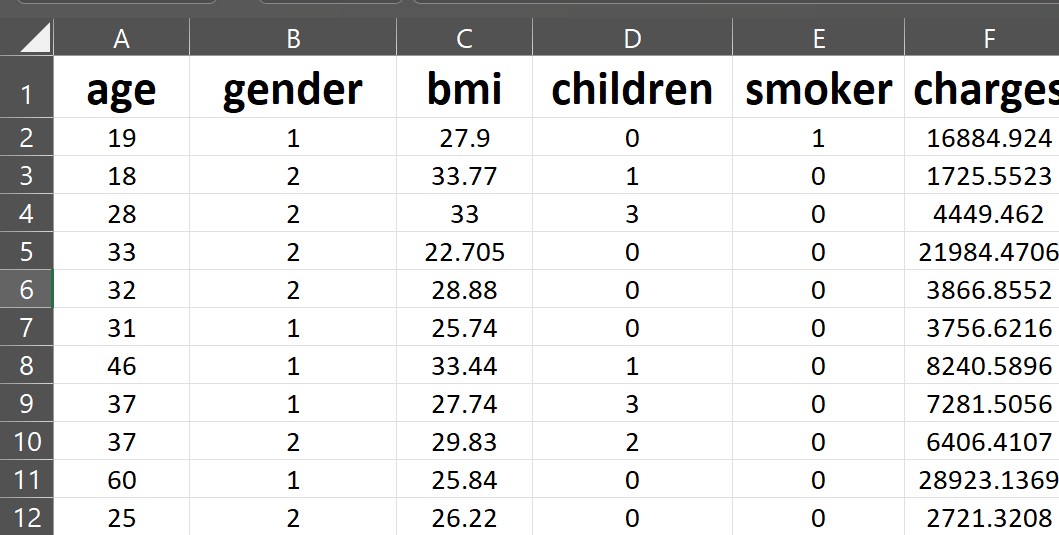


**10.Find coefficients**

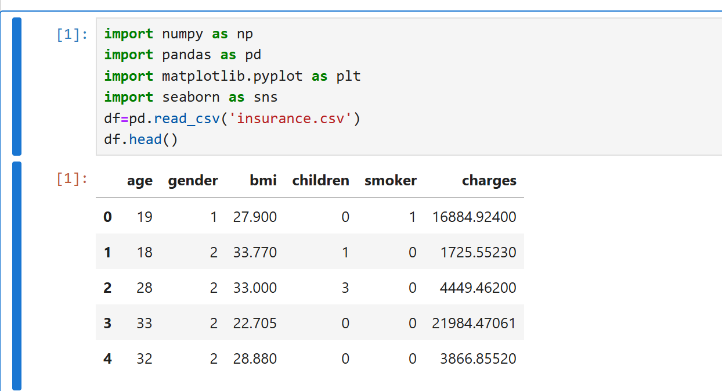


**SET - 6**

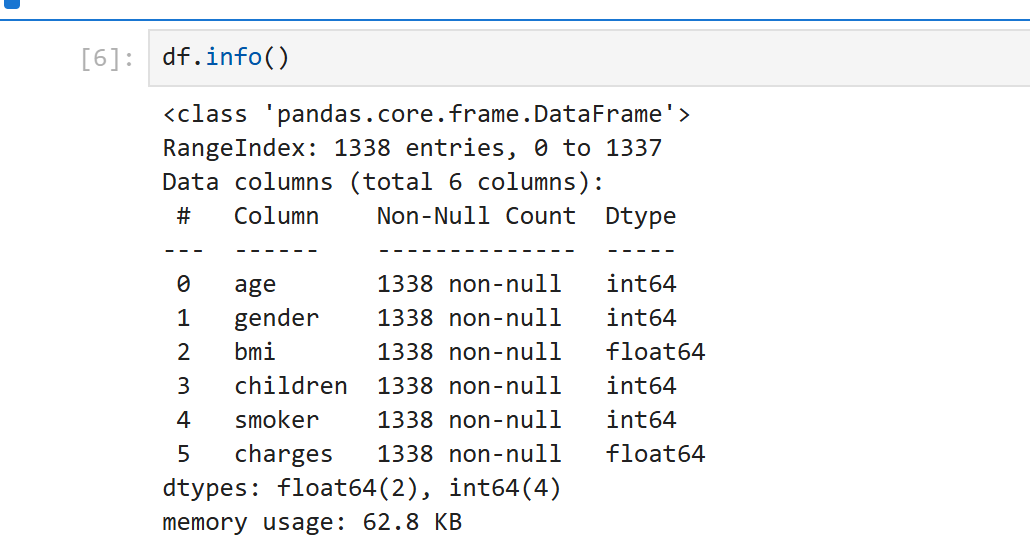
***Perform Linear Regression using insurance.csv***

******

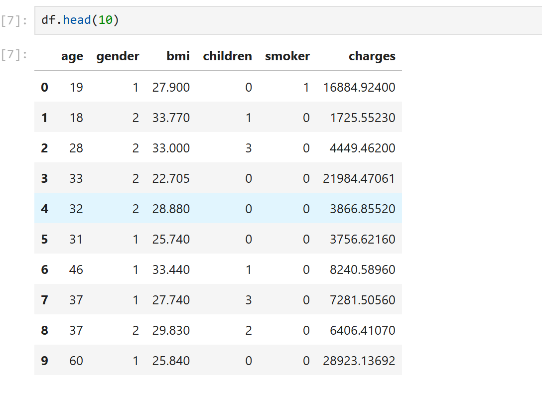
**1** **Read the Insurance dataset**



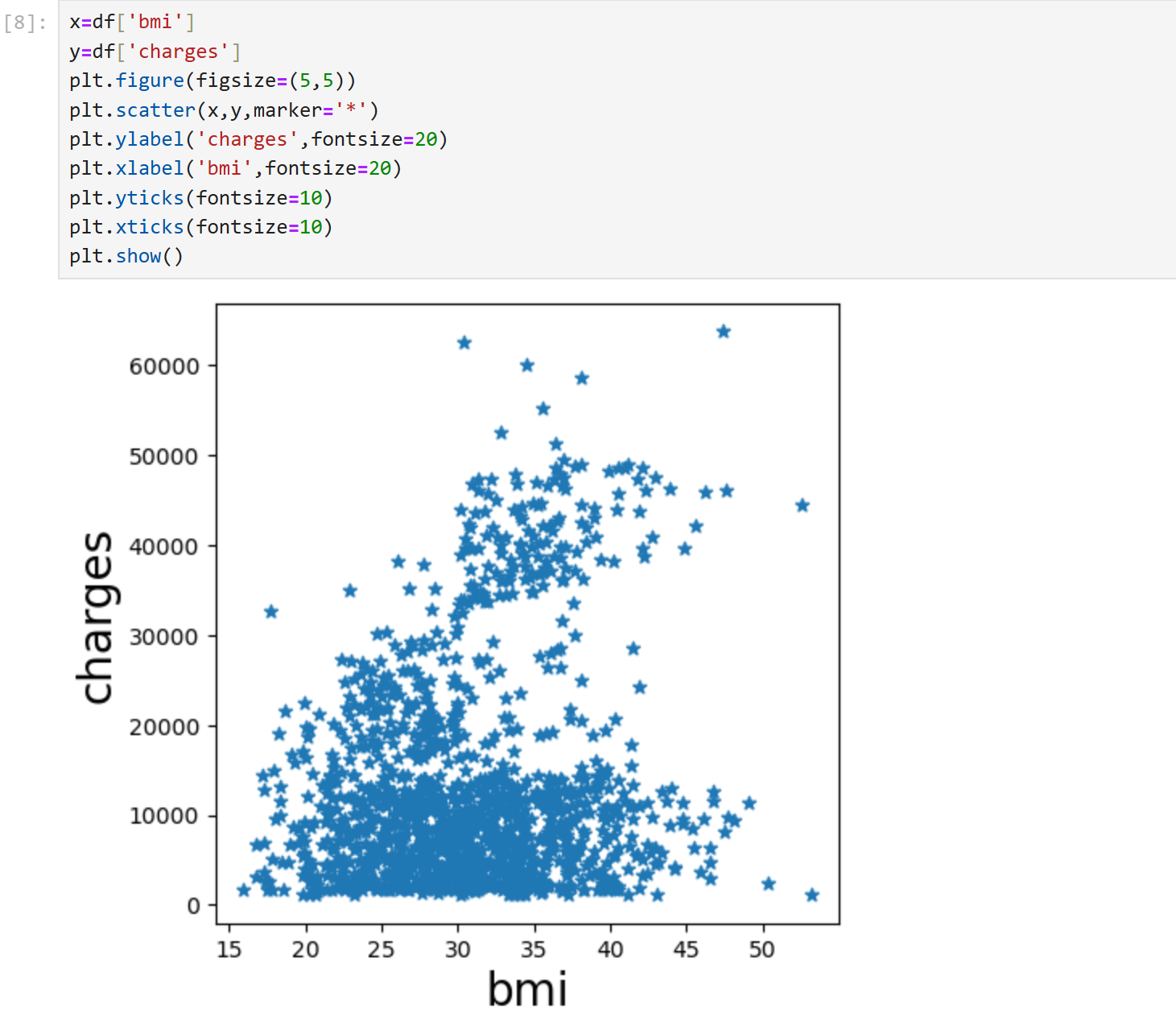
**2. Find the data type of the columns**



