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## <u>DATASET OF COFFEE</u>

```python
import csv


# Open the CSV file in read mode
with open('/content/sample_data/cofee .csv', 'r') as file:
    # Create a CSV reader object
    reader = csv.DictReader(file)


    # Initialize an empty list to store the data
    data = []


    # Iterate over each row in the CSV file
    for row in reader:
        # Append the row as a dictionary to the data list
        data.append(dict(row))


# Print the contents of the data list
for row in data:
    print(row)


import pandas as pd
import numpy as np


# Read the CSV file into a DataFrame
df = pd.read_csv('/content/sample_data/cofee .csv')


# Convert DataFrame to matrix
matrix = df.to_numpy()


# Perform matrix operations


# Transpose the matrix
transposed_matrix = np.transpose(matrix)


# Print the results
print("Original Matrix:")
print(matrix)
print("Transposed Matrix:")
print(transposed_matrix)
```

```python
# Split the matrix into separate arrays
array1 = matrix[:, :6]  # Select the first 6 columns
array2 = matrix[:, 6:]  # Select the remaining columns


# Horizontally stack the arrays
horizontal_stack = np.hstack((array1, array2))


# Vertically stack the arrays
vertical_stack = np.vstack((array1, array2))


# Print the results
print("Horizontal Stack:")
print(horizontal_stack)
print("Vertical Stack:")
print(vertical_stack)


# Generate a custom sequence
custom_sequence = ""


# Iterate over each row in the DataFrame
for index, row in df.iterrows():
    country = row['Country of Origin']
    bags = str(row['Number of Bags'])
    weight = row['Bag Weight']
    aroma = str(row['Aroma'])
    flavor = str(row['Flavor'])
    aftertaste = str(row['Aftertaste'])
    acidity = str(row['Acidity'])
    balance = str(row['Balance'])
    sweetness = str(row['Sweetness'])
    moisture = str(row['Moisture Percentage'])
    color = row['Color']
    defects = str(row['Category Two Defects'])


    # Create a custom sequence based on the row data
    sequence = f"Country: {country}, Bags: {bags}, Weight: {weight}, Aroma: {aroma}, Flavor:
{flavor}, Aftertaste: {aftertaste}, Acidity: {acidity}, Balance: {balance}, Sweetness:
{sweetness}, Moisture: {moisture}, Color: {color}, Defects: {defects}\n"


    # Append the sequence to the custom_sequence string
    custom_sequence += sequence
```

```python
# Print the custom sequence
print(custom_sequence)


# Arithmetic Operations
# Calculate the sum of 'Number of Bags' column
sum_bags = df['Number of Bags'].sum()


# Statistical Operations
# Calculate the minimum value of 'Aroma' column
min_aroma = df['Aroma'].min()


# Calculate the maximum value of 'Flavor' column
max_flavor = df['Flavor'].max()


# Print the results
print("Arithmetic Operations:")
print("Sum of Number of Bags:", sum_bags)
print()
print("Statistical Operations:")
print("Minimum Aroma:", min_aroma)
print("Maximum Flavor:", max_flavor)
print()


# Copy the arrays
country_of_origin = df['Country of Origin'].to_numpy()
number_of_bags = df['Number of Bags'].to_numpy()
bag_weight = df['Bag Weight'].to_numpy()
aroma = df['Aroma'].to_numpy()
flavor = df['Flavor'].to_numpy()
aftertaste = df['Aftertaste'].to_numpy()
acidity = df['Acidity'].to_numpy()
balance = df['Balance'].to_numpy()
sweetness = df['Sweetness'].to_numpy()
moisture_percentage = df['Moisture Percentage'].to_numpy()
color = df['Color'].to_numpy()
category_two_defects = df['Category Two Defects'].to_numpy()


# View the arrays
print("Country of Origin:")
print(country_of_origin)
print("Number of Bags:")
```

```python
print(number_of_bags)
print("Bag Weight:")
print(bag_weight)
print("Aroma:")
print(aroma)
print("Flavor:")
print(flavor)
print("Aftertaste:")
print(aftertaste)
print("Acidity:")
print(acidity)
print("Balance:")
print(balance)
print("Sweetness:")
print(sweetness)
print("Moisture Percentage:")
print(moisture_percentage)
print("Color:")
print(color)
print("Category Two Defects:")
print(category_two_defects)


# Stacking (concatenating vertically) two DataFrames
stacked_df = pd.concat([df, df], axis=0)


# Searching for rows where the 'Country of Origin' is 'Taiwan'
taiwan_df = df[df['Country of Origin'] == 'Taiwan']


# Sorting the DataFrame by 'Number of Bags' in descending order
sorted_df = df.sort_values(by='Number of Bags', ascending=False)


# Counting the occurrences of each unique value in the 'Color' column
color_counts = df['Color'].value_counts()


# Broadcasting a new value to all rows in the 'Sweetness' column
df['Sweetness'] = 10.0


# Printing the results
print("Stacked DataFrame:")
print(stacked_df)
print("Taiwan DataFrame:")
print(taiwan_df)
```

```
print("Sorted DataFrame:")

print(sorted_df)

print("Color Counts:")

print(color_counts)

print("Broadcasted DataFrame:")

print(df)
```

