PYTHON LAB – 32

SCIPY CLUSTER

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QUESTIONS

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

2. Write a python program to read the Celsius from the below .csv file and then Convert Celsius to Fahrenheit 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

3. Write a python program to read the Inches from the below .csv file and then Convert Inches to Centimetres 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

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

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.

Code :

```python
# import necessary packages
import pandas as pd
from scipy.constants import pi

# Read csv file
df =
pd.read_csv('https://raw.githubusercontent.com/AnudipAE/D
ANLC/master/radius_data.csv')

# Calculate area of circle
df['Area'] = pi * (df['Radius']**2)

# Displaying top 5 rows
print(df.head())

# Saving results to new.csv file
df.to_csv('Area_of_circle.csv', index=False)
```

Output :

	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

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

Code :

```python
# import necessary packages
import pandas as pd
from scipy.constants import convert_temperature

# Read csv file
df = pd.read_csv('https://raw.githubusercontent.com/AnudipAE/DANLC/master/city_temperatures.csv')

# Converting celsius to fahrenheit
df['Temperature (°F)'] = convert_temperature(df['Temperature (°C)'], 'Celsius', 'Fahrenheit')

# Displaying top 5 rows
print(df.head())

# Saving results to new.csv file
df.to_csv('Temperature in fahrenheit.csv', index=False)
```

Output :

```
            City  Temperature (°C)  Temperature (°F)
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
```

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

Code :

```python
# import necessary packages
import pandas as pd
from scipy.constants import inch

# Read csv file
df = pd.read_csv(
'https://raw.githubusercontent.com/AnudipAE/DANLC/master/people_heights.csv')

# Converting inches to centimeter
df['Height (cm)'] = df['Height (inches)'] * inch * 100

# Displaying top 5 rows
print(df.head())

# Saving results to new.csv file
df.to_csv('Height.csv', index=False)
```

Output :

```
        Name   Height (inches)   Height (cm)
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
```

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.

Code :

```python
# import necessary packages
import pandas as pd
from scipy.constants import giga,mega

# Read csv file
df =
pd.read_csv('https://raw.githubusercontent.com/AnudipAE/DANLC/master/file_size.csv')

# Converting gb to mb
df['Size (MB)'] = df['Size (GB)'] * giga /mega

# Displaying top 5 rows
print(df.head())

# Saving results to new.csv file
df.to_csv('file_convert.csv', index=False)
```

Output :

```
     Filename  Size (GB)  Size (MB)
0  file_1.txt       9.72     9720.0
1  file_2.txt       9.81     9810.0
2  file_3.txt       5.61     5610.0
3  file_4.txt       4.58     4580.0
4  file_5.txt       5.52     5520.0
```