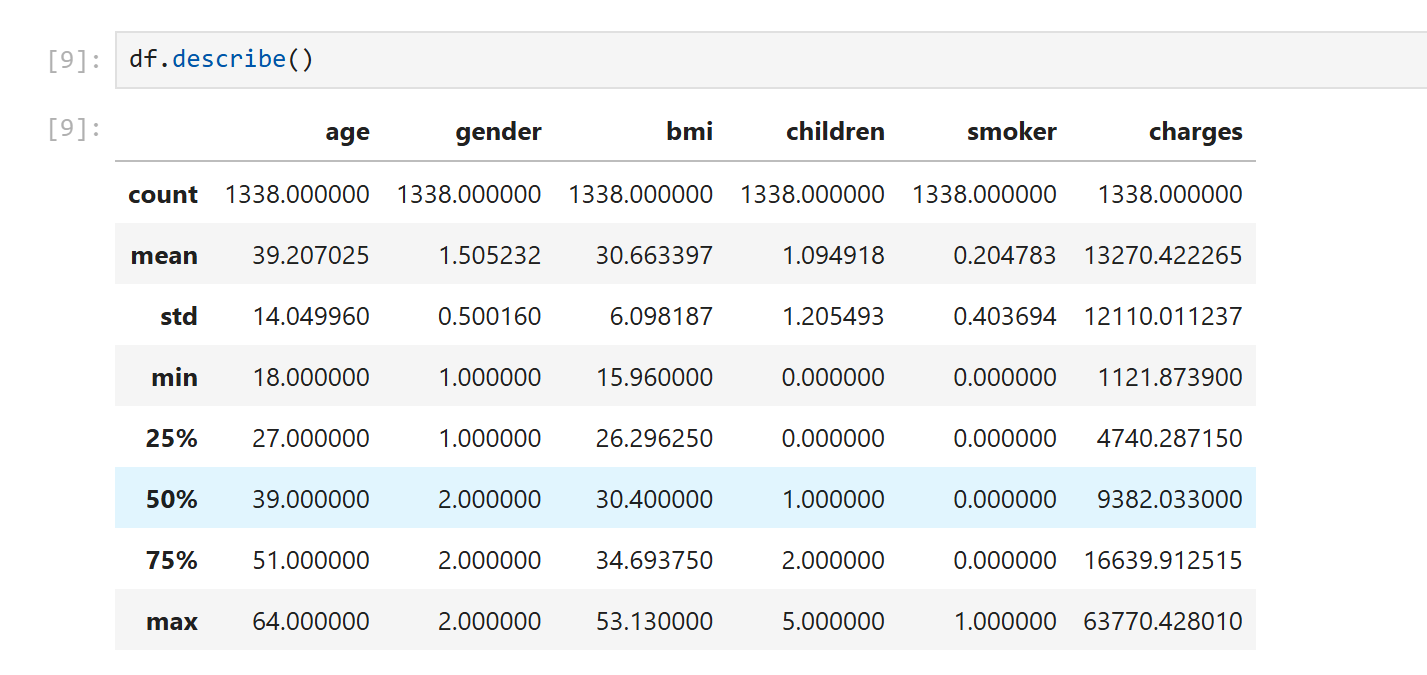
**3. Display the first 10 rows**



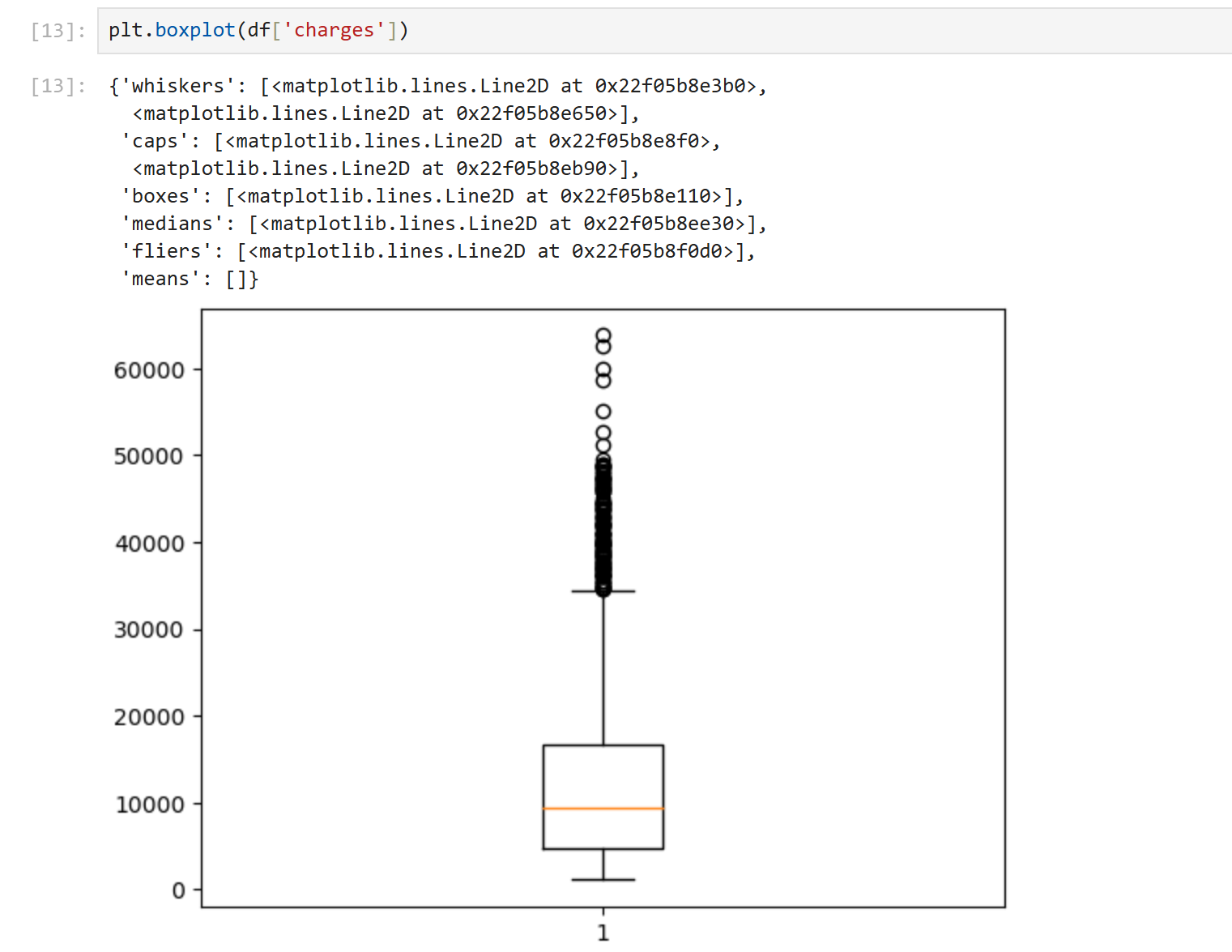
**4. Display a scatter plot for ‘BMI’ and ‘Charges’**