# OUTPUT:

{'Country of Origin': 'Colombia', 'Number of Bags': '1', 'Bag Weight': '35 kg', 'Aroma': '8.58', 'Flavor': '8.5', 'Aftertaste': '8.42', 'Acidity': '8.58', 'Balance': '8.42', 'Sweetness': '10', 'Moisture Percentage': '11.8', 'Color': 'green', 'Category Two Defects': '3'}
{'Country of Origin': 'Taiwan', 'Number of Bags': '1', 'Bag Weight': '80 kg', 'Aroma': '8.5', 'Flavor': '8.5', 'Aftertaste': '7.92', 'Acidity': '8', 'Balance': '8.25', 'Sweetness': '10', 'Moisture Percentage': '10.5', 'Color': 'blue-green', 'Category Two Defects': '0'}
{'Country of Origin': 'Laos', 'Number of Bags': '19', 'Bag Weight': '25 kg', 'Aroma': '8.33', 'Flavor': '8.42', 'Aftertaste': '8.08', 'Acidity': '8.17', 'Balance': '8.17', 'Sweetness': '10', 'Moisture Percentage': '10.4', 'Color': 'yellowish', 'Category Two Defects': '2'}
{'Country of Origin': 'Costa Rica', 'Number of Bags': '1', 'Bag Weight': '22 kg', 'Aroma': '8.08', 'Flavor': '8.17', 'Aftertaste': '8.17', 'Acidity': '8.25', 'Balance': '8.08', 'Sweetness': '10', 'Moisture Percentage': '11.8', 'Color': 'green', 'Category Two Defects': '0'}
{'Country of Origin': 'Colombia', 'Number of Bags': '2', 'Bag Weight': '24 kg', 'Aroma': '8.33', 'Flavor': '8.33', 'Aftertaste': '8.08', 'Acidity': '8.25', 'Balance': '7.92', 'Sweetness': '10', 'Moisture Percentage': '11.6', 'Color': 'yellow-green', 'Category Two Defects': '2'}
{'Country of Origin': 'Guatemala', 'Number of Bags': '5', 'Bag Weight': '30 kg', 'Aroma': '8.33', 'Flavor': '8.33', 'Aftertaste': '8.25', 'Acidity': '7.83', 'Balance': '8.17', 'Sweetness': '10', 'Moisture Percentage': '10.7', 'Color': 'green', 'Category Two Defects': '2'}
{'Country of Origin': 'Taiwan', 'Number of Bags': '1', 'Bag Weight': '27 kg', 'Aroma': '8.33', 'Flavor': '8.17', 'Aftertaste': '8.08', 'Acidity': '8', 'Balance': '8.25', 'Sweetness': '10', 'Moisture Percentage': '9.1', 'Color': 'green', 'Category Two Defects': '0'}
{'Country of Origin': 'Taiwan', 'Number of Bags': '1', 'Bag Weight': '90 kg', 'Aroma': '8.25', 'Flavor': '8.25', 'Aftertaste': '8.17', 'Acidity': '8', 'Balance': '8.08', 'Sweetness': '10', 'Moisture Percentage': '10', 'Color': 'yellow green', 'Category Two Defects': '1'}
{'Country of Origin': 'Taiwan', 'Number of Bags': '1', 'Bag Weight': '30 kg', 'Aroma': '8.08', 'Flavor': '8.08', 'Aftertaste': '8.25', 'Acidity': '8.08', 'Balance': '8', 'Sweetness': '10', 'Moisture Percentage': '10.8', 'Color': 'greenish', 'Category Two Defects': '0'}
{'Country of Origin': 'Tanzania, United Republic Of', 'Number of Bags': '320', 'Bag Weight': '60 kg', 'Aroma': '8.08', 'Flavor': '8.17', 'Aftertaste': '8.08', 'Acidity': '8.17', 'Balance': '8', 'Sweetness': '10', 'Moisture Percentage': '11', 'Color': 'greenish', 'Category Two Defects': '0'}
{'Country of Origin': 'Ethiopia', 'Number of Bags': '10', 'Bag Weight': '30 kg', 'Aroma': '8.08', 'Flavor': '8.25', 'Aftertaste': '8', 'Acidity': '8.08', 'Balance': '7.92', 'Sweetness': '10', 'Moisture Percentage': '11.8', 'Color': 'greenish', 'Category Two Defects': '1'}
{'Country of Origin': 'Guatemala', 'Number of Bags': '5', 'Bag Weight': '15 kg', 'Aroma': '8.08', 'Flavor': '8', 'Aftertaste': '8', 'Acidity': '7.75', 'Balance': '8.17', 'Sweetness': '10', 'Moisture Percentage': '11.5', 'Color': 'brownish', 'Category Two Defects': '1'}
{'Country of Origin': 'Taiwan', 'Number of Bags': '1', 'Bag Weight': '60 kg', 'Aroma': '8.08', 'Flavor': '8', 'Aftertaste': '8.08', 'Acidity': '8.08', 'Balance': '8', 'Sweetness': '10', 'Moisture Percentage': '11.9', 'Color': 'green', 'Category Two Defects': '0'}
{'Country of Origin': 'Ethiopia', 'Number of Bags': '40', 'Bag Weight': '60 kg', 'Aroma': '7.67', 'Flavor': '8.17', 'Aftertaste': '8', 'Acidity': '8.33', 'Balance': '8', 'Sweetness': '10', 'Moisture Percentage': '11.6', 'Color': 'yellow- green', 'Category Two Defects': '2'}
{'Country of Origin': 'Colombia', 'Number of Bags': '70', 'Bag Weight': '35 kg', 'Aroma': '8.08', 'Flavor': '8', 'Aftertaste': '8.08', 'Acidity': '7.92', 'Balance': '8', 'Sweetness': '10', 'Moisture Percentage': '10.6', 'Color': 'green', 'Category Two Defects': '0'}
{'Country of Origin': 'Taiwan', 'Number of Bags': '1', 'Bag Weight': '60 kg', 'Aroma': '8.17', 'Flavor': '8.08', 'Aftertaste': '8', 'Acidity': '7.92', 'Balance': '7.92', 'Sweetness': '10', 'Moisture Percentage': '10.2', 'Color': 'green', 'Category Two Defects': '0'}
{'Country of Origin': 'Ethiopia', 'Number of Bags': '8', 'Bag Weight': '5 kg', 'Aroma': '8.17', 'Flavor': '8.08', 'Aftertaste': '7.92', 'Acidity': '8.17', 'Balance': '7.92', 'Sweetness': '10', 'Moisture Percentage': '11.3', 'Color': 'green', 'Category Two Defects': '2'}
{'Country of Origin': 'Taiwan', 'Number of Bags': '5', 'Bag Weight': '2 kg', 'Aroma': '8', 'Flavor': '8.17', 'Aftertaste': '8', 'Acidity': '7.92', 'Balance': '7.92', 'Sweetness': '10', 'Moisture Percentage': '10.3', 'Color': 'yellow-green', 'Category Two Defects': '0'}
{'Country of Origin': 'Taiwan', 'Number of Bags': '8', 'Bag Weight': '1 kg', 'Aroma': '8.08', 'Flavor': '8.17', 'Aftertaste': '7.75', 'Acidity': '7.92', 'Balance': '8', 'Sweetness': '10', 'Moisture Percentage': '11', 'Color': 'brownish', 'Category Two Defects': '1'}
{'Country of Origin': 'Tanzania, United Republic Of', 'Number of Bags': '200', 'Bag Weight': '30 kg', 'Aroma': '8.17', 'Flavor': '8', 'Aftertaste': '7.92', 'Acidity': '7.92', 'Balance': '7.75', 'Sweetness': '10', 'Moisture Percentage': '10', 'Color': 'greenish', 'Category Two Defects': '0'}
{'Country of Origin': 'Guatemala', 'Number of Bags': '8', 'Bag Weight': '30 kg', 'Aroma': '8', 'Flavor': '7.92', 'Aftertaste': '8.08', 'Acidity': '7.92', 'Balance': '8', 'Sweetness': '10', 'Moisture Percentage': '11.6', 'Color': 'yellowish', 'Category Two Defects': '0'}
{'Country of Origin': 'Taiwan', 'Number of Bags': '1', 'Bag Weight': '20 kg', 'Aroma': '8.08', 'Flavor': '8', 'Aftertaste': '7.92', 'Acidity': '7.92', 'Balance': '7.83', 'Sweetness': '10', 'Moisture Percentage': '10.4', 'Color': 'green', 'Category Two Defects': '0'}
{'Country of Origin': 'Thailand', 'Number of Bags': '2', 'Bag Weight': '1 kg', 'Aroma': '7.67', 'Flavor': '8', 'Aftertaste': '7.83', 'Acidity': '8', 'Balance': '8', 'Sweetness': '10', 'Moisture Percentage': '9.8', 'Color': 'browish-green', 'Category Two Defects': '5'}
{'Country of Origin': 'Colombia', 'Number of Bags': '6', 'Bag Weight': '5 kg', 'Aroma': '8.08', 'Flavor': '8', 'Aftertaste': '7.83', 'Acidity': '8.17', 'Balance': '7.83', 'Sweetness': '10', 'Moisture Percentage': '11.3', 'Color': 'brownish', 'Category Two Defects': '2'}
{'Country of Origin': 'Taiwan', 'Number of Bags': '4', 'Bag Weight': '50 kg', 'Aroma': '7.83', 'Flavor': '8', 'Aftertaste': '7.92', 'Acidity': '8', 'Balance': '7.92', 'Sweetness': '10', 'Moisture Percentage': '10.6', 'Color': 'bluish-green', 'Category Two Defects': '0'}
{'Country of Origin': 'Brazil', 'Number of Bags': '25', 'Bag Weight': '60 kg', 'Aroma': '7.83', 'Flavor': '8.08', 'Aftertaste': '7.83', 'Acidity': '7.92', 'Balance': '7.83', 'Sweetness': '10', 'Moisture Percentage': '11.3', 'Color': 'green', 'Category Two Defects': '3'}

{'Country of Origin': 'Taiwan', 'Number of Bags': '1', 'Bag Weight': '100 kg', 'Aroma': '7.92', 'Flavor': '7.92', 'Aftertaste': '8', 'Acidity': '7.92', 'Balance': '7.92', 'Sweetness': '10', 'Moisture Percentage': '9.1', 'Color': 'green', 'Category Two Defects': '2'}
{'Country of Origin': 'Taiwan', 'Number of Bags': '1', 'Bag Weight': '90 kg', 'Aroma': '8.17', 'Flavor': '8.08', 'Aftertaste': '7.92', 'Acidity': '8', 'Balance': '7.83', 'Sweetness': '10', 'Moisture Percentage': '10.6', 'Color': 'green', 'Category Two Defects': '0'}
{'Country of Origin': 'Taiwan', 'Number of Bags': '1', 'Bag Weight': '85 kg', 'Aroma': '8', 'Flavor': '8', 'Aftertaste': '8', 'Acidity': '7.92', 'Balance': '7.92', 'Sweetness': '10', 'Moisture Percentage': '10.2', 'Color': 'blue-green', 'Category Two Defects': '0'}
{'Country of Origin': 'United States (Hawaii)', 'Number of Bags': '80', 'Bag Weight': '15 kg', 'Aroma': '8', 'Flavor': '7.92', 'Aftertaste': '8', 'Acidity': '7.83', 'Balance': '8', 'Sweetness': '10', 'Moisture Percentage': '9.3', 'Color': 'green', 'Category Two Defects': '0'}
{'Country of Origin': 'Taiwan', 'Number of Bags': '3', 'Bag Weight': '48 kg', 'Aroma': '8', 'Flavor': '8', 'Aftertaste': '7.83', 'Acidity': '7.83', 'Balance': '7.92', 'Sweetness': '10', 'Moisture Percentage': '11.4', 'Color': 'bluish-green', 'Category Two Defects': '0'}
{'Country of Origin': 'Taiwan', 'Number of Bags': '3', 'Bag Weight': '50 kg', 'Aroma': '7.92', 'Flavor': '8', 'Aftertaste': '7.83', 'Acidity': '7.92', 'Balance': '7.83', 'Sweetness': '10', 'Moisture Percentage': '10.8', 'Color': 'green', 'Category Two Defects': '0'}
{'Country of Origin': 'Taiwan', 'Number of Bags': '4', 'Bag Weight': '5 kg', 'Aroma': '8.08', 'Flavor': '8.17', 'Aftertaste': '7.67', 'Acidity': '7.83', 'Balance': '7.92', 'Sweetness': '10', 'Moisture Percentage': '11.3', 'Color': 'green', 'Category Two Defects': '0'}
{'Country of Origin': 'Ethiopia', 'Number of Bags': '320', 'Bag Weight': '60 kg', 'Aroma': '7.67', 'Flavor': '7.83', 'Aftertaste': '7.83', 'Acidity': '8', 'Balance': '8', 'Sweetness': '10', 'Moisture Percentage': '9.9', 'Color': 'green', 'Category Two Defects': '3'}

