PYTHHON PROGRAMMING

Lab-25 Answers

HAREESHA H M

AF0364330

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
```