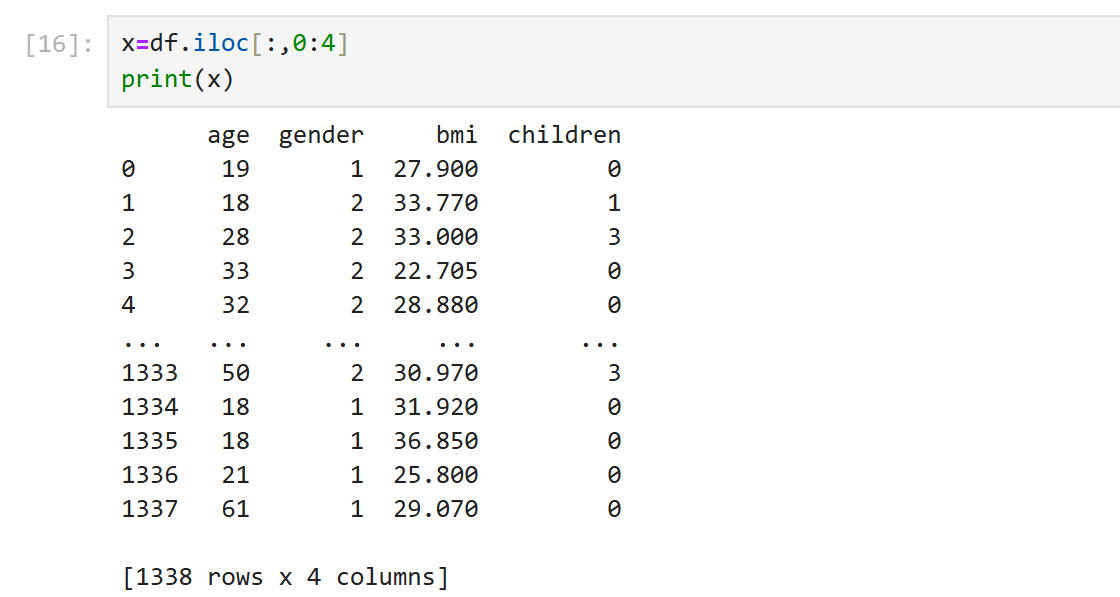


**5. Perform statistical analysis on the dataset**

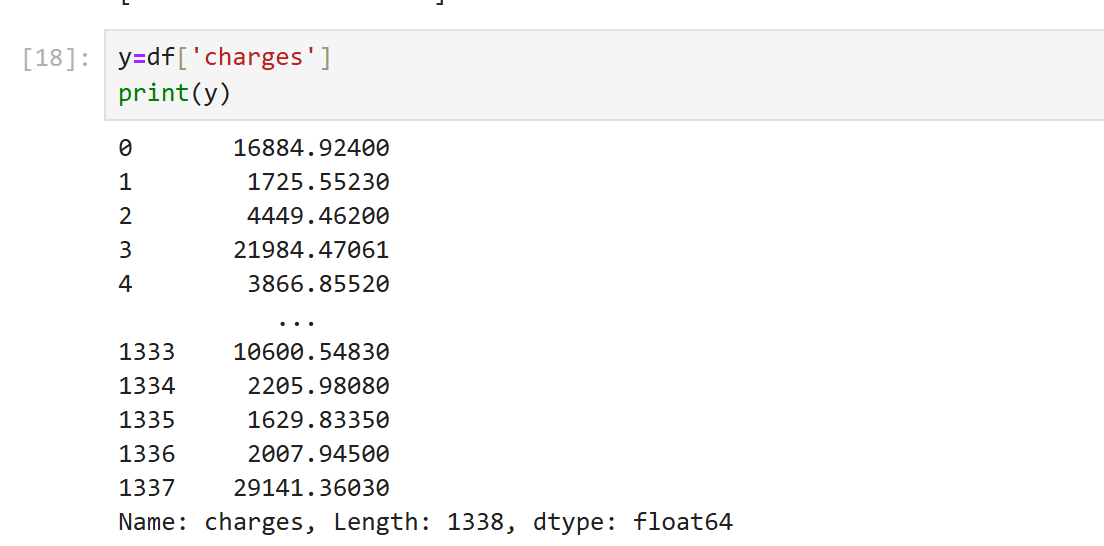


**5. Display a boxplot for ‘Charges’**

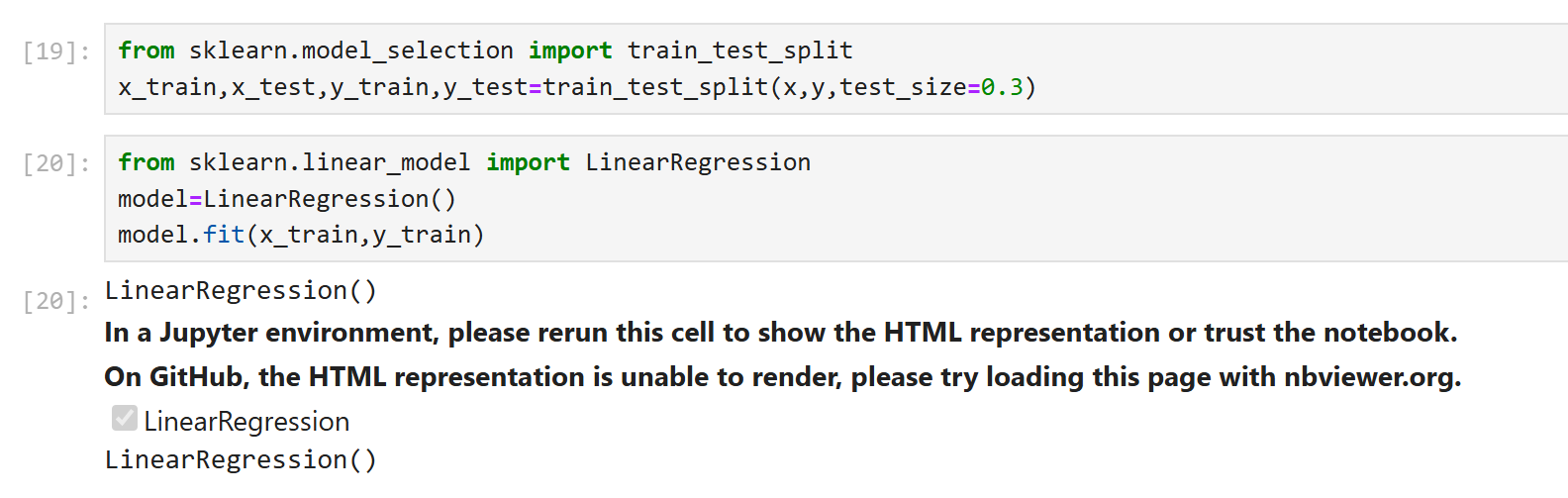


**6. Set independent features as [X]**

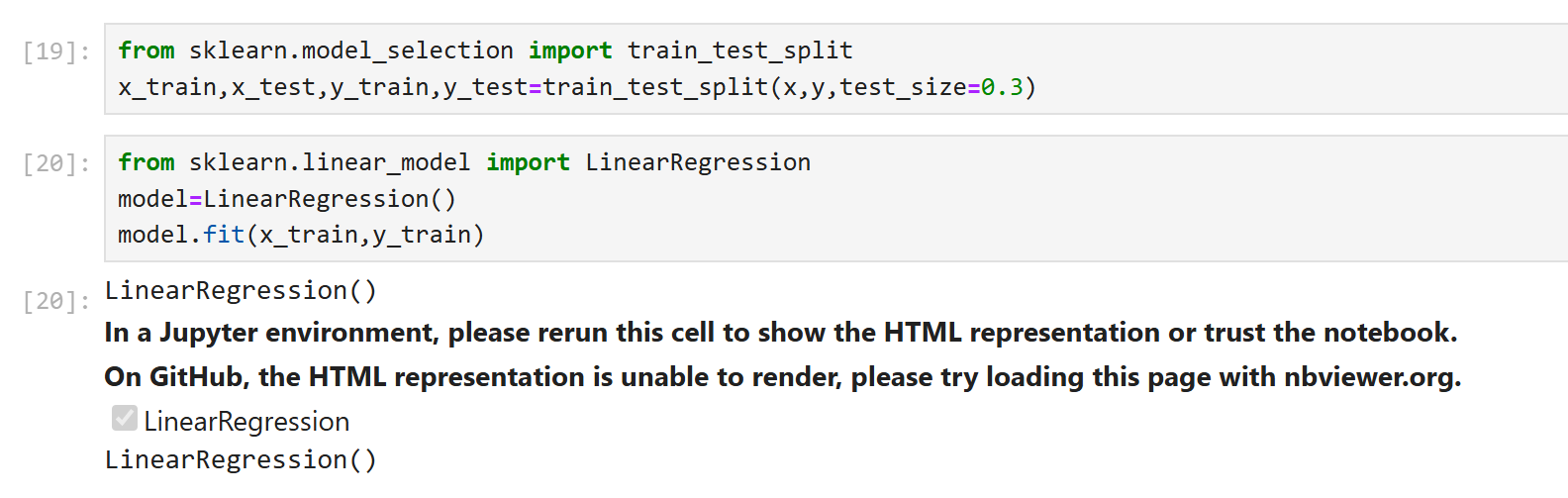
**7. Set dependent features as [Y]**



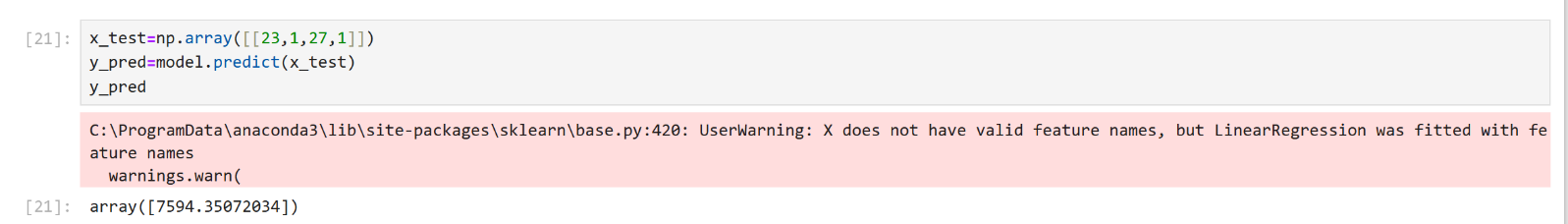
**8. Split data into 70% training and 30% testing using train\_test\_split**



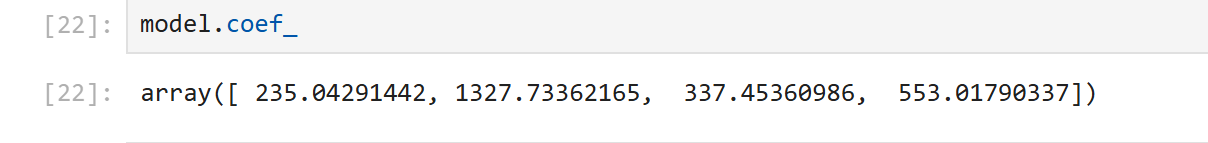
**9.Import Linear Regression**



**10.Predict the test data**

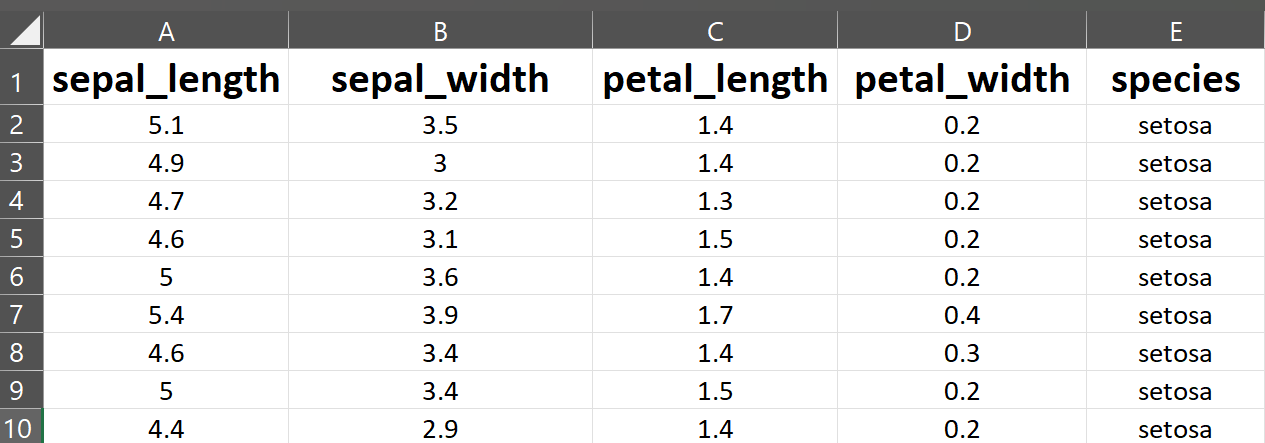


**11. Find the coefficients**

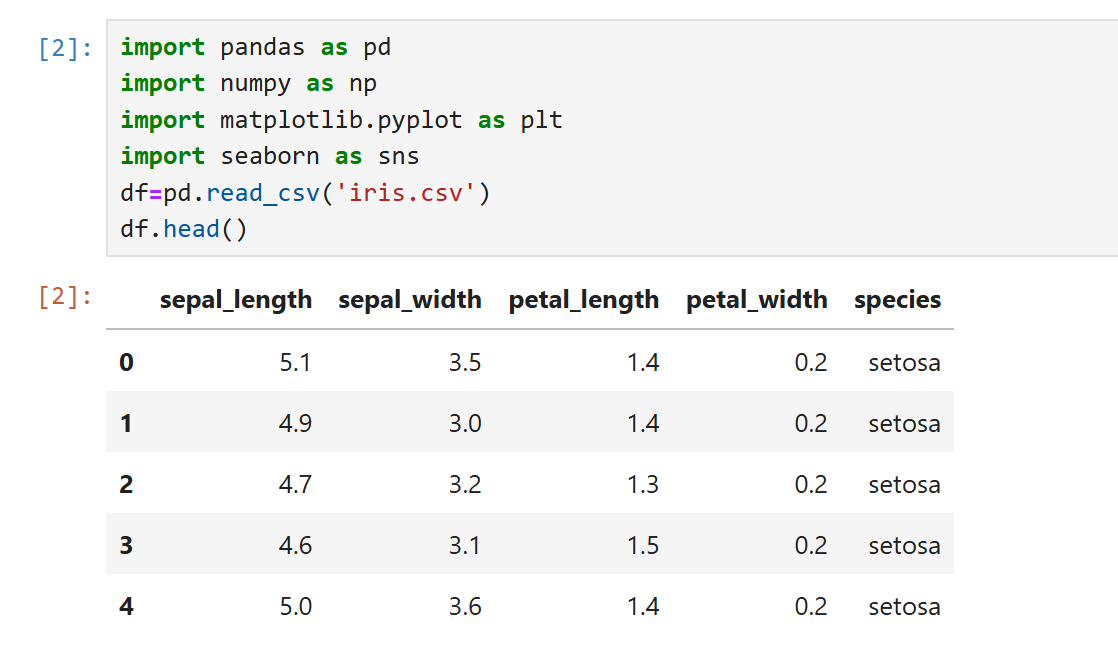


**SET - 7**

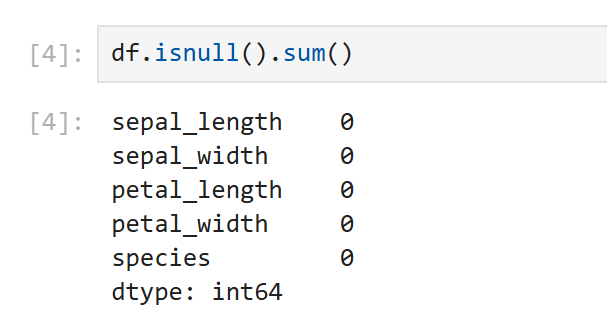
***Perform KNN classification using Iris.csv***

******

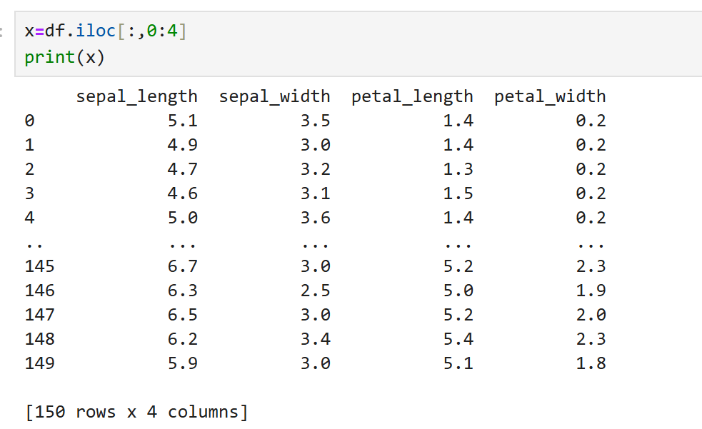
**1. Read the Iris dataset**



**2. Check for null values**



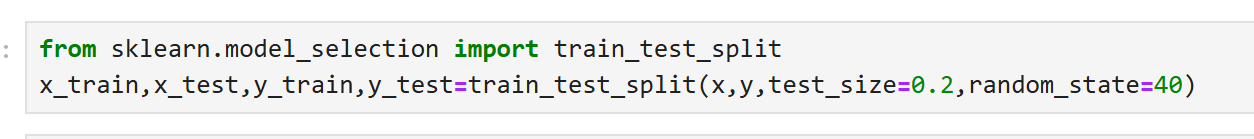
**3. Set independent features as [x]**



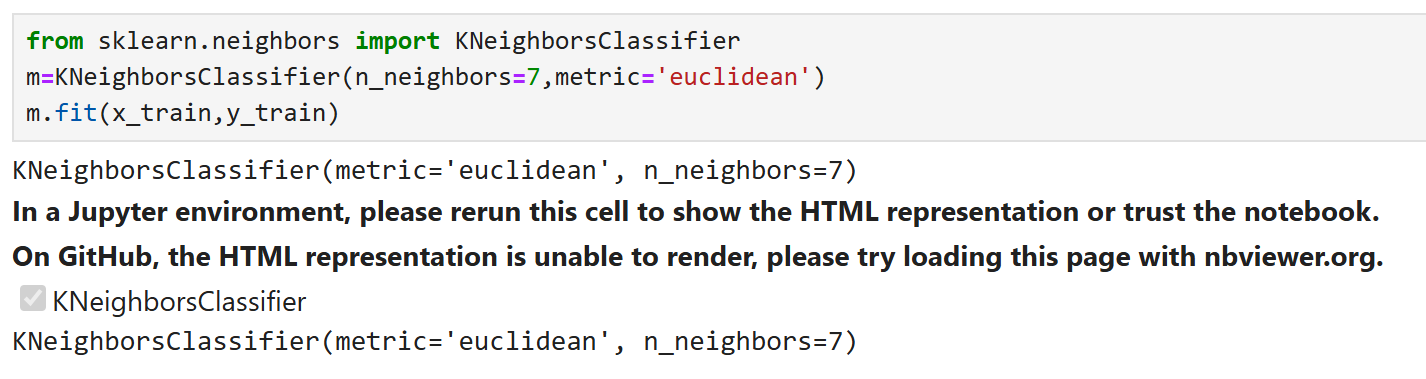
**4. Set target variable as [Y]**



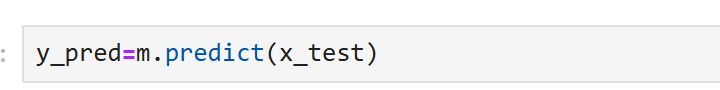
**4. Split data into 80% training and 20% testing using train\_test\_split**