Original Matrix:
```
[['Colombia' 1 '35 kg' 8.58 8.5 8.42 8.58 8.42 10 11.8 'green' 3]
 ['Taiwan' 1 '80 kg' 8.5 8.5 7.92 8.0 8.25 10 10.5 'blue-green' 0]
 ['Laos' 19 '25 kg' 8.33 8.42 8.08 8.17 8.17 10 10.4 'yellowish' 2]
 ['Costa Rica' 1 '22 kg' 8.08 8.17 8.17 8.25 8.08 10 11.8 'green' 0]
 ['Colombia' 2 '24 kg' 8.33 8.33 8.08 8.25 7.92 10 11.6 'yellow-green' 2]
 ['Guatemala' 5 '30 kg' 8.33 8.33 8.25 7.83 8.17 10 10.7 'green' 2]
 ['Taiwan' 1 '27 kg' 8.33 8.17 8.08 8.0 8.25 10 9.1 'green' 0]
 ['Taiwan' 1 '90 kg' 8.25 8.25 8.17 8.0 8.08 10 10.0 'yellow green' 1]
 ['Taiwan' 1 '30 kg' 8.08 8.08 8.25 8.08 8.0 10 10.8 'greenish' 0]
 ['Tanzania, United Republic Of' 320 '60 kg' 8.08 8.17 8.08 8.17 8.0 10
  11.0 'greenish' 0]
 ['Ethiopia' 10 '30 kg' 8.08 8.25 8.0 8.08 7.92 10 11.8 'greenish' 1]
 ['Guatemala' 5 '15 kg' 8.08 8.0 8.0 7.75 8.17 10 11.5 'brownish' 1]
 ['Taiwan' 1 '60 kg' 8.08 8.0 8.08 8.08 8.0 10 11.9 'green' 0]
 ['Ethiopia' 40 '60 kg' 7.67 8.17 8.0 8.33 8.0 10 11.6 'yellow- green' 2]
 ['Colombia' 70 '35 kg' 8.08 8.0 8.08 7.92 8.0 10 10.6 'green' 0]
 ['Taiwan' 1 '60 kg' 8.17 8.08 8.0 7.92 7.92 10 10.2 'green' 0]
 ['Ethiopia' 8 '5 kg' 8.17 8.08 7.92 8.17 7.92 10 11.3 'green' 2]
 ['Taiwan' 5 '2 kg' 8.0 8.17 8.0 7.92 7.92 10 10.3 'yellow-green' 0]
 ['Taiwan' 8 '1 kg' 8.08 8.17 7.75 7.92 8.0 10 11.0 'brownish' 1]
 ['Tanzania, United Republic Of' 200 '30 kg' 8.17 8.0 7.92 7.92 7.75 10
  10.0 'greenish' 0]
 ['Guatemala' 8 '30 kg' 8.0 7.92 8.08 7.92 8.0 10 11.6 'yellowish' 0]
 ['Taiwan' 1 '20 kg' 8.08 8.0 7.92 7.92 7.83 10 10.4 'green' 0]
 ['Thailand' 2 '1 kg' 7.67 8.0 7.83 8.0 8.0 10 9.8 'browish-green' 5]
 ['Colombia' 6 '5 kg' 8.08 8.0 7.83 8.17 7.83 10 11.3 'brownish' 2]
 ['Taiwan' 4 '50 kg' 7.83 8.0 7.92 8.0 7.92 10 10.6 'bluish-green' 0]
 ['Brazil' 25 '60 kg' 7.83 8.08 7.83 7.92 7.83 10 11.3 'green' 3]
 ['Taiwan' 1 '100 kg' 7.92 7.92 8.0 7.92 7.92 10 9.1 'green' 2]
 ['Taiwan' 1 '90 kg' 8.17 8.08 7.92 8.0 7.83 10 10.6 'green' 0]
 ['Taiwan' 1 '85 kg' 8.0 8.0 8.0 7.92 7.92 10 10.2 'blue-green' 0]
 ['United States (Hawaii)' 80 '15 kg' 8.0 7.92 8.0 7.83 8.0 10 9.3
  'green' 0]
 ['Taiwan' 3 '48 kg' 8.0 8.0 7.83 7.83 7.92 10 11.4 'bluish-green' 0]
 ['Taiwan' 3 '50 kg' 7.92 8.0 7.83 7.92 7.83 10 10.8 'green' 0]
 ['Taiwan' 4 '5 kg' 8.08 8.17 7.67 7.83 7.92 10 11.3 'green' 0]
 ['Ethiopia' 320 '60 kg' 7.67 7.83 7.83 8.0 8.0 10 9.9 'green' 3]]
```
Transposed Matrix:
```
[['Colombia' 'Taiwan' 'Laos' 'Costa Rica' 'Colombia' 'Guatemala' 'Taiwan'
  'Taiwan' 'Taiwan' 'Tanzania, United Republic Of' 'Ethiopia' 'Guatemala'
  'Taiwan' 'Ethiopia' 'Colombia' 'Taiwan' 'Ethiopia' 'Taiwan' 'Taiwan'
  'Tanzania, United Republic Of' 'Guatemala' 'Taiwan' 'Thailand'
  'Colombia' 'Taiwan' 'Brazil' 'Taiwan' 'Taiwan' 'Taiwan'
  'United States (Hawaii)' 'Taiwan' 'Taiwan' 'Taiwan' 'Ethiopia']
 [1 1 19 1 2 5 1 1 1 320 10 5 1 40 70 1 8 5 8 200 8 1 2 6 4 25 1 1 1 80 3
  3 4 320]
 ['35 kg' '80 kg' '25 kg' '22 kg' '24 kg' '30 kg' '27 kg' '90 kg' '30 kg'
  '60 kg' '30 kg' '15 kg' '60 kg' '60 kg' '35 kg' '60 kg' '5 kg' '2 kg'
  '1 kg' '30 kg' '30 kg' '20 kg' '1 kg' '5 kg' '50 kg' '60 kg' '100 kg'
  '90 kg' '85 kg' '15 kg' '48 kg' '50 kg' '5 kg' '60 kg']
 [8.58 8.5 8.33 8.08 8.33 8.33 8.33 8.25 8.08 8.08 8.08 8.08 8.08 7.67
  8.08 8.17 8.17 8.0 8.08 8.17 8.0 8.08 7.67 8.08 7.83 7.83 7.92 8.17 8.0
  8.0 8.0 7.92 8.08 7.67]
 [8.5 8.5 8.42 8.17 8.33 8.33 8.17 8.25 8.08 8.17 8.25 8.0 8.0 8.17 8.0
  8.08 8.08 8.17 8.17 8.0 7.92 8.0 8.0 8.0 8.0 8.08 7.92 8.08 8.0 7.92
  8.0 8.0 8.17 7.83]
 [8.42 7.92 8.08 8.17 8.08 8.25 8.08 8.17 8.25 8.08 8.0 8.0 8.08 8.0 8.08
```

