```
In [1]: ''' Write a pandas python code to create a dataset having student and marks of the student anx display it as an table using data
        import pandas as pd
        data={'name':['ram','sam','alex'],'marks':[90,95,94]}
        df=pd.DataFrame(data)
        print(df)
```

```
    name  marks
0    ram     90
1    sam     95
2   alex     94
```

```
In [7]: #Write a pandas python code to create a dataset having car name and passing score display it as an table using dataframe'''
        import pandas
        x={'cars':['bmw','volvo','ford'],'passing':[3,7,9]}
        print(pandas.DataFrame(x))
```

```
     cars  passing
0     bmw        3
1   volvo        7
2    ford        9
```

```
In [15]: #w code to display a plotgraph to analyse the trend of data science job posting over the last decade
         import pandas as pd
         import matplotlib.pyplot as plt

         data = {'Year': list(range(2010, 2021)), 'Job Posting': [150, 300, 450, 600, 800, 1200, 1600, 2100, 3400, 4200,6000]}
         df = pd.DataFrame(data)

         plt.plot(df['Year'], df['Job Posting'], marker='o')
         plt.title("TREND OF DATA SCIENCE JOB POSTINGS")
         plt.xlabel('Year')
         plt.ylabel('Number of Job Postings')
         plt.show()
```


TREND OF DATA SCIENCE JOB POSTINGS
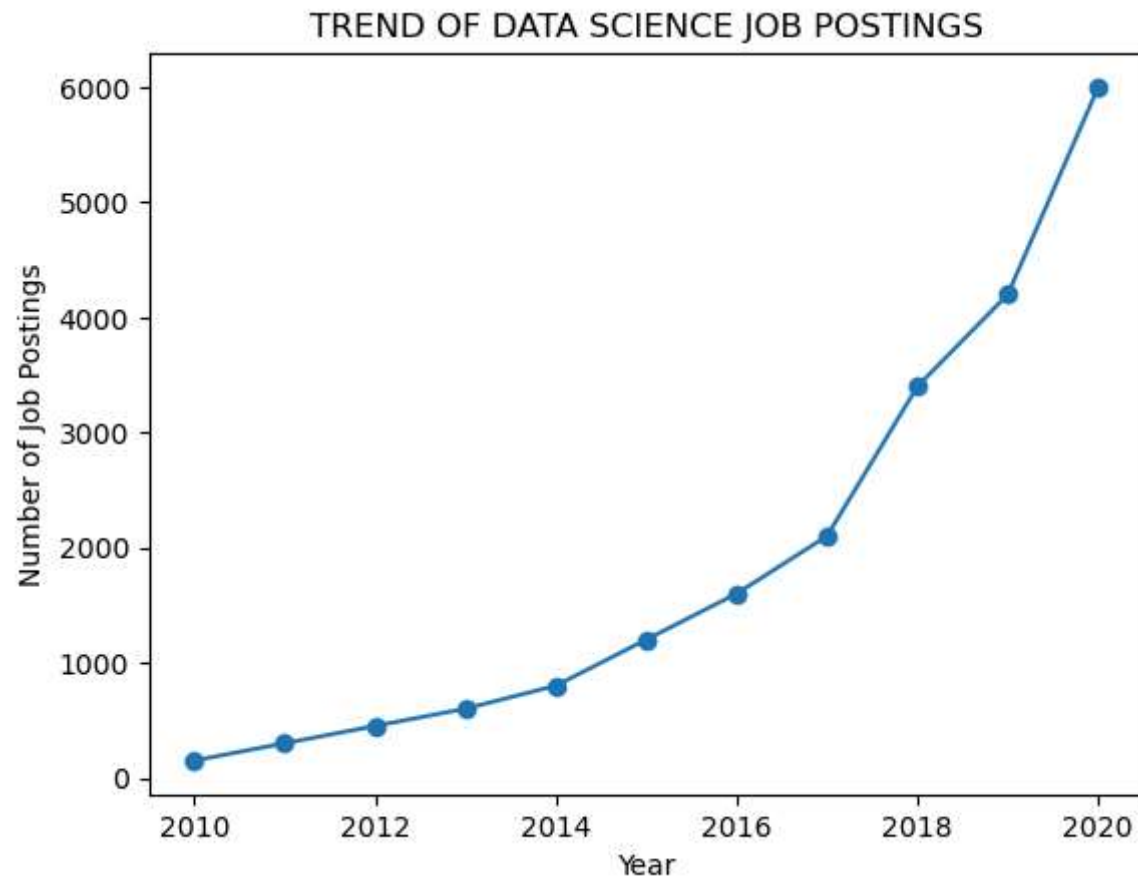
```
#code to display analyse andvisuyalise the distribution of various data science roles
roles=['DATA ANALYST','DATA ENGINEER','DATA SCIENTIST','ML ENGINEER','BUISNESS ANALYST']
counts= [300,500,450,200,150]
plt.bar(roles,counts)
plt.title('DISTRIBUTION OF DATA SCIENCE ROLES')
plt.xlabel('ROLE')
plt.ylabel('COUNT')
plt.show()
```
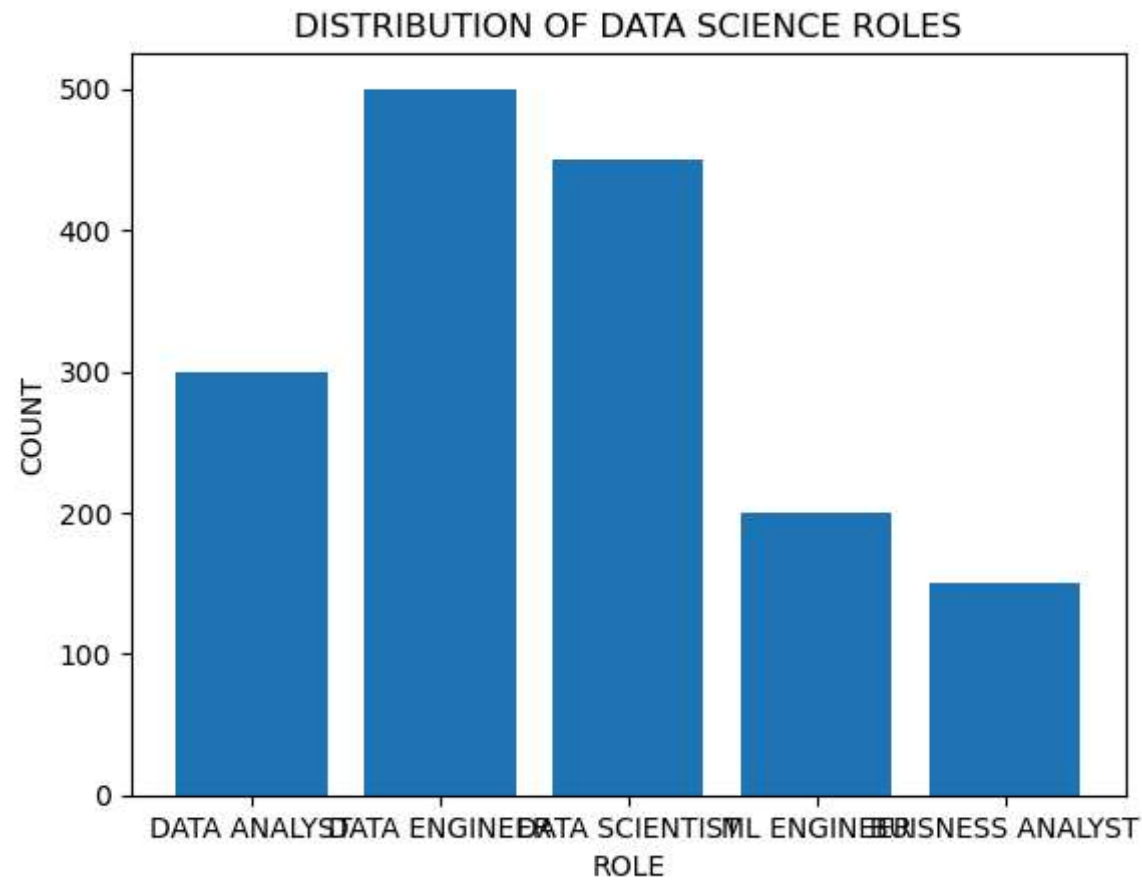
```
In [20]: # code to read ad comma separated files
         import pandas as pd
         print(pd.read_csv('32stu.csv'))
```

```
    Names  roll no  maths  chemis  physics  Unnamed: 3  \
0     sam        1                        96          85
1   arjun        2                        85          75