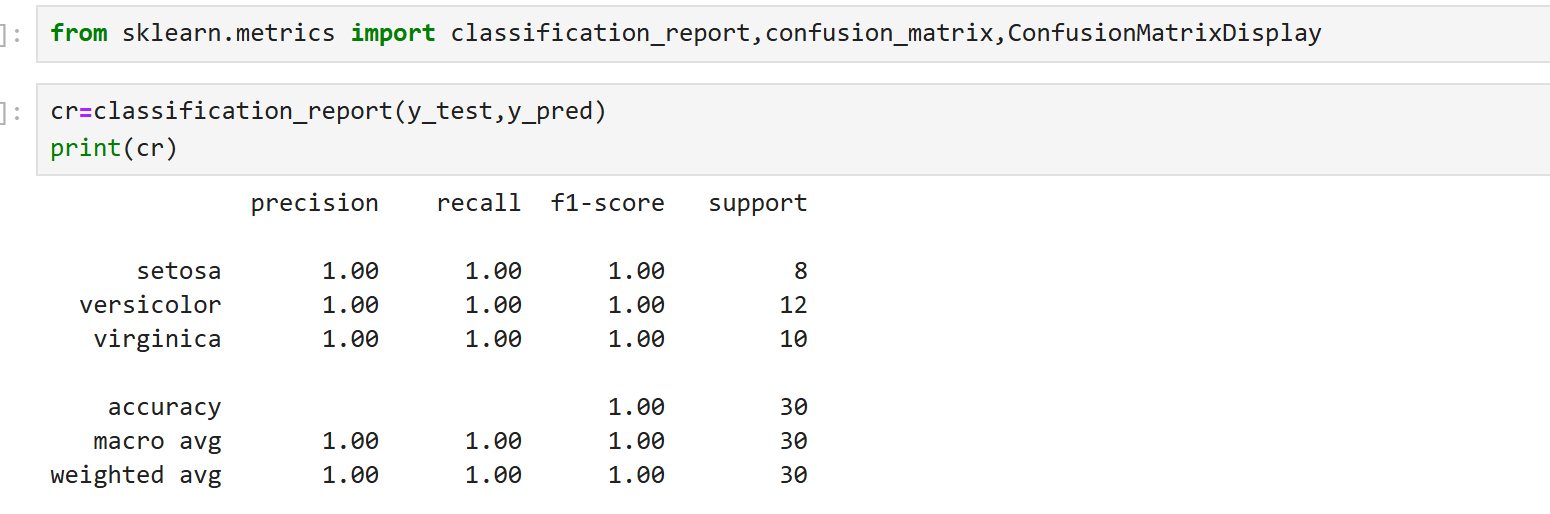
**5. Create and train a K-Nearest Neighbors (KNN) classifier with 7 neighbors using the Euclidean distance metric**