8.0 7.92 8.0 7.75 7.92 8.08 7.92 7.83 7.83 7.92 7.83 8.0 7.92 8.0 8.0
  7.83 7.83 7.67 7.83]
 [8.58 8.0 8.17 8.25 8.25 7.83 8.0 8.0 8.08 8.17 8.08 7.75 8.08 8.33 7.92
  7.92 8.17 7.92 7.92 7.92 7.92 7.92 8.0 8.17 8.0 7.92 7.92 8.0 7.92 7.83
  7.83 7.92 7.83 8.0]
 [8.42 8.25 8.17 8.08 7.92 8.17 8.25 8.08 8.0 8.0 7.92 8.17 8.0 8.0 8.0
  7.92 7.92 7.92 8.0 7.75 8.0 7.83 8.0 7.83 7.92 7.83 7.92 7.83 7.92 8.0
  7.92 7.83 7.92 8.0]
 [10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10
  10 10 10 10 10 10 10 10 10 10]
 [11.8 10.5 10.4 11.8 11.6 10.7 9.1 10.0 10.8 11.0 11.8 11.5 11.9 11.6
  10.6 10.2 11.3 10.3 11.0 10.0 11.6 10.4 9.8 11.3 10.6 11.3 9.1 10.6
  10.2 9.3 11.4 10.8 11.3 9.9]
 ['green' 'blue-green' 'yellowish' 'green' 'yellow-green' 'green' 'green'
  'yellow green' 'greenish' 'greenish' 'greenish' 'brownish' 'green'
  'yellow- green' 'green' 'green' 'green' 'yellow-green' 'brownish'
  'greenish' 'yellowish' 'green' 'browish-green' 'brownish'
  'bluish-green' 'green' 'green' 'green' 'blue-green' 'green'
  'bluish-green' 'green' 'green' 'green']
 [3 0 2 0 2 2 0 1 0 0 1 1 0 2 0 0 2 0 1 0 0 0 5 2 0 3 2 0 0 0 0 0 0 3]]
Horizontal Stack:
[['Colombia' 1 '35 kg' 8.58 8.5 8.42 8.58 8.42 10 11.8 'green' 3]
 ['Taiwan' 1 '80 kg' 8.5 8.5 7.92 8.0 8.25 10 10.5 'blue-green' 0]
 ['Laos' 19 '25 kg' 8.33 8.42 8.08 8.17 8.17 10 10.4 'yellowish' 2]
 ['Costa Rica' 1 '22 kg' 8.08 8.17 8.17 8.25 8.08 10 11.8 'green' 0]
 ['Colombia' 2 '24 kg' 8.33 8.33 8.08 8.25 7.92 10 11.6 'yellow-green' 2]
 ['Guatemala' 5 '30 kg' 8.33 8.33 8.25 7.83 8.17 10 10.7 'green' 2]
 ['Taiwan' 1 '27 kg' 8.33 8.17 8.08 8.0 8.25 10 9.1 'green' 0]
 ['Taiwan' 1 '90 kg' 8.25 8.25 8.17 8.0 8.08 10 10.0 'yellow green' 1]
 ['Taiwan' 1 '30 kg' 8.08 8.08 8.25 8.08 8.0 10 10.8 'greenish' 0]
 ['Tanzania, United Republic Of' 320 '60 kg' 8.08 8.17 8.08 8.17 8.0 10
  11.0 'greenish' 0]
 ['Ethiopia' 10 '30 kg' 8.08 8.25 8.0 8.08 7.92 10 11.8 'greenish' 1]
 ['Guatemala' 5 '15 kg' 8.08 8.0 8.0 7.75 8.17 10 11.5 'brownish' 1]
 ['Taiwan' 1 '60 kg' 8.08 8.0 8.08 8.08 8.0 10 11.9 'green' 0]
 ['Ethiopia' 40 '60 kg' 7.67 8.17 8.0 8.33 8.0 10 11.6 'yellow- green' 2]
 ['Colombia' 70 '35 kg' 8.08 8.0 8.08 7.92 8.0 10 10.6 'green' 0]
 ['Taiwan' 1 '60 kg' 8.17 8.08 8.0 7.92 7.92 10 10.2 'green' 0]
 ['Ethiopia' 8 '5 kg' 8.17 8.08 7.92 8.17 7.92 10 11.3 'green' 2]
 ['Taiwan' 5 '2 kg' 8.0 8.17 8.0 7.92 7.92 10 10.3 'yellow-green' 0]
 ['Taiwan' 8 '1 kg' 8.08 8.17 7.75 7.92 8.0 10 11.0 'brownish' 1]
 ['Tanzania, United Republic Of' 200 '30 kg' 8.17 8.0 7.92 7.92 7.75 10
  10.0 'greenish' 0]
 ['Guatemala' 8 '30 kg' 8.0 7.92 8.08 7.92 8.0 10 11.6 'yellowish' 0]
 ['Taiwan' 1 '20 kg' 8.08 8.0 7.92 7.92 7.83 10 10.4 'green' 0]
 ['Thailand' 2 '1 kg' 7.67 8.0 7.83 8.0 8.0 10 9.8 'browish-green' 5]
 ['Colombia' 6 '5 kg' 8.08 8.0 7.83 8.17 7.83 10 11.3 'brownish' 2]
 ['Taiwan' 4 '50 kg' 7.83 8.0 7.92 8.0 7.92 10 10.6 'bluish-green' 0]
 ['Brazil' 25 '60 kg' 7.83 8.08 7.83 7.92 7.83 10 11.3 'green' 3]
 ['Taiwan' 1 '100 kg' 7.92 7.92 8.0 7.92 7.92 10 9.1 'green' 2]
 ['Taiwan' 1 '90 kg' 8.17 8.08 7.92 8.0 7.83 10 10.6 'green' 0]
 ['Taiwan' 1 '85 kg' 8.0 8.0 8.0 7.92 7.92 10 10.2 'blue-green' 0]
 ['United States (Hawaii)' 80 '15 kg' 8.0 7.92 8.0 7.83 8.0 10 9.3
  'green' 0]
 ['Taiwan' 3 '48 kg' 8.0 8.0 7.83 7.83 7.92 10 11.4 'bluish-green' 0]
 ['Taiwan' 3 '50 kg' 7.92 8.0 7.83 7.92 7.83 10 10.8 'green' 0]
 ['Taiwan' 4 '5 kg' 8.08 8.17 7.67 7.83 7.92 10 11.3 'green' 0]
 ['Ethiopia' 320 '60 kg' 7.67 7.83 7.83 8.0 8.0 10 9.9 'green' 3]]
Vertical Stack:
[['Colombia' 1 '35 kg' 8.58 8.5 8.42]
 ['Taiwan' 1 '80 kg' 8.5 8.5 7.92]
 ['Laos' 19 '25 kg' 8.33 8.42 8.08]
 ['Costa Rica' 1 '22 kg' 8.08 8.17 8.17]
 ['Colombia' 2 '24 kg' 8.33 8.33 8.08]
 ['Guatemala' 5 '30 kg' 8.33 8.33 8.25]
 ['Taiwan' 1 '27 kg' 8.33 8.17 8.08]
 ['Taiwan' 1 '90 kg' 8.25 8.25 8.17]
 ['Taiwan' 1 '30 kg' 8.08 8.08 8.25]
 ['Tanzania, United Republic Of' 320 '60 kg' 8.08 8.17 8.08]
 ['Ethiopia' 10 '30 kg' 8.08 8.25 8.0]
 ['Guatemala' 5 '15 kg' 8.08 8.0 8.0]
 ['Taiwan' 1 '60 kg' 8.08 8.0 8.08]
 ['Ethiopia' 40 '60 kg' 7.67 8.17 8.0]
 ['Colombia' 70 '35 kg' 8.08 8.0 8.08]

