PYTHON LAB – 25

PANDAS SERIES

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QUESTIONS

1. Suppose you are a teacher, and you want to analyze the exam scores of yourstudents 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]
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: categories = ['Groceries', 'Utilities', 'Rent', 'Transportation', 'Entertainment']
   expenses = [500, 200, 1200, 300, 150]
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 = ['January', 'February', 'March', 'April', 'May', 'June', 'July', 'August','September', 'October', 'November', 'December']
   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]
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 = ['January', 'February', 'March', 'April', 'May', 'June', 'July', 'August', 'September', 'October', 'November', 'December']
   revenue = [5000, 5200, 4800, 5400, 5600, 5800, 6100, 5900, 6200, 6500, 7000, 6900]

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 necessary packages
import pandas as pd

# Input data
students = ['Alice', 'Bob', 'Charlie', 'David', 'Eve',
'Frank', 'Grace', 'Hannah', 'Ivy', 'Jack']
exam_scores = [92, 88, 76, 94, 82, 90, 85, 89, 78, 91]

# Converting data into pandas series
exam_scores_series =
pd.Series(exam_scores,index=students)

# Printing results
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
dtype: int64
```

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 necessary packages
import pandas as pd

# Input data
categories = ['Groceries', 'Utilities', 'Rent',
'Transportation', 'Entertainment']
expenses = [500, 200, 1200, 300, 150]

# Converting data into pandas series
household_expenses = pd.Series(expenses,index=categories)

# Printing results
print(household_expenses)
```

Output:

```
Groceries       500
Utilities       200
Rent            1200
Transportation  300
Entertainment   150
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 necessary packages
import pandas as pd

# Input data
months = ['January', 'February', 'March', 'April', 'May',
'June', 'July', 'August',
          'September', 'October', 'November', 'December']
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]

# Converting data into pandas series and printing them
print("Electricity Consumption")
monthly_electricity_consumption =
pd.Series(electricity_usage,index=months)
print(monthly_electricity_consumption)
print("\nGas Consumption")
monthly_gas_consumption =
pd.Series(gas_usage,index=months)
print(monthly_gas_consumption)
```

Output:

```
Electricity Consumption
January    350
February   320
March      310
April      330
May        340
June       370
July       380
August     360
September  350
October    330
November   320
December   330
dtype: int64

Gas Consumption
January    20
February   18
March      16
April      15
May        12
June       10
July       8
August     9
September  12
October    15
November   17
December   19
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 necessary packages
import pandas as pd

# Input data
months = ['January', 'February', 'March', 'April', 'May',
'June', 'July', 'August',
'September', 'October', 'November', 'December']
revenue = [5000, 5200, 4800, 5400, 5600, 5800, 6100,
5900, 6200, 6500, 7000, 6900]

# Converting data into pandas series
monthly_revenue = pd.Series(revenue,index=months)

# Printing results
print(monthly_revenue)
```

Output:

```
January      5000
February     5200
March        4800
April        5400
May          5600
June         5800
July         6100
August       5900
September    6200
October      6500
November     7000
December     6900
dtype: int64
```