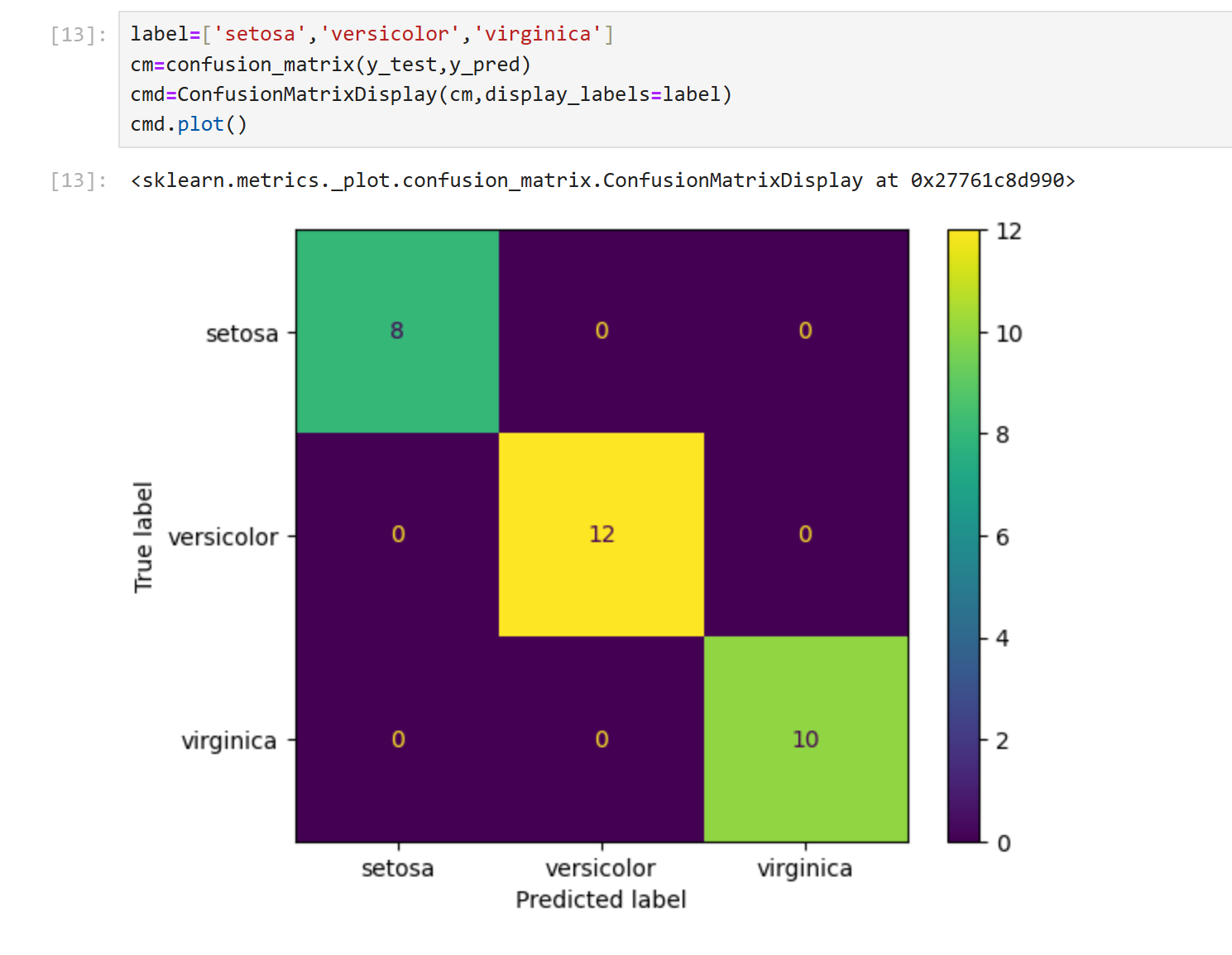
**6.Make predictions on the test data**



**7. Classification Report for Model Performance Evaluation**

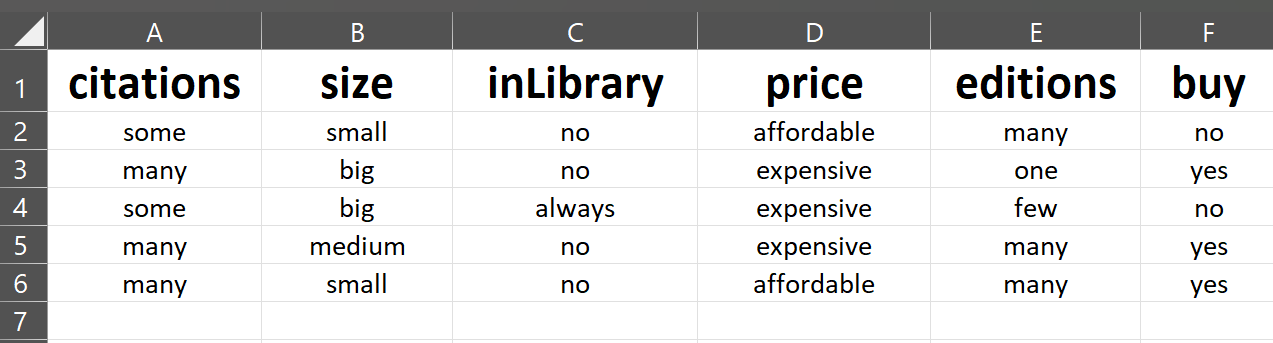


**8.Display Confusion Matrix for model results**



**SET - 8**

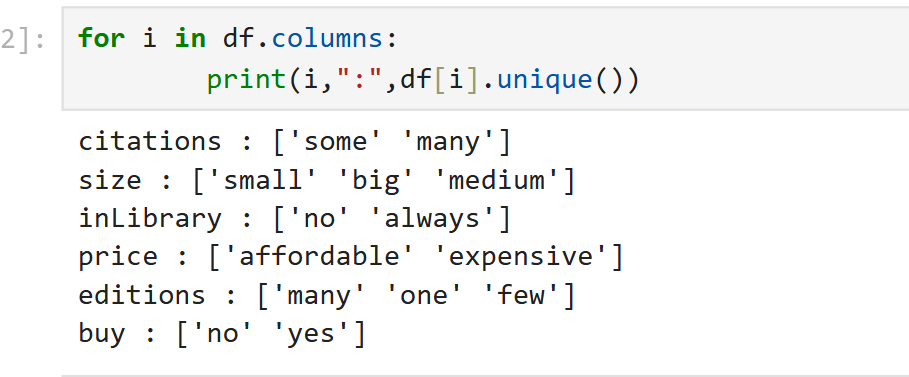
***Perform Find\_S Algorithm***

******

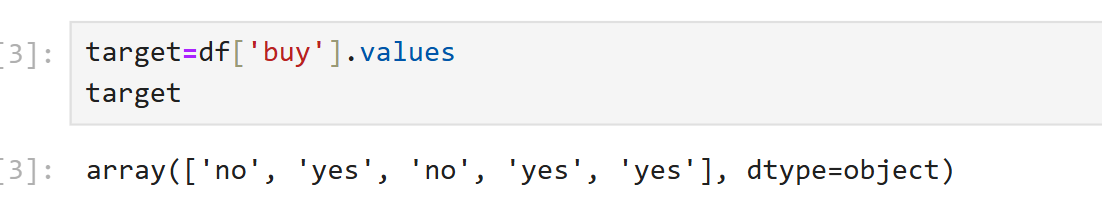
**1. Read the dataset**



**2. Display Unique values**



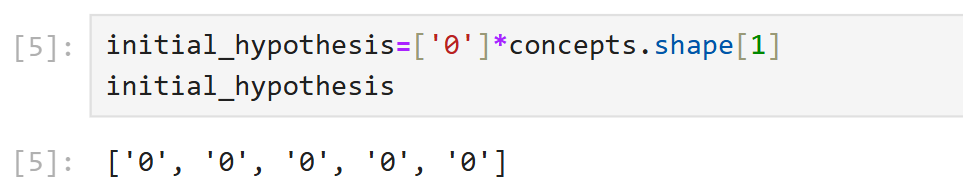
**3. Set the target variable as 'buy'**

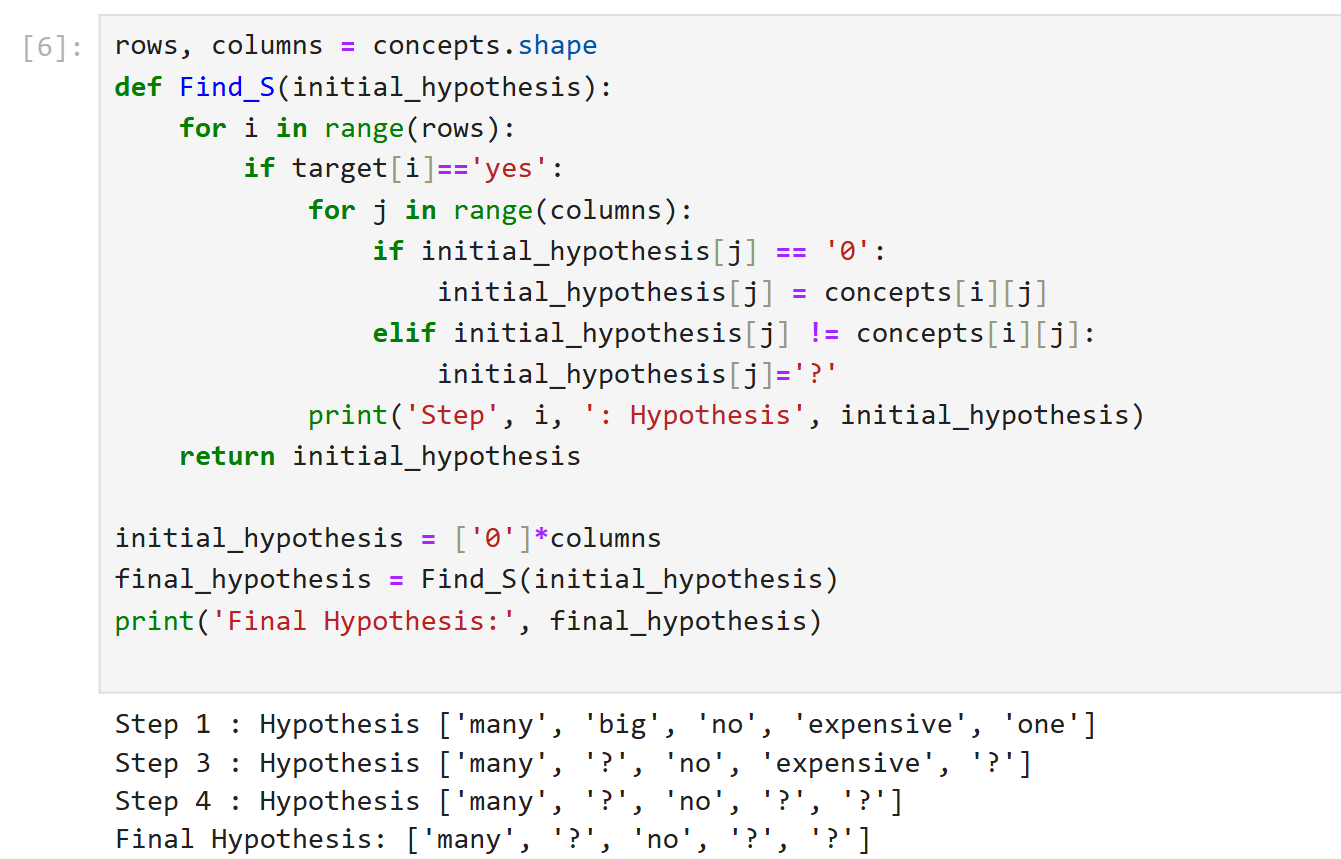


**4. Set all other variables as concepts (features)**

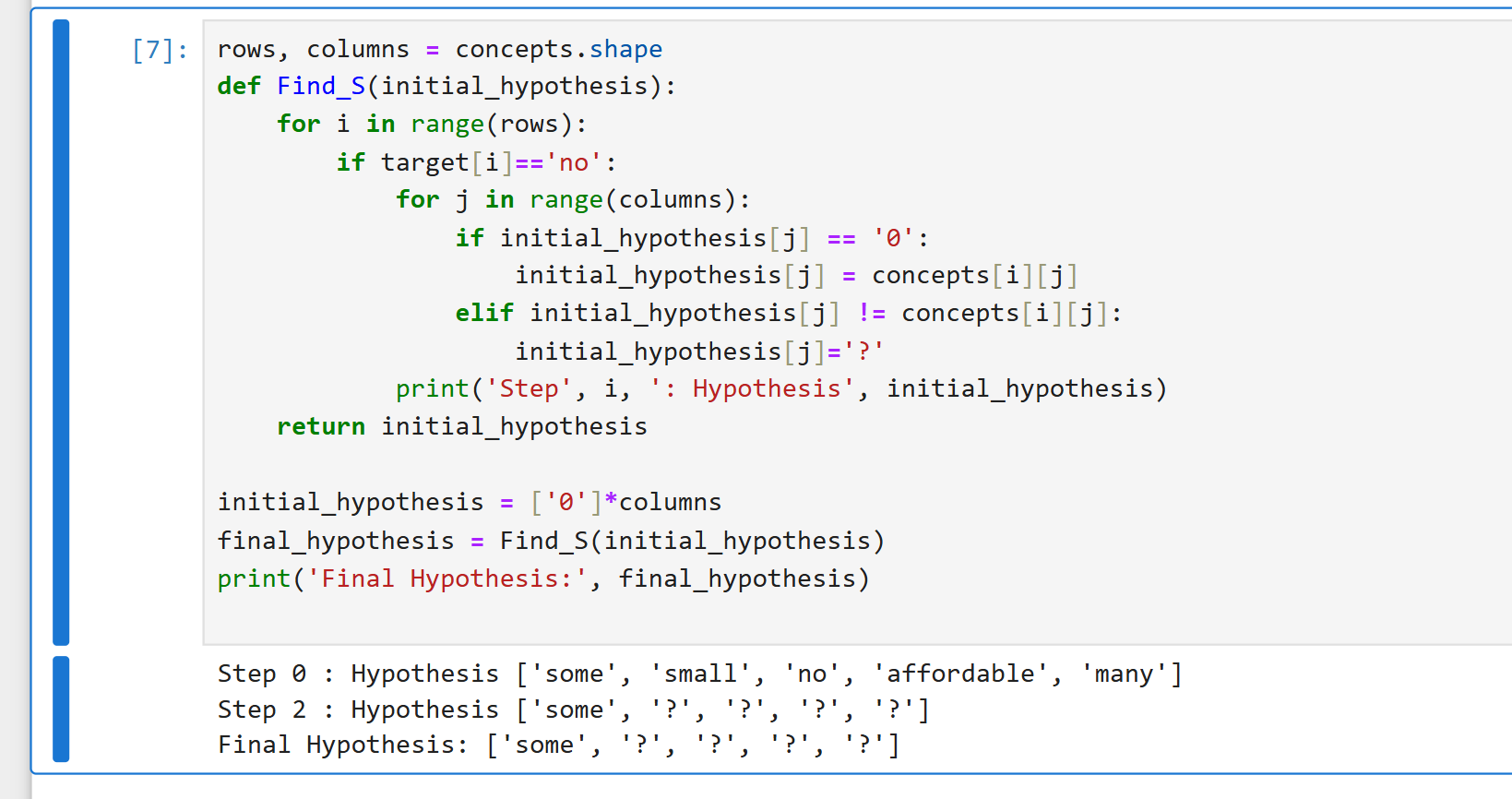


**5. Initialize the hypothesis as ‘0’**



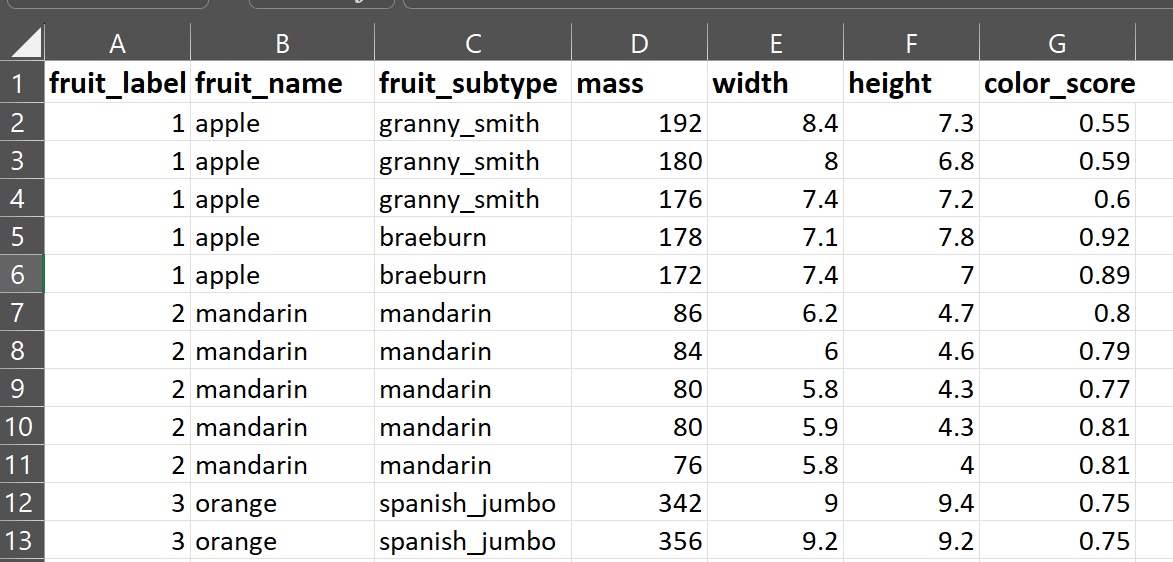
**6. Implement the Find-S Algorithm for ‘buy’ values**