['Taiwan' 1 '60 kg' 8.17 8.08 8.0]
['Ethiopia' 8 '5 kg' 8.17 8.08 7.92]
['Taiwan' 5 '2 kg' 8.0 8.17 8.0]
['Taiwan' 8 '1 kg' 8.08 8.17 7.75]
['Tanzania, United Republic Of' 200 '30 kg' 8.17 8.0 7.92]
['Guatemala' 8 '30 kg' 8.0 7.92 8.08]
['Taiwan' 1 '20 kg' 8.08 8.0 7.92]
['Thailand' 2 '1 kg' 7.67 8.0 7.83]
['Colombia' 6 '5 kg' 8.08 8.0 7.83]
['Taiwan' 4 '50 kg' 7.83 8.0 7.92]
['Brazil' 25 '60 kg' 7.83 8.08 7.83]
['Taiwan' 1 '100 kg' 7.92 7.92 8.0]
['Taiwan' 1 '90 kg' 8.17 8.08 7.92]
['Taiwan' 1 '85 kg' 8.0 8.0 8.0]
['United States (Hawaii)' 80 '15 kg' 8.0 7.92 8.0]
['Taiwan' 3 '48 kg' 8.0 8.0 7.83]
['Taiwan' 3 '50 kg' 7.92 8.0 7.83]
['Taiwan' 4 '5 kg' 8.08 8.17 7.67]
['Ethiopia' 320 '60 kg' 7.67 7.83 7.83]
[8.58 8.42 10 11.8 'green' 3]
[8.0 8.25 10 10.5 'blue-green' 0]
[8.17 8.17 10 10.4 'yellowish' 2]
[8.25 8.08 10 11.8 'green' 0]
[8.25 7.92 10 11.6 'yellow-green' 2]
[7.83 8.17 10 10.7 'green' 2]
[8.0 8.25 10 9.1 'green' 0]
[8.0 8.08 10 10.0 'yellow green' 1]
[8.08 8.0 10 10.8 'greenish' 0]
[8.17 8.0 10 11.0 'greenish' 0]
[8.08 7.92 10 11.8 'greenish' 1]
[7.75 8.17 10 11.5 'brownish' 1]
[8.08 8.0 10 11.9 'green' 0]
[8.33 8.0 10 11.6 'yellow- green' 2]
[7.92 8.0 10 10.6 'green' 0]
[7.92 7.92 10 10.2 'green' 0]
[8.17 7.92 10 11.3 'green' 2]
[7.92 7.92 10 10.3 'yellow-green' 0]
[7.92 8.0 10 11.0 'brownish' 1]
[7.92 7.75 10 10.0 'greenish' 0]
[7.92 8.0 10 11.6 'yellowish' 0]
[7.92 7.83 10 10.4 'green' 0]
[8.0 8.0 10 9.8 'browish-green' 5]
[8.17 7.83 10 11.3 'brownish' 2]
[8.0 7.92 10 10.6 'bluish-green' 0]
[7.92 7.83 10 11.3 'green' 3]
[7.92 7.92 10 9.1 'green' 2]
[8.0 7.83 10 10.6 'green' 0]
[7.92 7.92 10 10.2 'blue-green' 0]
[7.83 8.0 10 9.3 'green' 0]
[7.83 7.92 10 11.4 'bluish-green' 0]
[7.92 7.83 10 10.8 'green' 0]
[7.83 7.92 10 11.3 'green' 0]
[8.0 8.0 10 9.9 'green' 3]]
Country: Colombia, Bags: 1, Weight: 35 kg, Aroma: 8.58, Flavor: 8.5, Aftertaste: 8.42, Acidity: 8.58, Balance: 8.42, Sweetness: 10, Moisture: 11.8, Color: green, Defects: 3
Country: Taiwan, Bags: 1, Weight: 80 kg, Aroma: 8.5, Flavor: 8.5, Aftertaste: 7.92, Acidity: 8.0, Balance: 8.25, Sweetness: 10, Moisture: 10.5, Color: blue-green, Defects: 0
Country: Laos, Bags: 19, Weight: 25 kg, Aroma: 8.33, Flavor: 8.42, Aftertaste: 8.08, Acidity: 8.17, Balance: 8.17, Sweetness: 10, Moisture: 10.4, Color: yellowish, Defects: 2
Country: Costa Rica, Bags: 1, Weight: 22 kg, Aroma: 8.08, Flavor: 8.17, Aftertaste: 8.17, Acidity: 8.25, Balance: 8.08, Sweetness: 10, Moisture: 11.8, Color: green, Defects: 0
Country: Colombia, Bags: 2, Weight: 24 kg, Aroma: 8.33, Flavor: 8.33, Aftertaste: 8.08, Acidity: 8.25, Balance: 7.92, Sweetness: 10, Moisture: 11.6, Color: yellow-green, Defects: 2
Country: Guatemala, Bags: 5, Weight: 30 kg, Aroma: 8.33, Flavor: 8.33, Aftertaste: 8.25, Acidity: 7.83, Balance: 8.17, Sweetness: 10, Moisture: 10.7, Color: green, Defects: 2
Country: Taiwan, Bags: 1, Weight: 27 kg, Aroma: 8.33, Flavor: 8.17, Aftertaste: 8.08, Acidity: 8.0, Balance: 8.25, Sweetness: 10, Moisture: 9.1, Color: green, Defects: 0
Country: Taiwan, Bags: 1, Weight: 90 kg, Aroma: 8.25, Flavor: 8.25, Aftertaste: 8.17, Acidity: 8.0, Balance: 8.08, Sweetness: 10, Moisture: 10.0, Color: yellow green, Defects: 1
Country: Taiwan, Bags: 1, Weight: 30 kg, Aroma: 8.08, Flavor: 8.08, Aftertaste: 8.25, Acidity: 8.08, Balance: 8.0, Sweetness: 10, Moisture: 10.8, Color: greenish, Defects: 0
Country: Tanzania, United Republic Of, Bags: 320, Weight: 60 kg, Aroma: 8.08, Flavor: 8.17, Aftertaste: 8.08, Acidity: 8.17, Balance: 8.0, Sweetness: 10, Moisture: 11.0, Color: greenish, Defects: 0

Country: Ethiopia, Bags: 10, Weight: 30 kg, Aroma: 8.08, Flavor: 8.25, Aftertaste: 8.0, Acidity: 8.08, Balance: 7.92, Sweetness: 10, Moisture: 11.8, Color: greenish, Defects: 1
Country: Guatemala, Bags: 5, Weight: 15 kg, Aroma: 8.08, Flavor: 8.0, Aftertaste: 8.0, Acidity: 7.75, Balance: 8.17, Sweetness: 10, Moisture: 11.5, Color: brownish, Defects: 1
Country: Taiwan, Bags: 1, Weight: 60 kg, Aroma: 8.08, Flavor: 8.0, Aftertaste: 8.08, Acidity: 8.08, Balance: 8.0, Sweetness: 10, Moisture: 11.9, Color: green, Defects: 0
Country: Ethiopia, Bags: 40, Weight: 60 kg, Aroma: 7.67, Flavor: 8.17, Aftertaste: 8.0, Acidity: 8.33, Balance: 8.0, Sweetness: 10, Moisture: 11.6, Color: yellow- green, Defects: 2
Country: Colombia, Bags: 70, Weight: 35 kg, Aroma: 8.08, Flavor: 8.0, Aftertaste: 8.08, Acidity: 7.92, Balance: 8.0, Sweetness: 10, Moisture: 10.6, Color: green, Defects: 0
Country: Taiwan, Bags: 1, Weight: 60 kg, Aroma: 8.17, Flavor: 8.08, Aftertaste: 8.0, Acidity: 7.92, Balance: 7.92, Sweetness: 10, Moisture: 10.2, Color: green, Defects: 0
Country: Ethiopia, Bags: 8, Weight: 5 kg, Aroma: 8.17, Flavor: 8.08, Aftertaste: 7.92, Acidity: 8.17, Balance: 7.92, Sweetness: 10, Moisture: 11.3, Color: green, Defects: 2
Country: Taiwan, Bags: 5, Weight: 2 kg, Aroma: 8.0, Flavor: 8.17, Aftertaste: 8.0, Acidity: 7.92, Balance: 7.92, Sweetness: 10, Moisture: 10.3, Color: yellow-green, Defects: 0
Country: Taiwan, Bags: 8, Weight: 1 kg, Aroma: 8.08, Flavor: 8.17, Aftertaste: 7.75, Acidity: 7.92, Balance: 8.0, Sweetness: 10, Moisture: 11.0, Color: brownish, Defects: 1
Country: Tanzania, United Republic Of, Bags: 200, Weight: 30 kg, Aroma: 8.17, Flavor: 8.0, Aftertaste: 7.92, Acidity: 7.92, Balance: 7.75, Sweetness: 10, Moisture: 10.0, Color: greenish, Defects: 0
Country: Guatemala, Bags: 8, Weight: 30 kg, Aroma: 8.0, Flavor: 7.92, Aftertaste: 8.08, Acidity: 7.92, Balance: 8.0, Sweetness: 10, Moisture: 11.6, Color: yellowish, Defects: 0
Country: Taiwan, Bags: 1, Weight: 20 kg, Aroma: 8.08, Flavor: 8.0, Aftertaste: 7.92, Acidity: 7.92, Balance: 7.83, Sweetness: 10, Moisture: 10.4, Color: green, Defects: 0
Country: Thailand, Bags: 2, Weight: 1 kg, Aroma: 7.67, Flavor: 8.0, Aftertaste: 7.83, Acidity: 8.0, Balance: 8.0, Sweetness: 10, Moisture: 9.8, Color: browish-green, Defects: 5
Country: Colombia, Bags: 6, Weight: 5 kg, Aroma: 8.08, Flavor: 8.0, Aftertaste: 7.83, Acidity: 8.17, Balance: 7.83, Sweetness: 10, Moisture: 11.3, Color: brownish, Defects: 2
Country: Taiwan, Bags: 4, Weight: 50 kg, Aroma: 7.83, Flavor: 8.0, Aftertaste: 7.92, Acidity: 8.0, Balance: 7.92, Sweetness: 10, Moisture: 10.6, Color: bluish-green, Defects: 0
Country: Brazil, Bags: 25, Weight: 60 kg, Aroma: 7.83, Flavor: 8.08, Aftertaste: 7.83, Acidity: 7.92, Balance: 7.83, Sweetness: 10, Moisture: 11.3, Color: green, Defects: 3
Country: Taiwan, Bags: 1, Weight: 100 kg, Aroma: 7.92, Flavor: 7.92, Aftertaste: 8.0, Acidity: 7.92, Balance: 7.92, Sweetness: 10, Moisture: 9.1, Color: green, Defects: 2
Country: Taiwan, Bags: 1, Weight: 90 kg, Aroma: 8.17, Flavor: 8.08, Aftertaste: 7.92, Acidity: 8.0, Balance: 7.83, Sweetness: 10, Moisture: 10.6, Color: green, Defects: 0
Country: Taiwan, Bags: 1, Weight: 85 kg, Aroma: 8.0, Flavor: 8.0, Aftertaste: 8.0, Acidity: 7.92, Balance: 7.92, Sweetness: 10, Moisture: 10.2, Color: blue-green, Defects: 0
Country: United States (Hawaii), Bags: 80, Weight: 15 kg, Aroma: 8.0, Flavor: 7.92, Aftertaste: 8.0, Acidity: 7.83, Balance: 8.0, Sweetness: 10, Moisture: 9.3, Color: green, Defects: 0
Country: Taiwan, Bags: 3, Weight: 48 kg, Aroma: 8.0, Flavor: 8.0, Aftertaste: 7.83, Acidity: 7.83, Balance: 7.92, Sweetness: 10, Moisture: 11.4, Color: bluish-green, Defects: 0
Country: Taiwan, Bags: 3, Weight: 50 kg, Aroma: 7.92, Flavor: 8.0, Aftertaste: 7.83, Acidity: 7.92, Balance: 7.83, Sweetness: 10, Moisture: 10.8, Color: green, Defects: 0
Country: Taiwan, Bags: 4, Weight: 5 kg, Aroma: 8.08, Flavor: 8.17, Aftertaste: 7.67, Acidity: 7.83, Balance: 7.92, Sweetness: 10, Moisture: 11.3, Color: green, Defects: 0
Country: Ethiopia, Bags: 320, Weight: 60 kg, Aroma: 7.67, Flavor: 7.83, Aftertaste: 7.83, Acidity: 8.0, Balance: 8.0, Sweetness: 10, Moisture: 9.9, Color: green, Defects: 3

