Assignment 8 : Matplotlib
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'''

1. A bar chart is drawn(using pyplot) to represent sales data of various models of cars, for a month. Write appropriate statements in Python to provide labels Month - June and Sale done to x and y axis respectively

'''

import matplotlib.pyplot as plt

# Sample data for car sales in June
car_models = ['Model A', 'Model B', 'Model C', 'Model D']
sales_data = [150, 200, 180, 220] # Sample sales figures for each model

Plotting the bar chart plt.bar(car_models,
sales_data)

Adding labels to the axes
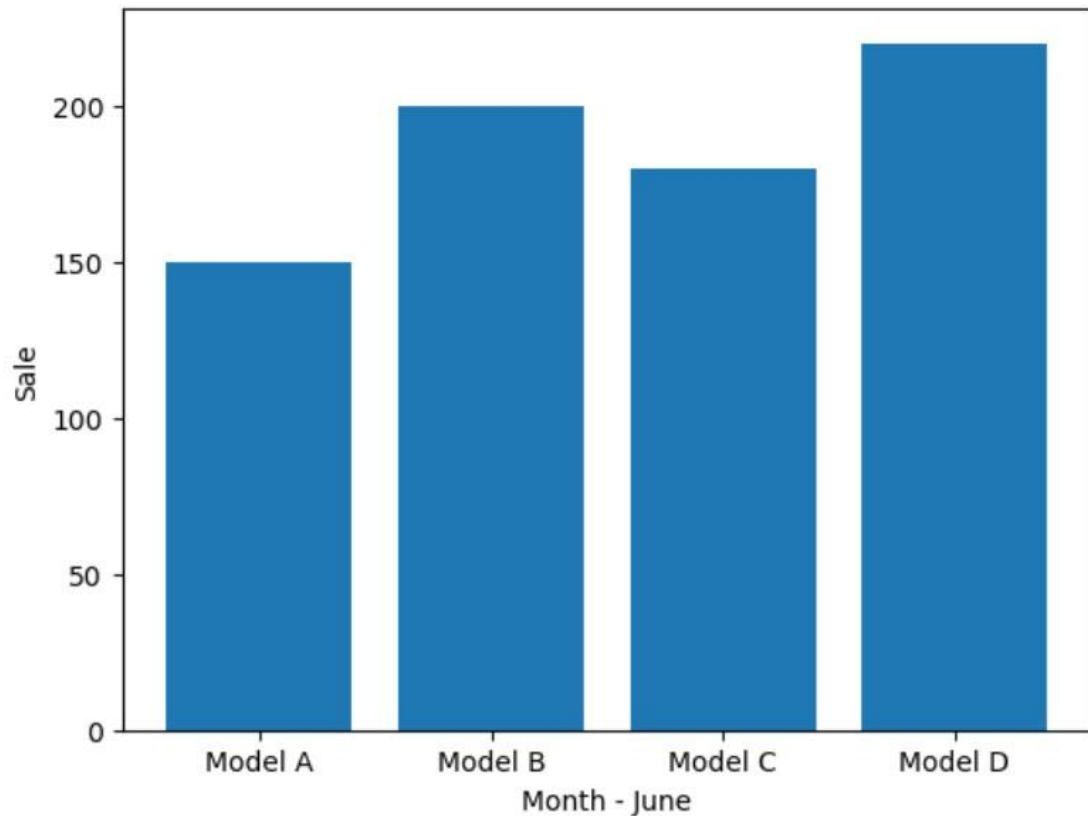plt.xlabel('Month - June') # Label for x-axis plt.ylabel('Sale')
Label for y-axis

Display the plot plt.show()
#OutPut

'''

'''

'''

2.   Write a method/function DISPLAYWORDS() in python to read lines from a text file STORY.TXT, and display those words, which are less than 4 characters

'''

```python
def display_words():
try:
     # Open the file for reading
with open("STORY.TXT", 'r') as file:
# Read lines from the file            lines =
file.readlines()          # Iterate through
each line          for line in lines:
         # Split the line into words
words = line.split()
         # Iterate through each word
for word in words:
```

```python
            # Check if the word has less than 4 characters
            if len(word) < 4:                # Display the word
                print(word)    except FileNotFoundError:        print("File
not found.")    except Exception as e:
        print("An error occurred:", e)


# Call the function to display words less than 4 characters display_words()


#OutPut
'''
How
are you
'''
'''
```