**7. Implement the Find-S Algorithm for ‘non-buy’ values**

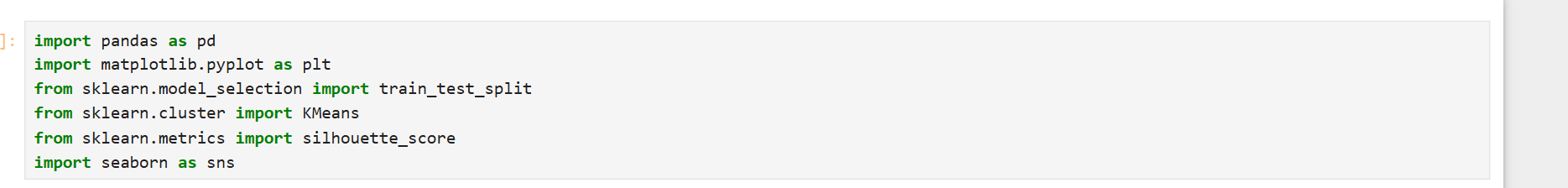


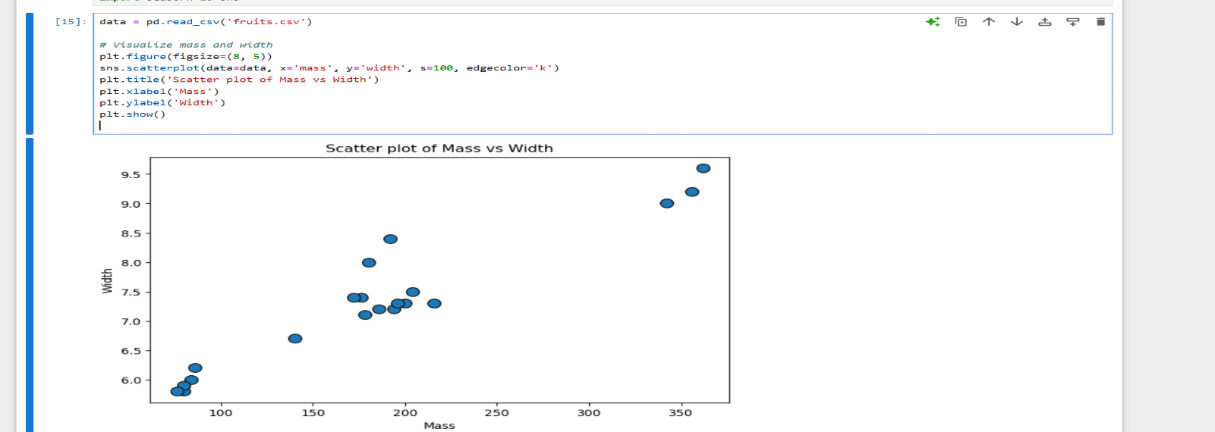
**LAB TEST – 2**

***Perform Clustering using fruits.csv***

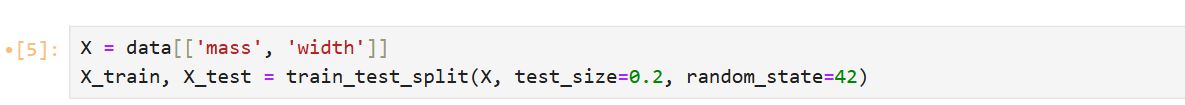
****

**1.Read dataset and visualize the mass and width features using scatterplot.**

****

****

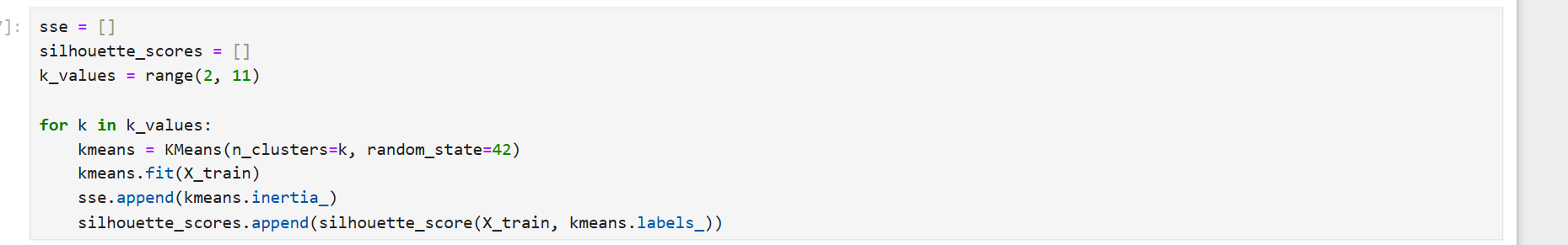
**2.** **Setup the training and test splits.**

****

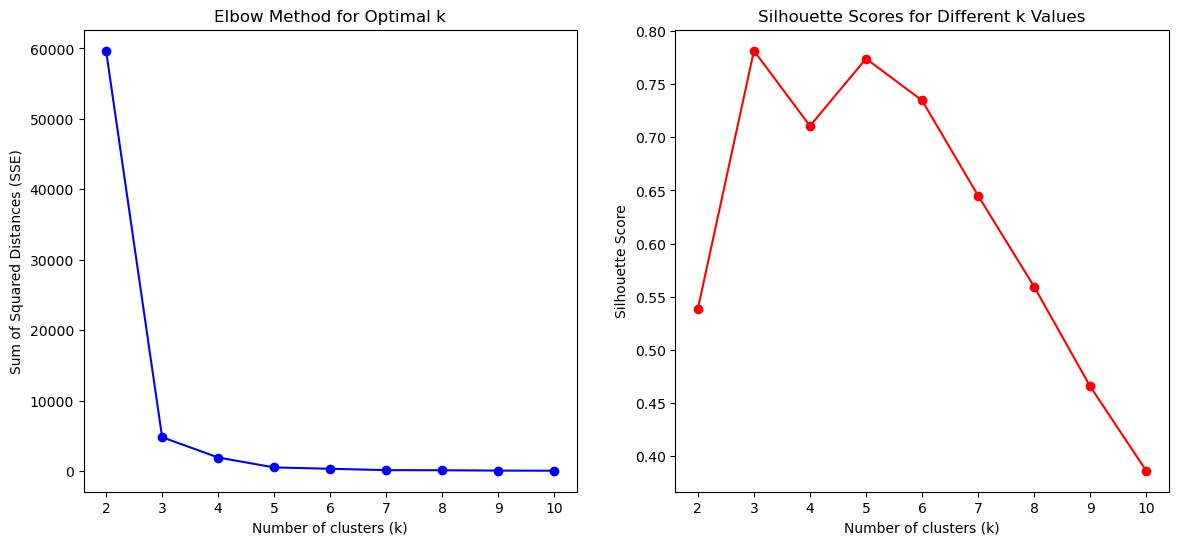
**3.** **Find the optimal number of clusters for given data for different *k* values.**

****

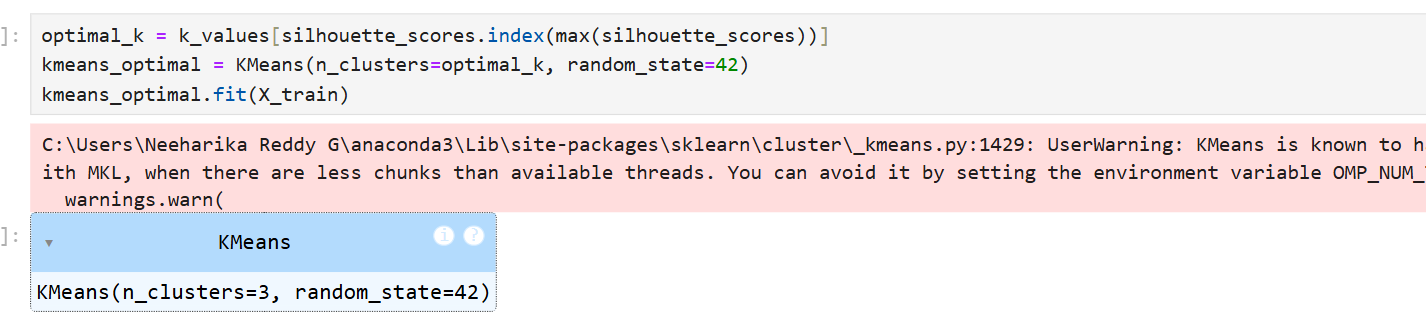
**4.Plot the performance score to choose optimal *k*.**

****

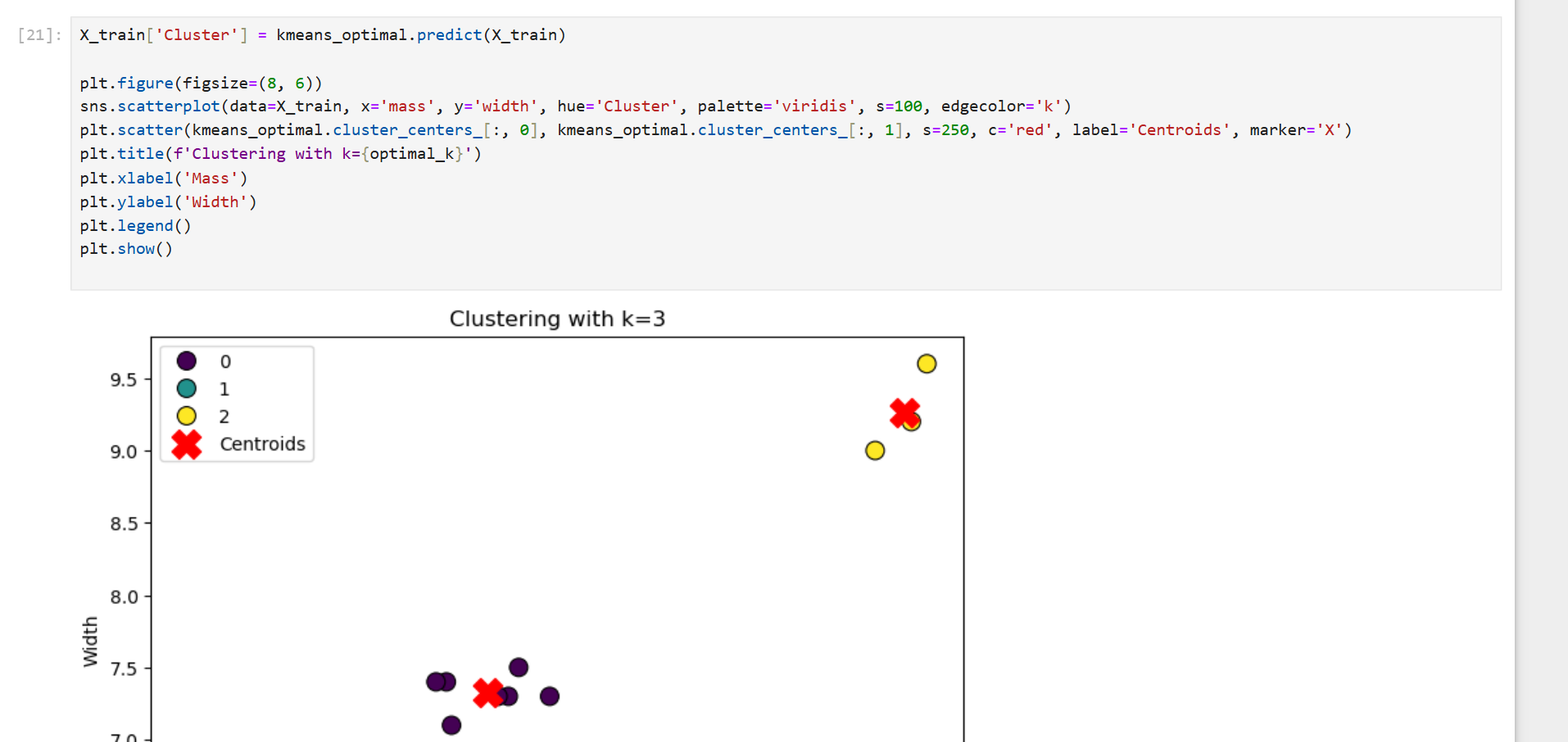
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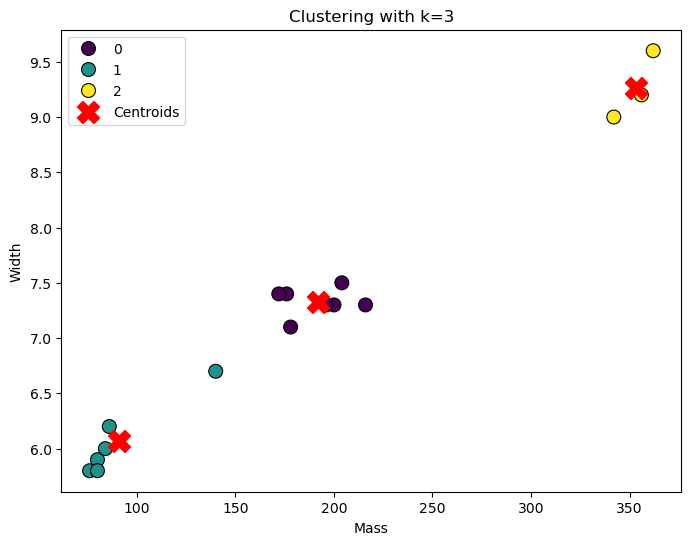


