PYTHHON PROGRAMMING

Lab-32 Answers

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1. Write a python program to read the radius from the below .csv file and then Calculate the Area of a Circle using SciPy Constants. After that display the first 5 records and also save the calculated result into a new .csv file. Input:

 https://raw.githubusercontent.com/AnudipAE/DANLC/master/radius\_data.csv

Code:

import pandas as pd #import pandas as pd.

from scipy.constants import pi

url = "https://raw.githubusercontent.com/AnudipAE/DANLC/master/radius\_data.csv"# Read the CSV file.

data = pd.read\_csv(url)

data['Area'] = pi \* data['Radius']\*\*2 # Calculate the area of a circle using the radius.

print("First 5 records:") # Display the first 5 records.

print(data.head())

data.to\_csv("area\_data.csv", index=False)# Save the calculated result into a new CSV file.

print("Data saved successfully.")

Output:

First 5 records:

CircleName Radius Area

0 SAY 3.798717 45.333960

1 PSN 9.958397 311.550720

2 JDP 5.142711 83.087197

3 AUO 3.319584 34.619210

4 OHG 1.138395 4.071325

Data saved successfully.

2.  Write a python program to read the celsius from the below .csv file and then Convert Celsius to Ferenhite using SciPy Constants. After that display the first 5 records and also save the calculated result into a new .csv file. Input: https://raw.githubusercontent.com/AnudipAE/DANLC/master/city\_temperatures.csv

Code:

import pandas as pd #importing pandas as pd.

from scipy.constants import convert\_temperature

url = "https://raw.githubusercontent.com/AnudipAE/DANLC/master/city\_temperatures.csv"# Read the CSV file.

data = pd.read\_csv(url)

print("Columns present in the CSV file:")# Check the columns present in the CSV file.

print(data.columns)

if 'Temperature (°C)' in data.columns:# Convert Celsius to Fahrenheit using SciPy's constants.

    data['Fahrenheit'] = convert\_temperature(data['Temperature (°C)'], 'C', 'F')

    print("\nFirst 5 records:")# Display the first 5 records.

    print(data.head())

    data.to\_csv("temperatures\_fahrenheit.csv", index=False) # Save the calculated result into a new CSV file.

    print("Data saved successfully.")

else:

    print("Error: 'Temperature (°C)' column not found in the CSV file.")

Output:

Columns present in the CSV file:

Index(['City', 'Temperature (°C)'], dtype='object')

First 5 records:

City Temperature (°C) Fahrenheit

0 Los Angeles 35.8 96.44

1 Chicago 8.1 46.58

2 San Francisco 0.2 32.36

3 Chicago 36.2 97.16

4 Boston 37.9 100.22

Data saved successfully.

3. Write a python program to read the Inches from the below .csv file and then Convert Inches to Centimeters using SciPy Constants. After that display the first 5 records and also save the calculated result into a new csv file. Input: https://raw.githubusercontent.com/AnudipAE/DANLC/master/people\_heights.csv

Code:

import pandas as pd #importing pandas as pd.

from scipy.constants import inch

url = "https://raw.githubusercontent.com/AnudipAE/DANLC/master/people\_heights.csv"# Read the CSV file.

data = pd.read\_csv(url)

print("Columns present in the CSV file:") # Check the columns present in the CSV file.

print(data.columns)

if 'Height (inches)' in data.columns:# Convert inches to centimeters using SciPy's constants.

    data['Centimeters'] = data['Height (inches)'] \* inch \* 100

    print("\nFirst 5 records:") # Display the first 5 records.

    print(data.head())

    data.to\_csv("heights\_centimeters.csv", index=False) # Save the calculated result into a new CSV file.

    print("Data saved successfully.")

else:

    print("Error: 'Height (inches)' column not found in the CSV file.")

Output:

Columns present in the CSV file:

Index(['Name', 'Height (inches)'], dtype='object')

First 5 records:

Name Height(inches) Centimeters

0 Person 1 60.03 152.4762

1 Person 2 49.51 125.7554

2 Person 3 82.97 210.7438

3 Person 4 64.19 163.0426

4 Person 5 54.42 138.2268

Data saved successfully.

4. Write a python program to read the GB from the below .csv file and then Convert GB to MB using SciPy Constants. After that display the first 5 records and also save the calculated result into a new csv file.

Input: <https://raw.githubusercontent.com/AnudipAE/DANLC/master/file_size.csv>

Code:

import pandas as pd #importing pandas as pd.

from scipy.constants import mega

url = "https://raw.githubusercontent.com/AnudipAE/DANLC/master/file\_size.csv"# Read the CSV file.

data = pd.read\_csv(url)

print("Columns present in the CSV file:") # Check the columns present in the CSV file.

print(data.columns)

if 'Size (GB)' in data.columns:# Convert GB to MB using SciPy's constants.

    data['Size (MB)'] = data['Size (GB)'] \* mega

    print("\nFirst 5 records:")   # Display the first 5 records.

    print(data.head())

    data.to\_csv("file\_size\_MB.csv", index=False) # Save the calculated result into a new CSV file

    print("Data saved successfully.")

else:

    print("Error: 'Size (GB)' column not found in the CSV file.")

Output:

Columns present in the CSV file:

Index(['Filename', 'Size (GB)'], dtype='object')

First 5 records:

Filename Size(GB) Size (MB)

0 file\_1.txt 9.72 9720000.0

1 file\_2.txt 9.81 9810000.0

2 file\_3.txt 5.61 5610000.0

3 file\_4.txt 4.58 4580000.0

4 file\_5.txt 5.52 5520000.0

Data saved successfully.