2  charan        3                        75          65
3   kumar        4                        82          75
4  sanjay        5                        75          65
5    mano        6                        85          65
6    hari        7                        78          89
7 prasath        8                        56          78
8  sharma        9                        78          55

   Unnamed: 4  css
0          90  100
1          91   85
2          78   95
3          86   90
4          72   80
5          95   77
6          78  100
7          48   49
8          44   66
```

```
In [1]: import pandas as pd
        print(pd.read_csv('sales_data - sales_data.csv'))
```

```
          Date      Product  Sales  Quantity Region
0   01-01-2023  Product A    200         4  North
1   02-01-2023  Product B    150         3  South
2   03-01-2023  Product A    220         5  North
3   04-01-2023  Product C    300         6   East
4   05-01-2023  Product B    180         4   West
5   06-01-2023  Product A    210         5  North
6   07-01-2023  Product C    320         7   East
7   08-01-2023  Product B    160         3  South
8   09-01-2023  Product A    230         6  North
9   10-01-2023  Product C    310         7   East
10  11-01-2023  Product B    190         4   West
11  12-01-2023  Product A    240         6  North
12  13-01-2023  Product C    330         8   East
13  14-01-2023  Product B    170         3  South
14  15-01-2023  Product A    250         7  North
15  16-01-2023  Product C    340         8   East
```

```
In [2]: # code to create an an array using user defined values
        import numpy as np
        a=np.array([[1,2,4],[5,8,7]])
        print("Array created using passed list:\n",a)
```

```
Array created using passed list:
 [[1 2 4]
 [5 8 7]]
```

```python
In [3]: #code for structed data
        import pandas as pd
        structured_data = pd.DataFrame({
            'ID':[1,2,3],
            'Name':['tom','murray','Thomas'],
            'Age':[23,25,26]
        })
        print("Structured data:\n",structured_data)