**5.** **Build the model with optimal *k*.**

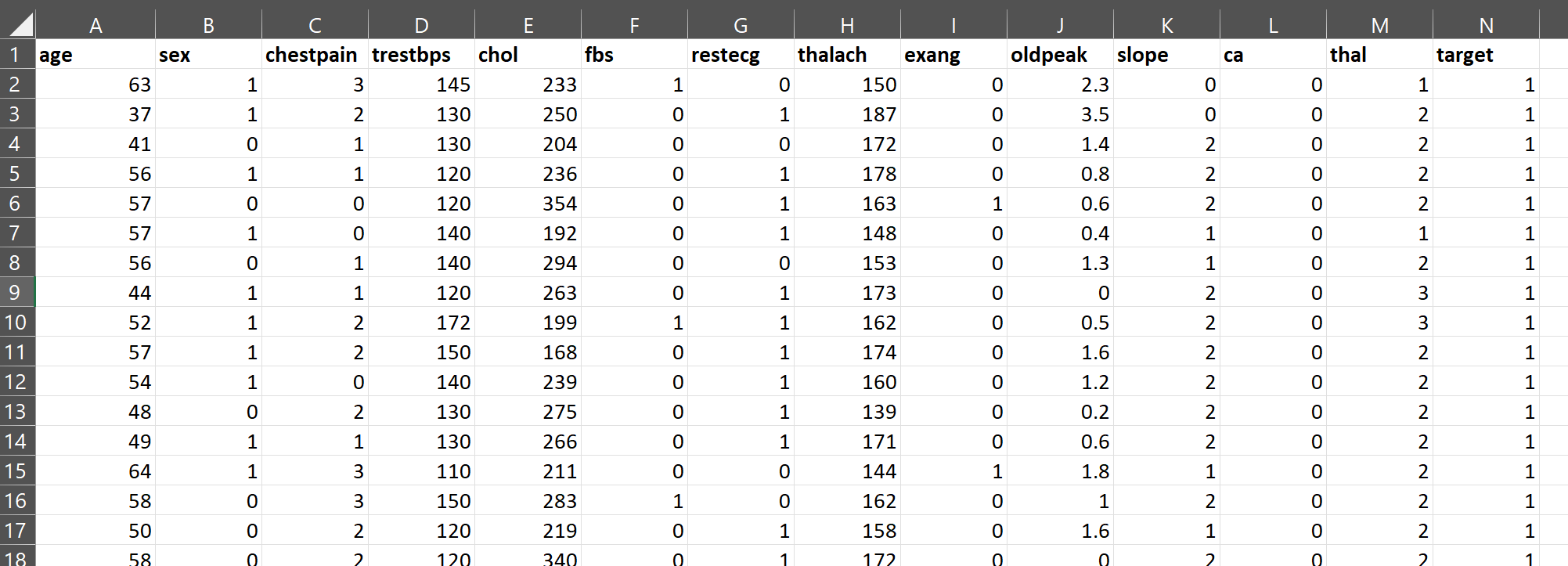
****

**6.Generate the visualization of *k* clusters**

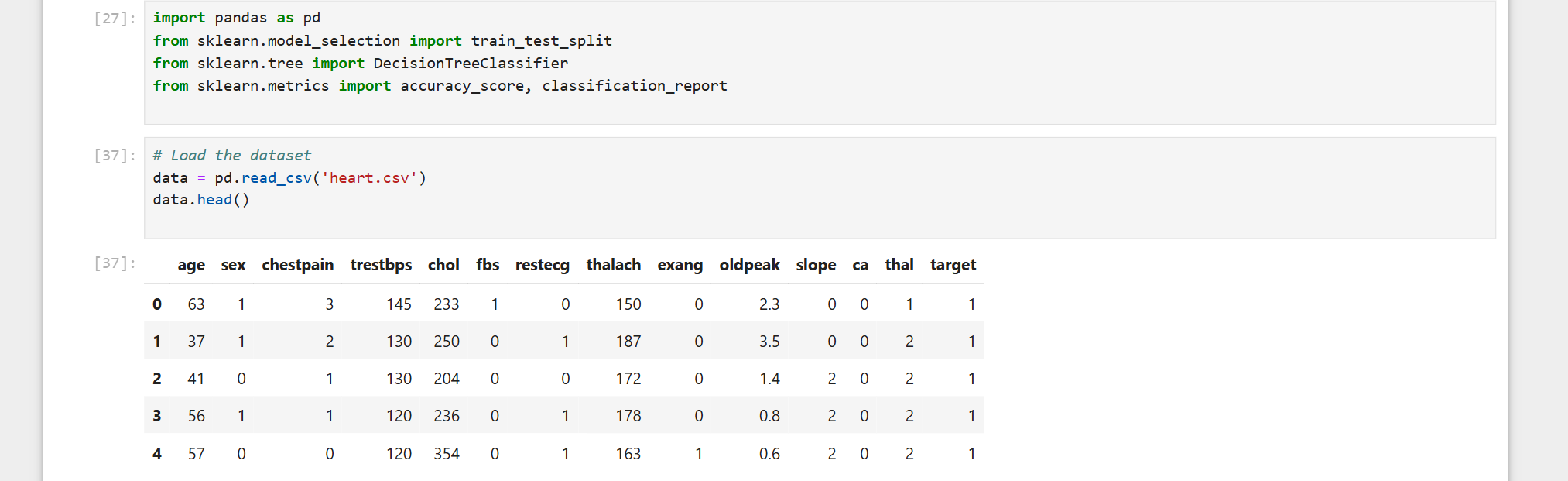
****

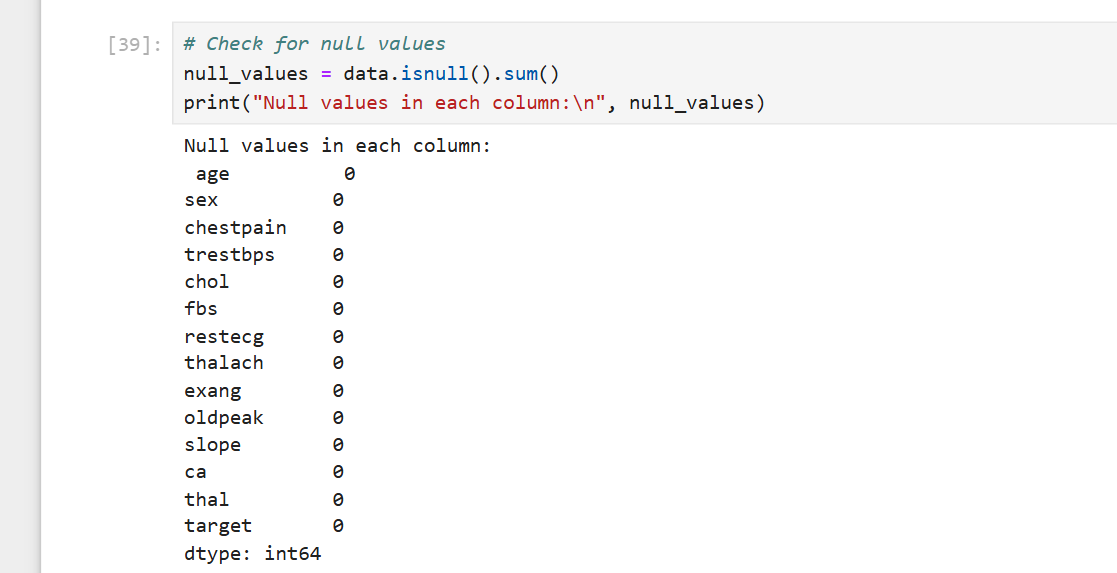


***Perform classification for the given dataset heart.csv***

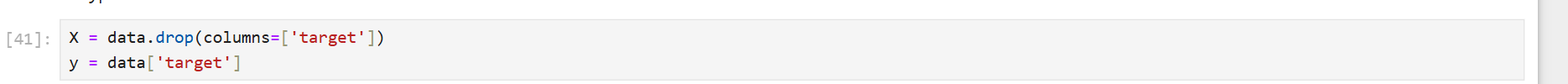
****

**1.** **Load the dataset and check for null values.**

****

****

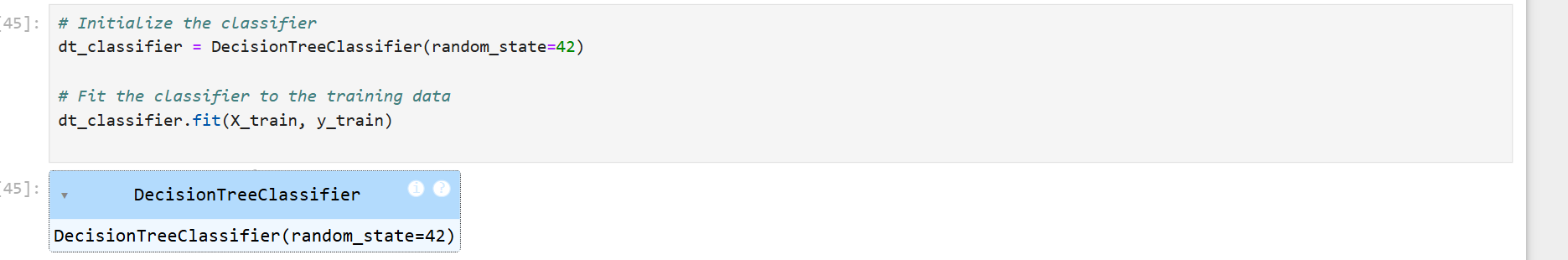
**2.** **Select the features and target variable.**

****

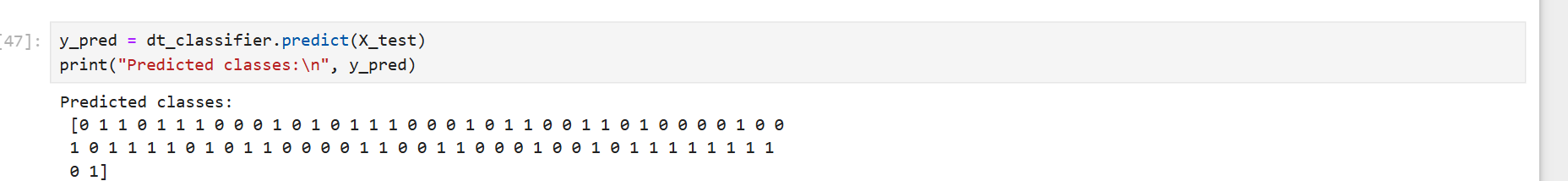
**3.Split the test set and train set ratio of 75:25**

****

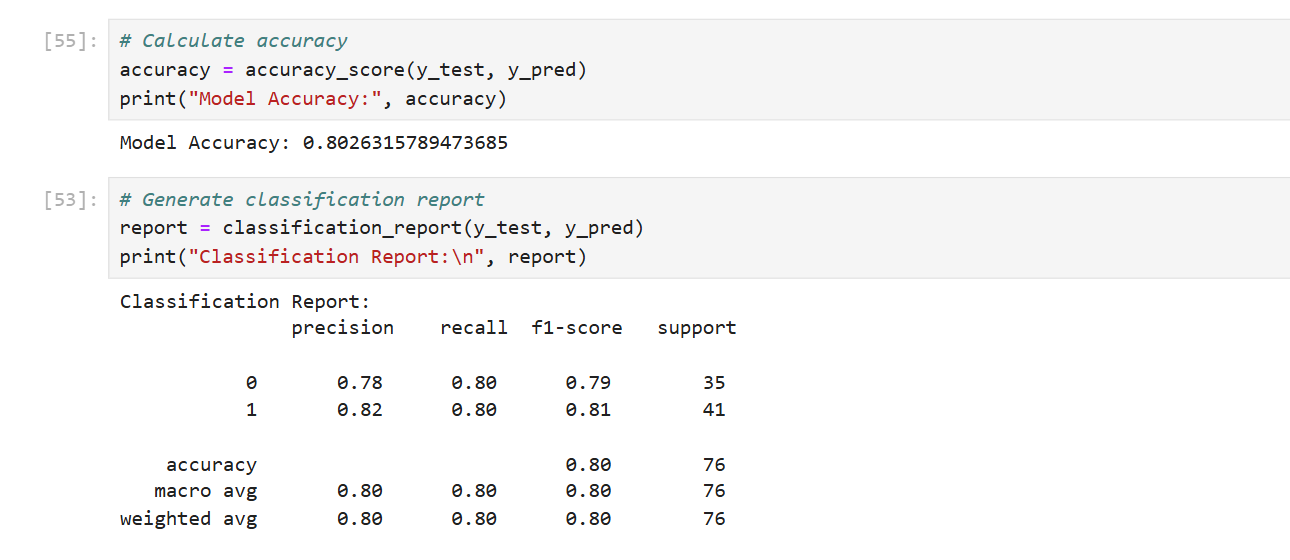
**4.** **Build the model with DT classifier.**