Arithmetic Operations:
Sum of Number of Bags: 1159

Statistical Operations:
Minimum Aroma: 7.67
Maximum Flavor: 8.5

Country of Origin:
['Colombia' 'Taiwan' 'Laos' 'Costa Rica' 'Colombia' 'Guatemala' 'Taiwan'
 'Taiwan' 'Taiwan' 'Tanzania, United Republic Of' 'Ethiopia' 'Guatemala'
 'Taiwan' 'Ethiopia' 'Colombia' 'Taiwan' 'Ethiopia' 'Taiwan' 'Taiwan'
 'Tanzania, United Republic Of' 'Guatemala' 'Taiwan' 'Thailand' 'Colombia'
 'Taiwan' 'Brazil' 'Taiwan' 'Taiwan' 'Taiwan' 'United States (Hawaii)'
 'Taiwan' 'Taiwan' 'Taiwan' 'Ethiopia']
Number of Bags:
[  1   1  19   1   2   5   1   1   1 320  10   5   1  40  70   1   8   5
   8 200   8   1   2   6   4  25   1   1   1  80   3   3   4 320]
Bag Weight:
['35 kg' '80 kg' '25 kg' '22 kg' '24 kg' '30 kg' '27 kg' '90 kg' '30 kg'
 '60 kg' '30 kg' '15 kg' '60 kg' '60 kg' '35 kg' '60 kg' '5 kg' '2 kg'
 '1 kg' '30 kg' '30 kg' '20 kg' '1 kg' '5 kg' '50 kg' '60 kg' '100 kg'
 '90 kg' '85 kg' '15 kg' '48 kg' '50 kg' '5 kg' '60 kg']
Aroma:
[8.58 8.5  8.33 8.08 8.33 8.33 8.33 8.25 8.08 8.08 8.08 8.08 8.08 7.67
 8.08 8.17 8.17 8.   8.08 8.17 8.   8.08 7.67 8.08 7.83 7.83 7.92 8.17

```
   8.  8.  8.  7.92 8.08 7.67]
Flavor:
[8.5  8.5  8.42 8.17 8.33 8.33 8.17 8.25 8.08 8.17 8.25 8.  8.  8.17
 8.  8.08 8.08 8.17 8.17 8.  7.92 8.  8.  8.  8.  8.08 7.92 8.08
 8.  7.92 8.  8.  8.17 7.83]
Aftertaste:
[8.42 7.92 8.08 8.17 8.08 8.25 8.08 8.17 8.25 8.08 8.  8.  8.08 8.
 8.08 8.  7.92 8.  7.75 7.92 8.08 7.92 7.83 7.83 7.92 7.83 8.  7.92
 8.  8.  7.83 7.83 7.67 7.83]
Acidity:
[8.58 8.  8.17 8.25 8.25 7.83 8.  8.  8.08 8.17 8.08 7.75 8.08 8.33
 7.92 7.92 8.17 7.92 7.92 7.92 7.92 7.92 8.  8.17 8.  7.92 7.92 8.
 7.92 7.83 7.83 7.92 7.83 8. ]
Balance:
[8.42 8.25 8.17 8.08 7.92 8.17 8.25 8.08 8.  8.  7.92 8.17 8.  8.
 8.  7.92 7.92 7.92 8.  7.75 8.  7.83 8.  7.83 7.92 7.83 7.92 7.83
 7.92 8.  7.92 7.83 7.92 8. ]
Sweetness:
[10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10
 10 10 10 10 10 10 10 10 10 10]
Moisture Percentage:
[11.8 10.5 10.4 11.8 11.6 10.7  9.1 10.  10.8 11.  11.8 11.5 11.9 11.6
 10.6 10.2 11.3 10.3 11.  10.  11.6 10.4  9.8 11.3 10.6 11.3  9.1 10.6
 10.2  9.3 11.4 10.8 11.3  9.9]
Color:
['green' 'blue-green' 'yellowish' 'green' 'yellow-green' 'green' 'green'
 'yellow green' 'greenish' 'greenish' 'greenish' 'brownish' 'green'
 'yellow- green' 'green' 'green' 'green' 'yellow-green' 'brownish'
 'greenish' 'yellowish' 'green' 'browish-green' 'brownish' 'bluish-green'
 'green' 'green' 'green' 'blue-green' 'green' 'bluish-green' 'green'
 'green' 'green']
Category Two Defects:
[3 0 2 0 2 2 0 1 0 0 1 1 0 2 0 0 2 0 1 0 0 0 5 2 0 3 2 0 0 0 0 0 0 3]
Stacked DataFrame:
        Country of Origin  Number of Bags Bag Weight  Aroma  Flavor  \
0            Colombia               1     35 kg   8.58   8.50
1              Taiwan               1     80 kg   8.50   8.50
2                Laos              19     25 kg   8.33   8.42
3          Costa Rica               1     22 kg   8.08   8.17
4            Colombia               2     24 kg   8.33   8.33
..                ...             ...       ...    ...    ...
29  United States (Hawaii)         80     15 kg   8.00   7.92
30             Taiwan               3     48 kg   8.00   8.00
31             Taiwan               3     50 kg   7.92   8.00
32             Taiwan               4      5 kg   8.08   8.17
33            Ethiopia             320     60 kg   7.67   7.83

    Aftertaste  Acidity  Balance  Sweetness  Moisture Percentage  \
0        8.42     8.58     8.42         10                 11.8
1        7.92     8.00     8.25         10                 10.5
2        8.08     8.17     8.17         10                 10.4
3        8.17     8.25     8.08         10                 11.8
4        8.08     8.25     7.92         10                 11.6
..        ...      ...      ...        ...                  ...
29       8.00     7.83     8.00         10                  9.3
30       7.83     7.83     7.92         10                 11.4
31       7.83     7.92     7.83         10                 10.8
32       7.67     7.83     7.92         10                 11.3
33       7.83     8.00     8.00         10                  9.9

        Color  Category Two Defects
0        green                     3
1   blue-green                     0
2    yellowish                     2
3        green                     0
4  yellow-green                    2
..        ...                    ...
29       green                     0
30  bluish-green                   0
31       green                     0
32       green                     0
33       green                     3

[68 rows x 12 columns]
```

