PYTHHON PROGRAMMING

Lab-25 Answers

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 Suppose you are a teacher, and you want to analyze the exam scores of your

1. Suppose you are a teacher, and you want to analyze the exam scores of your

students in a particular subject. You have recorded the scores of your students for a

recent exam, and you want to represent this data using a Pandas Series.

Input:

students = ['Alice', 'Bob', 'Charlie', 'David', 'Eve', 'Frank', 'Grace', 'Hannah', 'Ivy', 'Jack']

exam\_scores = [92, 88, 76, 94, 82, 90, 85, 89, 78, 91]

Code:

import pandas as pd #importing pandas as pd.

# Data

students = ['Alice', 'Bob', 'Charlie', 'David', 'Eve', 'Frank', 'Grace', 'Hannah', 'Ivy', 'Jack'] #inputing the student data.

exam\_scores = [92, 88, 76, 94, 82, 90, 85, 89, 78, 91] # inputing the exam\_score.

# Create Pandas Series

exam\_scores\_series = pd.Series(exam\_scores, index=students, name='Exam Scores')

# Display the Series

print(exam\_scores\_series)

Output:

Alice 92

Bob 88

Charlie 76

David 94

Eve 82

Frank 90

Grace 85

Hannah 89

Ivy 78

Jack 91

Name: Exam Scores, dtype: int64

addCode

addText

2.Suppose you want to track and analyze your household expenses for a month.

You have recorded the expenses for various categories, such as groceries, utilities, rent,

transportation, and entertainment. You can represent this expense data using a Pandas

Series.

Input:

# Expense categories

categories = ['Groceries', 'Utilities', 'Rent', 'Transportation', 'Entertainment']

# Monthly expense data (example data in USD)

expenses = [500, 200, 1200, 300, 150]

Code:

import pandas as pd #importing pandas as pd.

# Expense categories

categories = ['Groceries', 'Utilities', 'Rent', 'Transportation', 'Entertainment'] #inputing the categories.

# Monthly expense data (example data in USD)

expenses = [500, 200, 1200, 300, 150]

# Create Pandas Series

monthly\_expenses\_series = pd.Series(expenses, index=categories, name='Monthly Expenses')

# Display the Series

print(monthly\_expenses\_series)

Output:

Groceries 500

Utilities 200

Rent 1200

Transportation 300

Entertainment 150

Name: Monthly Expenses, dtype: int64

3.Suppose you want to track and analyze the monthly energy consumption in your

home. You have recorded the monthly energy usage for electricity and gas over a year,

and you want to represent this data using Pandas Series.

Input:

# Months in a year

months = ['January', 'February', 'March', 'April', 'May', 'June', 'July', 'August',

'September', 'October', 'November', 'December']

# Monthly energy consumption data (example data in kilowatt-hours for electricity and

therms for gas)

electricity\_usage = [350, 320, 310, 330, 340, 370, 380, 360, 350, 330, 320, 330]

gas\_usage = [20, 18, 16, 15, 12, 10, 8, 9, 12, 15, 17, 19]

Code:

import pandas as pd #importing panddas as pd.

# Months in a year

months = ['January', 'February', 'March', 'April', 'May', 'June', 'July', 'August',

          'September', 'October', 'November', 'December'] #inputing the months.

# Monthly energy consumption data (example data in kilowatt-hours for electricity and therms for gas)

electricity\_usage = [350, 320, 310, 330, 340, 370, 380, 360, 350, 330, 320, 330]

gas\_usage = [20, 18, 16, 15, 12, 10, 8, 9, 12, 15, 17, 19]

# Create Pandas Series for electricity usage

electricity\_series = pd.Series(electricity\_usage, index=months, name='Electricity Usage (kWh)')

# Create Pandas Series for gas usage

gas\_series = pd.Series(gas\_usage, index=months, name='Gas Usage (therms)')

# Display the Series

print("Electricity Usage:\n", electricity\_series)

print("\nGas Usage:\n", gas\_series)

Output:

Electricity Usage:

January 350

February 320

March 310

April 330

May 340

June 370

July 380

August 360

September 350

October 330

November 320

December 330

Name: Electricity Usage (kWh), dtype: int64

Gas Usage:

January 20

February 18

March 16

April 15

May 12

June 10

July 8

August 9

September 12

October 15

November 17

December 19

Name: Gas Usage (therms), dtype: int64

4.Suppose you are managing a website and want to analyze the monthly revenue

generated from advertising. You have recorded the monthly revenue for the past year,

and you want to represent this data using a Pandas Series.

Input:

# Months in a year

months = ['January', 'February', 'March', 'April', 'May', 'June', 'July', 'August',

'September', 'October', 'November', 'December']

# Monthly advertising revenue data (example data in USD)

revenue = [5000, 5200, 4800, 5400, 5600, 5800, 6100, 5900, 6200, 6500, 7000, 6900]

Code:

import pandas as pd #importing pandas as pd.

# Expense categories

categories = ['Groceries', 'Utilities', 'Rent', 'Transportation', 'Entertainment']

# Monthly expense data (example data in USD)

expenses = [500, 200, 1200, 300, 150]

# Create Pandas Series

monthly\_expenses\_series = pd.Series(expenses, index=categories, name='Monthly Expenses')

# Display the Series

print(monthly\_expenses\_series)

Output:

Groceries 500

Utilities 200

Rent 1200

Transportation 300

Entertainment 150

Name: Monthly Expenses, dtype: int64