****

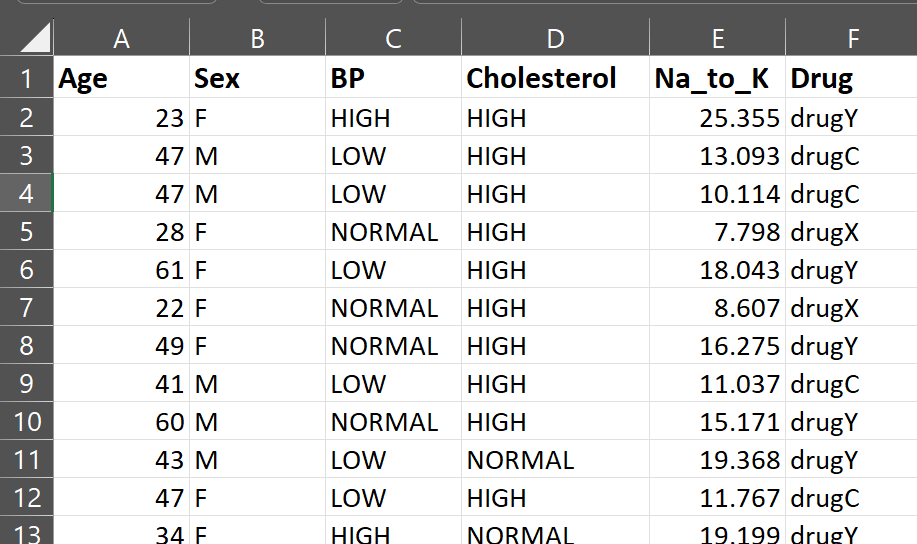
**5.** **Predict the drug class for test set.**

****

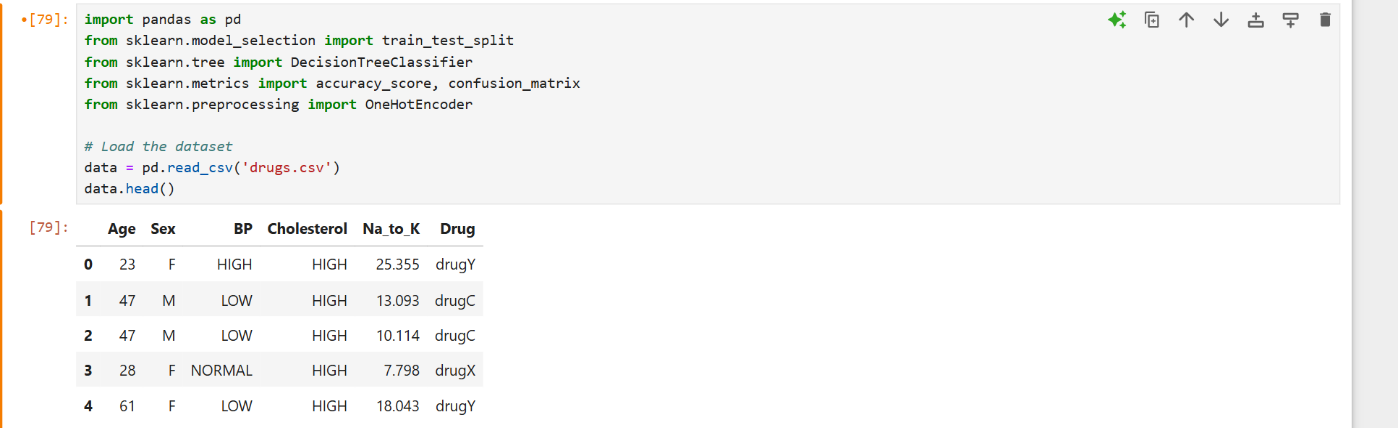
**6.Generate model accuracy and classification report.**

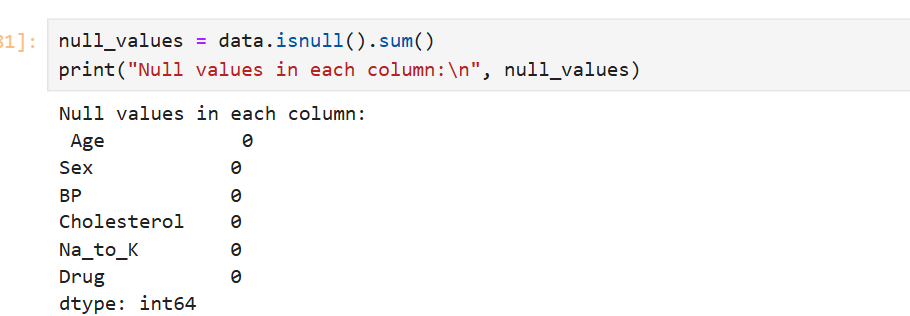
****

***Perform drug Classification for the given dataset drug.csv***

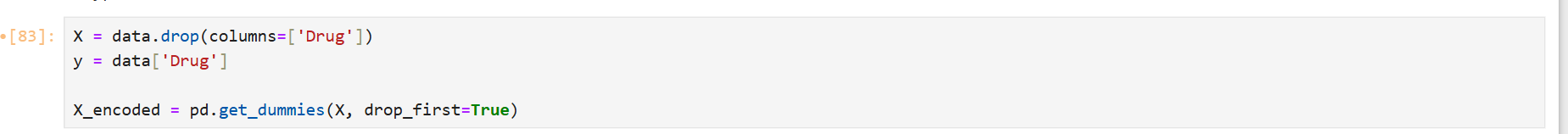
****

**1.Load the dataset and check for null values.**

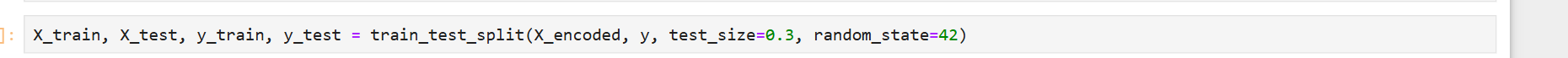
****

****

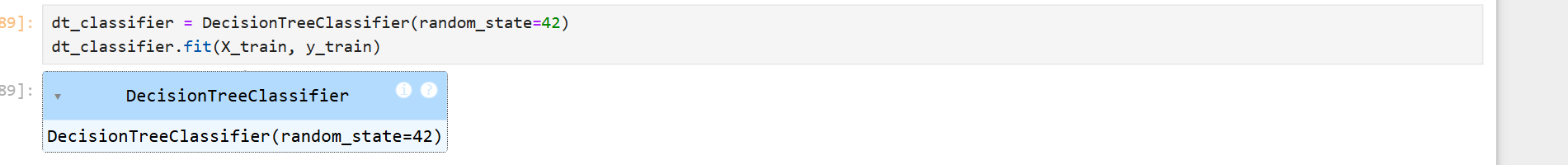
**2.** **Select the features and target variable.**

****

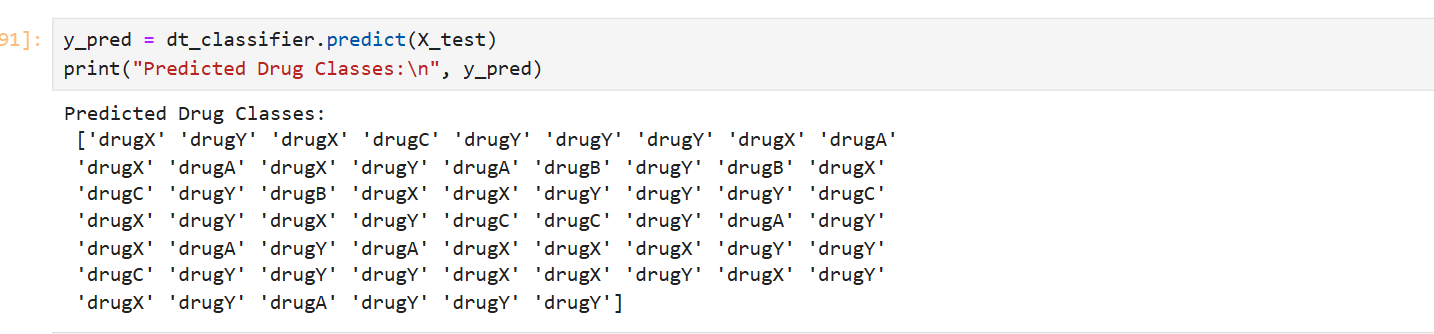
**3.** **Split the test set and train set ratio of 70:30**

****

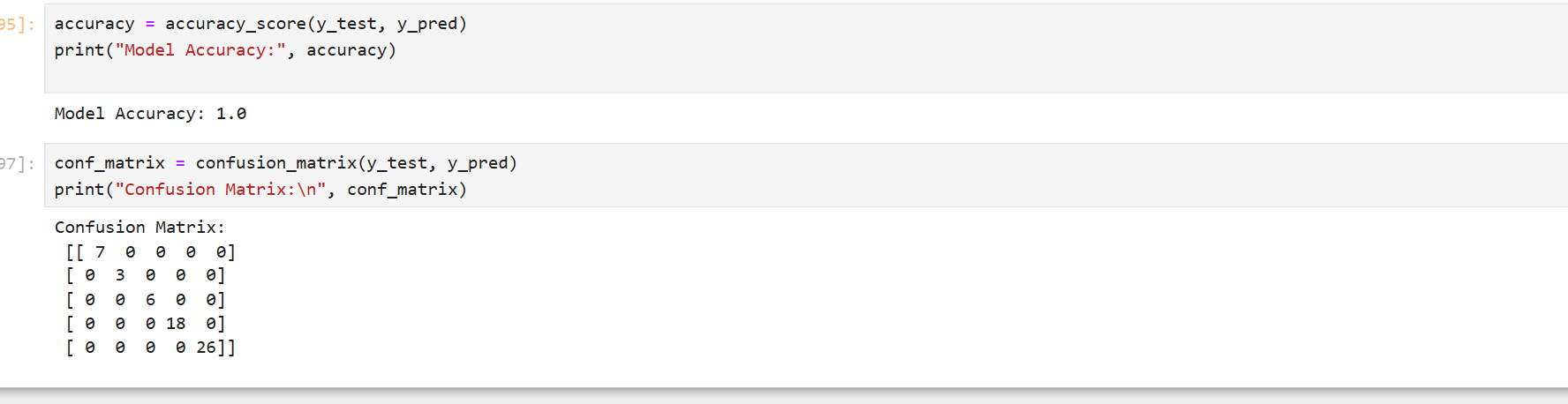
**4.** **Create and Train the DT classifier.**

****

**5.** **Predict the drug class for test set.**

****

**6.Generate model accuracy and confusion matrix.**

****