3. Create the following DataFrame Sales containing year-wise sales figures for five salespersons in INR. Use the years as column labels, and salesperson names as row labels.

```
'''

import pandas as pd

# Create the DataFrame Sales sales_data
= {
    'Madhu': [100.5, 12000, 20000, 50000],
    'Kusum': [150.8, 18000, 50000, 60000],
    'Kinshuk': [200.9, 22000, 70000, 70000],
    'Ankit': [30000, 30000, 10000, 80000],
    'Shruti': [40000, 45000, 125000, 90000]
}
years = [2014, 2015, 2016, 2017]

sales = pd.DataFrame(sales_data, index=years)

# a) Display the row labels of Sales
print("Row labels of Sales:") print(sales.index)

# b) Display the column labels of Sales
print("\nColumn labels of Sales:") print(sales.columns)

# c) Display the data types of each column of Sales print("\nData
types of each column of Sales:") print(sales.dtypes)

# d) Display the last two rows of Sales
print("\nLast  two  rows  of  Sales:")
print(sales.tail(2))

# e) Display the dimensions, shape, size and values of Sales
print("\nDimensions of Sales:") print(sales.ndim)
print("\nShape of Sales:") print(sales.shape) print("\nSize of
```

Sales:") print(sales.size) print("\nValues of Sales:")

print(sales.values)

f) Display the last two rows of Sales (again, as it was missed previously)

print("\nLast two rows of Sales:") print(sales.iloc[-2:])

g) Display the first two columns of Sales

print("\nFirst two columns of Sales:") print(sales.iloc[:,

:2])

h) Create a dictionary using the provided data and use it to create DataFrame Sales2

```python
sales_data2 = {
    'Year': [2019, 2020, 2021, 2022],
    'John': [50000, 60000, 70000, 80000],
    'Alice': [45000, 55000, 65000, 75000],
    'Bob': [40000, 50000, 60000, 70000],
    'Emily': [35000, 45000, 55000, 65000],
    'David': [30000, 40000, 50000, 60000]
}
```

sales2 = pd.DataFrame(sales_data2)

print("\nDataFrame   Sales2:")

print(sales2)

#OutPut

'''

Row labels of Sales:

Index([2014, 2015, 2016, 2017], dtype='int64')

Column labels of Sales:

Index(['Madhu', 'Kusum', 'Kinshuk', 'Ankit', 'Shruti'], dtype='object')

Data types of each column of Sales:

Madhu   float64

Kusum   float64

Kinshuk   float64

Ankit   int64 Shruti

int64 dtype: object

Last two rows of Sales:

	Madhu	Kusum	Kinshuk	Ankit	Shruti
2016	20000.0	50000.0	70000.0	10000	125000
2017	50000.0	60000.0	70000.0	80000	90000

Dimensions of Sales:

2

Shape of Sales:

(4, 5)

Size of Sales:

20

Values of Sales:

[[1.005e+02 1.508e+02 2.009e+02 3.000e+04 4.000e+04]
 [1.200e+04 1.800e+04 2.200e+04 3.000e+04 4.500e+04]
 [2.000e+04 5.000e+04 7.000e+04 1.000e+04 1.250e+05]
 [5.000e+04 6.000e+04 7.000e+04 8.000e+04 9.000e+04]]

Last two rows of Sales:

	Madhu	Kusum	Kinshuk	Ankit	Shruti
2016	20000.0	50000.0	70000.0	10000	125000
2017	50000.0	60000.0	70000.0	80000	90000

First two columns of Sales:

```
      Madhu    Kusum
2014   100.5    150.8
2015   12000.0  18000.0
2016   20000.0  50000.0 2017  50000.0  60000.0
```

DataFrame Sales2:

```
  Year  John  Alice   Bob  Emily  David
0 2019  50000  45000  40000  35000  30000
1 2020  60000  55000  50000  45000  40000
2 2021  70000  65000  60000  55000  50000 3  2022  80000  75000  70000  65000  60000
'''

'''


'''
```