Taiwan DataFrame:

| | Country of Origin | Number of Bags | Bag Weight | Aroma | Flavor | Aftertaste |
|---|---|---|---|---|---|---|
| 1 | Taiwan | 1 | 80 kg | 8.50 | 8.50 | 7.92 |
| 6 | Taiwan | 1 | 27 kg | 8.33 | 8.17 | 8.08 |
| 7 | Taiwan | 1 | 90 kg | 8.25 | 8.25 | 8.17 |
| 8 | Taiwan | 1 | 30 kg | 8.08 | 8.08 | 8.25 |
| 12 | Taiwan | 1 | 60 kg | 8.08 | 8.00 | 8.08 |
| 15 | Taiwan | 1 | 60 kg | 8.17 | 8.08 | 8.00 |
| 17 | Taiwan | 5 | 2 kg | 8.00 | 8.17 | 8.00 |
| 18 | Taiwan | 8 | 1 kg | 8.08 | 8.17 | 7.75 |
| 21 | Taiwan | 1 | 20 kg | 8.08 | 8.00 | 7.92 |
| 24 | Taiwan | 4 | 50 kg | 7.83 | 8.00 | 7.92 |
| 26 | Taiwan | 1 | 100 kg | 7.92 | 7.92 | 8.00 |
| 27 | Taiwan | 1 | 90 kg | 8.17 | 8.08 | 7.92 |
| 28 | Taiwan | 1 | 85 kg | 8.00 | 8.00 | 8.00 |
| 30 | Taiwan | 3 | 48 kg | 8.00 | 8.00 | 7.83 |
| 31 | Taiwan | 3 | 50 kg | 7.92 | 8.00 | 7.83 |
| 32 | Taiwan | 4 | 5 kg | 8.08 | 8.17 | 7.67 |

| | Acidity | Balance | Sweetness | Moisture Percentage | Color |
|---|---|---|---|---|---|
| 1 | 8.00 | 8.25 | 10 | 10.5 | blue-green |
| 6 | 8.00 | 8.25 | 10 | 9.1 | green |
| 7 | 8.00 | 8.08 | 10 | 10.0 | yellow green |
| 8 | 8.08 | 8.00 | 10 | 10.8 | greenish |
| 12 | 8.08 | 8.00 | 10 | 11.9 | green |
| 15 | 7.92 | 7.92 | 10 | 10.2 | green |
| 17 | 7.92 | 7.92 | 10 | 10.3 | yellow-green |
| 18 | 7.92 | 8.00 | 10 | 11.0 | brownish |
| 21 | 7.92 | 7.83 | 10 | 10.4 | green |
| 24 | 8.00 | 7.92 | 10 | 10.6 | bluish-green |
| 26 | 7.92 | 7.92 | 10 | 9.1 | green |
| 27 | 8.00 | 7.83 | 10 | 10.6 | green |
| 28 | 7.92 | 7.92 | 10 | 10.2 | blue-green |
| 30 | 7.83 | 7.92 | 10 | 11.4 | bluish-green |
| 31 | 7.92 | 7.83 | 10 | 10.8 | green |
| 32 | 7.83 | 7.92 | 10 | 11.3 | green |

| | Category Two Defects |
|---|---|
| 1 | 0 |
| 6 | 0 |
| 7 | 1 |
| 8 | 0 |
| 12 | 0 |
| 15 | 0 |
| 17 | 0 |
| 18 | 1 |
| 21 | 0 |
| 24 | 0 |
| 26 | 2 |
| 27 | 0 |
| 28 | 0 |
| 30 | 0 |
| 31 | 0 |
| 32 | 0 |

Sorted DataFrame:

| | Country of Origin | Number of Bags | Bag Weight | Aroma | Flavor |
|---|---|---|---|---|---|
| 33 | Ethiopia | 320 | 60 kg | 7.67 | 7.83 |
| 9 | Tanzania, United Republic Of | 320 | 60 kg | 8.08 | 8.17 |
| 19 | Tanzania, United Republic Of | 200 | 30 kg | 8.17 | 8.00 |
| 29 | United States (Hawaii) | 80 | 15 kg | 8.00 | 7.92 |
| 14 | Colombia | 70 | 35 kg | 8.08 | 8.00 |
| 13 | Ethiopia | 40 | 60 kg | 7.67 | 8.17 |
| 25 | Brazil | 25 | 60 kg | 7.83 | 8.08 |
| 2 | Laos | 19 | 25 kg | 8.33 | 8.42 |
| 10 | Ethiopia | 10 | 30 kg | 8.08 | 8.25 |
| 20 | Guatemala | 8 | 30 kg | 8.00 | 7.92 |
| 18 | Taiwan | 8 | 1 kg | 8.08 | 8.17 |
| 16 | Ethiopia | 8 | 5 kg | 8.17 | 8.08 |
| 23 | Colombia | 6 | 5 kg | 8.08 | 8.00 |
| 17 | Taiwan | 5 | 2 kg | 8.00 | 8.17 |
| 11 | Guatemala | 5 | 15 kg | 8.08 | 8.00 |
| 5 | Guatemala | 5 | 30 kg | 8.33 | 8.33 |
| 24 | Taiwan | 4 | 50 kg | 7.83 | 8.00 |
| 32 | Taiwan | 4 | 5 kg | 8.08 | 8.17 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 31 | Taiwan | 3 | 50 kg | 7.92 | 8.00 |
| 30 | Taiwan | 3 | 48 kg | 8.00 | 8.00 |
| 22 | Thailand | 2 | 1 kg | 7.67 | 8.00 |
| 4 | Colombia | 2 | 24 kg | 8.33 | 8.33 |
| 26 | Taiwan | 1 | 100 kg | 7.92 | 7.92 |
| 3 | Costa Rica | 1 | 22 kg | 8.08 | 8.17 |
| 28 | Taiwan | 1 | 85 kg | 8.00 | 8.00 |
| 27 | Taiwan | 1 | 90 kg | 8.17 | 8.08 |
| 12 | Taiwan | 1 | 60 kg | 8.08 | 8.00 |
| 15 | Taiwan | 1 | 60 kg | 8.17 | 8.08 |
| 21 | Taiwan | 1 | 20 kg | 8.08 | 8.00 |
| 6 | Taiwan | 1 | 27 kg | 8.33 | 8.17 |
| 7 | Taiwan | 1 | 90 kg | 8.25 | 8.25 |
| 8 | Taiwan | 1 | 30 kg | 8.08 | 8.08 |
| 1 | Taiwan | 1 | 80 kg | 8.50 | 8.50 |
| 0 | Colombia | 1 | 35 kg | 8.58 | 8.50 |

| | Aftertaste | Acidity | Balance | Sweetness | Moisture Percentage \ |
|---|---|---|---|---|---|
| 33 | 7.83 | 8.00 | 8.00 | 10 | 9.9 |
| 9 | 8.08 | 8.17 | 8.00 | 10 | 11.0 |
| 19 | 7.92 | 7.92 | 7.75 | 10 | 10.0 |
| 29 | 8.00 | 7.83 | 8.00 | 10 | 9.3 |
| 14 | 8.08 | 7.92 | 8.00 | 10 | 10.6 |
| 13 | 8.00 | 8.33 | 8.00 | 10 | 11.6 |
| 25 | 7.83 | 7.92 | 7.83 | 10 | 11.3 |
| 2 | 8.08 | 8.17 | 8.17 | 10 | 10.4 |
| 10 | 8.00 | 8.08 | 7.92 | 10 | 11.8 |
| 20 | 8.08 | 7.92 | 8.00 | 10 | 11.6 |
| 18 | 7.75 | 7.92 | 8.00 | 10 | 11.0 |
| 16 | 7.92 | 8.17 | 7.92 | 10 | 11.3 |
| 23 | 7.83 | 8.17 | 7.83 | 10 | 11.3 |
| 17 | 8.00 | 7.92 | 7.92 | 10 | 10.3 |
| 11 | 8.00 | 7.75 | 8.17 | 10 | 11.5 |
| 5 | 8.25 | 7.83 | 8.17 | 10 | 10.7 |
| 24 | 7.92 | 8.00 | 7.92 | 10 | 10.6 |
| 32 | 7.67 | 7.83 | 7.92 | 10 | 11.3 |
| 31 | 7.83 | 7.92 | 7.83 | 10 | 10.8 |
| 30 | 7.83 | 7.83 | 7.92 | 10 | 11.4 |
| 22 | 7.83 | 8.00 | 8.00 | 10 | 9.8 |
| 4 | 8.08 | 8.25 | 7.92 | 10 | 11.6 |
| 26 | 8.00 | 7.92 | 7.92 | 10 | 9.1 |
| 3 | 8.17 | 8.25 | 8.08 | 10 | 11.8 |
| 28 | 8.00 | 7.92 | 7.92 | 10 | 10.2 |
| 27 | 7.92 | 8.00 | 7.83 | 10 | 10.6 |
| 12 | 8.08 | 8.08 | 8.00 | 10 | 11.9 |
| 15 | 8.00 | 7.92 | 7.92 | 10 | 10.2 |
| 21 | 7.92 | 7.92 | 7.83 | 10 | 10.4 |
| 6 | 8.08 | 8.00 | 8.25 | 10 | 9.1 |
| 7 | 8.17 | 8.00 | 8.08 | 10 | 10.0 |
| 8 | 8.25 | 8.08 | 8.00 | 10 | 10.8 |
| 1 | 7.92 | 8.00 | 8.25 | 10 | 10.5 |
| 0 | 8.42 | 8.58 | 8.42 | 10 | 11.8 |

| | Color | Category Two Defects |
|---|---|---|
| 33 | green | 3 |
| 9 | greenish | 0 |
| 19 | greenish | 0 |
| 29 | green | 0 |
| 14 | green | 0 |
| 13 | yellow- green | 2 |
| 25 | green | 3 |
| 2 | yellowish | 2 |
| 10 | greenish | 1 |
| 20 | yellowish | 0 |
| 18 | brownish | 1 |
| 16 | green | 2 |
| 23 | brownish | 2 |
| 17 | yellow-green | 0 |
| 11 | brownish | 1 |
| 5 | green | 2 |
| 24 | bluish-green | 0 |
| 32 | green | 0 |
| 31 | green | 0 |
| 30 | bluish-green | 0 |

```
22   browish-green        5
4    yellow-green        2
26       green        2
3        green        0
28   blue-green        0
27       green        0
12       green        0
15       green        0
21       green        0
6        green        0
7    yellow green        1
8      greenish        0
1    blue-green        0
0        green        3
Color Counts:
green       16
greenish      4
brownish      3
blue-green      2
yellowish      2
yellow-green    2
bluish-green    2
yellow green    1
yellow- green    1
browish-green    1
Name: Color, dtype: int64
Broadcasted DataFrame:
            Country of Origin  Number of Bags Bag Weight  Aroma  Flavor  \
0                  Colombia        1    35 kg  8.58   8.50
1                    Taiwan        1    80 kg  8.50   8.50
2                      Laos       19    25 kg  8.33   8.42
3                Costa Rica        1    22 kg  8.08   8.17
4                  Colombia        2    24 kg  8.33   8.33
5                 Guatemala        5    30 kg  8.33   8.33
6                    Taiwan        1    27 kg  8.33   8.17
7                    Taiwan        1    90 kg  8.25   8.25
8                    Taiwan        1    30 kg  8.08   8.08
9   Tanzania, United Republic Of     320    60 kg  8.08   8.17
10                 Ethiopia       10    30 kg  8.08   8.25
11                Guatemala        5    15 kg  8.08   8.00
12                   Taiwan        1    60 kg  8.08   8.00
13                 Ethiopia       40    60 kg  7.67   8.17
14                 Colombia       70    35 kg  8.08   8.00
15                   Taiwan        1    60 kg  8.17   8.08
16                 Ethiopia        8     5 kg  8.17   8.08
17                   Taiwan        5     2 kg  8.00   8.17
18                   Taiwan        8     1 kg  8.08   8.17
19  Tanzania, United Republic Of     200    30 kg  8.17   8.00
20                Guatemala        8    30 kg  8.00   7.92
21                   Taiwan        1    20 kg  8.08   8.00
22                 Thailand        2     1 kg  7.67   8.00
23                 Colombia        6     5 kg  8.08   8.00
24                   Taiwan        4    50 kg  7.83   8.00
25                    Brazil       25    60 kg  7.83   8.08
26                   Taiwan        1   100 kg  7.92   7.92
27                   Taiwan        1    90 kg  8.17   8.08
28                   Taiwan        1    85 kg  8.00   8.00
29        United States (Hawaii)      80    15 kg  8.00   7.92
30                   Taiwan        3    48 kg  8.00   8.00
31                   Taiwan        3    50 kg  7.92   8.00
32                   Taiwan        4     5 kg  8.08   8.17
33                 Ethiopia      320    60 kg  7.67   7.83

    Aftertaste  Acidity  Balance  Sweetness  Moisture Percentage  \
0       8.42     8.58     8.42      10.0          11.8
1       7.92     8.00     8.25      10.0          10.5
2       8.08     8.17     8.17      10.0          10.4
3       8.17     8.25     8.08      10.0          11.8
4       8.08     8.25     7.92      10.0          11.6
5       8.25     7.83     8.17      10.0          10.7
6       8.08     8.00     8.25      10.0           9.1
7       8.17     8.00     8.08      10.0          10.0
8       8.25     8.08     8.00      10.0          10.8
9       8.08     8.17     8.00      10.0          11.0
```

| | | | | | |
|---|---|---|---|---|---|
| 10 | 8.00 | 8.08 | 7.92 | 10.0 | 11.8 |
| 11 | 8.00 | 7.75 | 8.17 | 10.0 | 11.5 |
| 12 | 8.08 | 8.08 | 8.00 | 10.0 | 11.9 |
| 13 | 8.00 | 8.33 | 8.00 | 10.0 | 11.6 |
| 14 | 8.08 | 7.92 | 8.00 | 10.0 | 10.6 |
| 15 | 8.00 | 7.92 | 7.92 | 10.0 | 10.2 |
| 16 | 7.92 | 8.17 | 7.92 | 10.0 | 11.3 |
| 17 | 8.00 | 7.92 | 7.92 | 10.0 | 10.3 |
| 18 | 7.75 | 7.92 | 8.00 | 10.0 | 11.0 |
| 19 | 7.92 | 7.92 | 7.75 | 10.0 | 10.0 |
| 20 | 8.08 | 7.92 | 8.00 | 10.0 | 11.6 |
| 21 | 7.92 | 7.92 | 7.83 | 10.0 | 10.4 |
| 22 | 7.83 | 8.00 | 8.00 | 10.0 | 9.8 |
| 23 | 7.83 | 8.17 | 7.83 | 10.0 | 11.3 |
| 24 | 7.92 | 8.00 | 7.92 | 10.0 | 10.6 |
| 25 | 7.83 | 7.92 | 7.83 | 10.0 | 11.3 |
| 26 | 8.00 | 7.92 | 7.92 | 10.0 | 9.1 |
| 27 | 7.92 | 8.00 | 7.83 | 10.0 | 10.6 |
| 28 | 8.00 | 7.92 | 7.92 | 10.0 | 10.2 |
| 29 | 8.00 | 7.83 | 8.00 | 10.0 | 9.3 |
| 30 | 7.83 | 7.83 | 7.92 | 10.0 | 11.4 |
| 31 | 7.83 | 7.92 | 7.83 | 10.0 | 10.8 |
| 32 | 7.67 | 7.83 | 7.92 | 10.0 | 11.3 |
| 33 | 7.83 | 8.00 | 8.00 | 10.0 | 9.9 |

| | Color | Category Two Defects |
|---|---|---|
| 0 | green | 3 |
| 1 | blue-green | 0 |
| 2 | yellowish | 2 |
| 3 | green | 0 |
| 4 | yellow-green | 2 |
| 5 | green | 2 |
| 6 | green | 0 |
| 7 | yellow green | 1 |
| 8 | greenish | 0 |
| 9 | greenish | 0 |
| 10 | greenish | 1 |
| 11 | brownish | 1 |
| 12 | green | 0 |
| 13 | yellow- green | 2 |
| 14 | green | 0 |
| 15 | green | 0 |
| 16 | green | 2 |
| 17 | yellow-green | 0 |
| 18 | brownish | 1 |
| 19 | greenish | 0 |
| 20 | yellowish | 0 |
| 21 | green | 0 |
| 22 | browish-green | 5 |
| 23 | brownish | 2 |
| 24 | bluish-green | 0 |
| 25 | green | 3 |
| 26 | green | 2 |
| 27 | green | 0 |
| 28 | blue-green | 0 |
| 29 | green | 0 |
| 30 | bluish-green | 0 |
| 31 | green | 0 |
| 32 | green | 0 |
| 33 | green | 3 |