```

```
Structured data:
    ID    Name  Age
0   1     tom   23
1   2  murray   25
2   3  Thomas   26
```

```python
In [4]: #code for semi-structred data
        import pandas as pd
        semi_structured_data={'ID':1,'Name':'JD','Attributes':{'Height':174,'Weight':74}}
        print("\nSemi structured data:\n",semi_structured_data)
```

```
Semi structured data:
 {'ID': 1, 'Name': 'JD', 'Attributes': {'Height': 174, 'Weight': 74}}
```

```python
In [5]: #code for unstructerd data
        import pandas as pd
        unstructured_data="This is an example of unstructured data.It can be a piece of text, an image, or a video file."
        print("\nUnstructured data:\n",unstructured_data)
```

```
Unstructured data:
 This is an example of unstructured data.It can be a piece of text, an image, or a video file.
```

In [4]:
```python
#code to display and analyse the data set and display as a piechart
import numpy as py
import matplotlib.pyplot as plt
import pandas as pd
counts=[200,150,450]
roles=['data analyst','data engineer','data scientist']
plt.pie(counts,labels=roles)
plt.title('distribution of various data scinece roles')
plt.show()
```

distribution of various data scinece roles
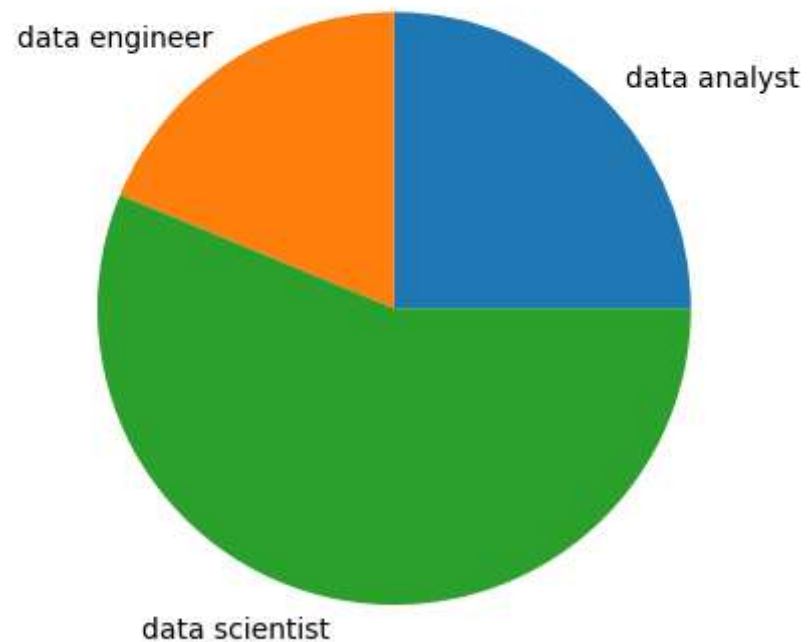
```python
# ENCRYPT AND DECRYPT
from cryptography.fernet import Fernet
key=Fernet.generate_key()
f=Fernet(key)
token=f.encrypt(b"Rajalakshmi Engineering College")
token
b'...'
f.decrypt(token)
b'Rajalakshmi Engineering College'
key=Fernet.generate_key()
cipher_suite=Fernet(key)
plain_text=b"Rajalakshmi Engineeing College."
cipher_text=cipher_suite.encrypt(plain_text)
decrypted_text=cipher_suite.decrypt(cipher_text)
print("Original dat:",plain_text)
print("Encrypted Data:",cipher_text)
print("Decrypted Data:",decrypted_text)
```

```
Original dat: b'Rajalakshmi Engineeing College.'
Encrypted Data: b'gAAAAABmwsC3sMHYZTy7XK2zDDgbK8tKKNJP56zGPrupGuzyFMs0NhrbBkTKhX4Y1dfpWIhAGCTEI3W1TxQjXIwhQLzanD_oKqlpJ1zVoC84U
KPp9v1WcIc='
Decrypted Data: b'Rajalakshmi Engineeing College.'
```

In [ ]: