

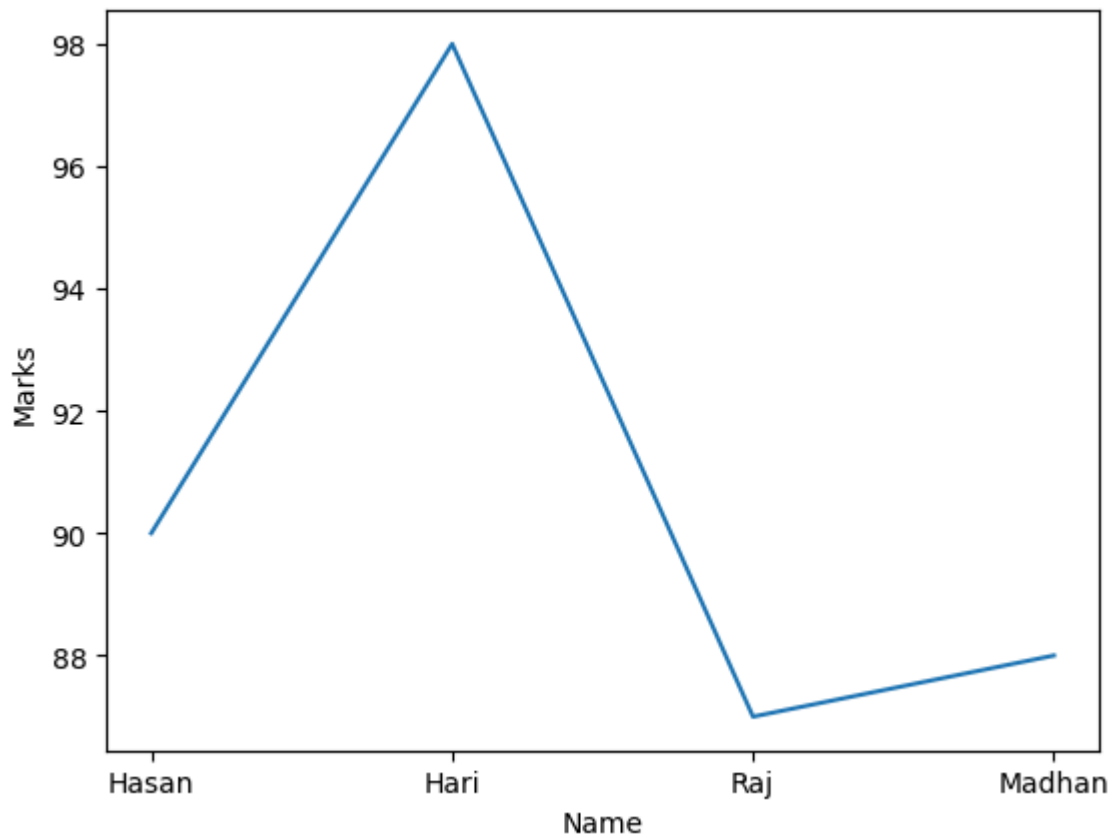
```
In [1]: import pandas as pd
structured_data=pd.DataFrame({
    'Id':[12,13,14],
    'Name':['Raj',"John","Kumar"]
})
print(structured_data)
```

	Id	Name
0	12	Raj
1	13	John
2	14	Kumar

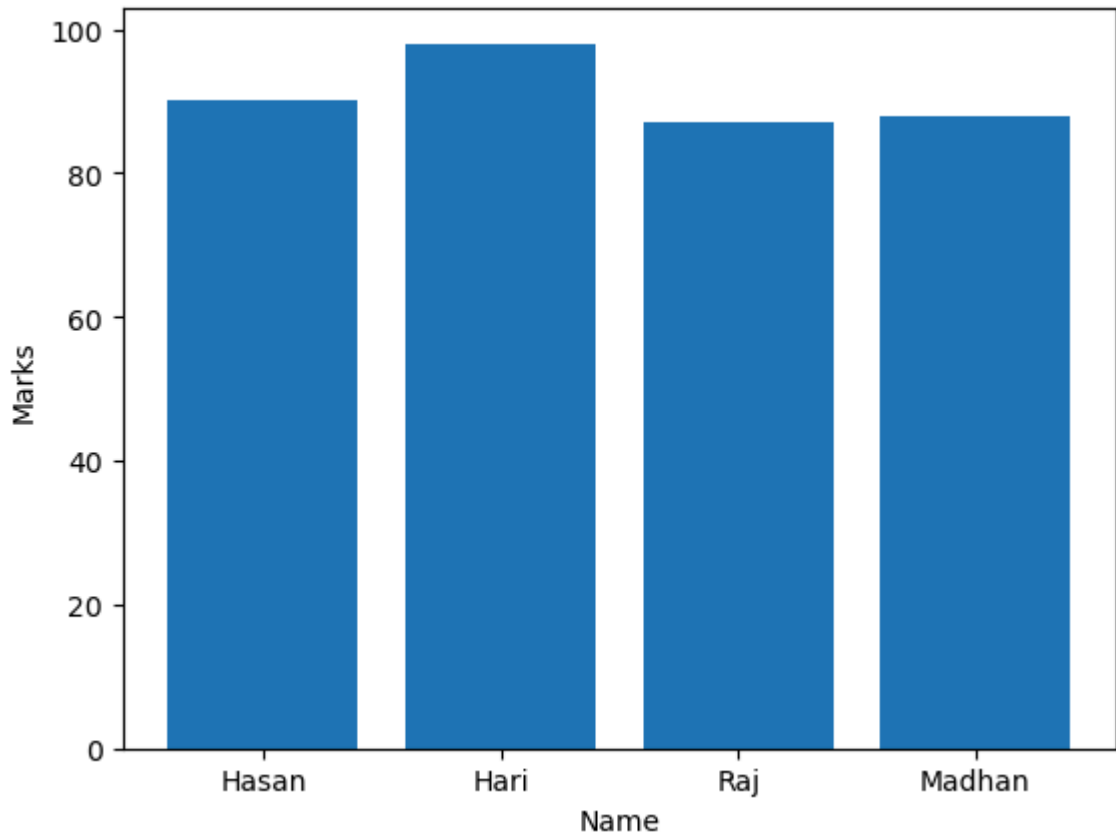
```
In [5]: import pandas as pd
structured_data=pd.DataFrame({
    'Roll.no':[352,353,354,355,356],
    'Name':['Johny',"Tom","Shiva","Suriya","Mithun"],
    'Dept.':["Mech","CSE","Civil","Chem","EEE"]
})
print(structured_data)
```

	Roll.no	Name	Dept.
0	352	Johny	Mech
1	353	Tom	CSE
2	354	Shiva	Civil
3	355	Suriya	Chem
4	356	Mithun	EEE

```
In [8]: import pandas as pd
import matplotlib.pyplot as plt
data={"Name":["Hasan","Hari","Raj","Madhan"],
      "Mark":[90,98,87,88]}
df=pd.DataFrame(data)
plt.plot(df["Name"],df["Mark"])
plt.xlabel("Name")
plt.ylabel("Marks")
plt.show()
```



```
In [9]: import pandas as pd
import matplotlib.pyplot as plt
data={"Name":["Hasan","Hari","Raj","Madhan"],
      "Mark":[90,98,87,88]}
df=pd.DataFrame(data)
plt.bar(df["Name"],df["Mark"])
plt.xlabel("Name")
plt.ylabel("Marks")
plt.show()
```



```
In [13]: print("My Name is Hasan,this is unstructured data")
```

My Name is Hasan,this is unstructured data

```
In [2]: print("Unstructured:97 is my mark")
```

Unstructured:97 is my mark

```
In [6]: import json
f=open("t.txt",'w')
a={"Roll.no":[352,353,354,355,356],
  "Name":["Johny","Tom","Shiva","Suriya","Mithun"],
  "Dept.":["Mech","CSE","Civil","Chem","EEE"]}
json.dump(a,f)
f.close()
f=open("t.txt",'r')
f.read()
```

```
Out[6]: '{"Roll.no": [352, 353, 354, 355, 356], "Name": ["Johny", "Tom", "Shiva",
"Suriya", "Mithun"], "Dept.": ["Mech", "CSE", "Civil", "Chem", "EEE"]}'
```

```
In [11]: from cryptography.fernet import Fernet
key=Fernet.generate_key()
f=Fernet(key)
token=f.encrypt(b"I am Mohamed Hasan")
token
b'...'
f.decrypt(token)
b'I am Mohamed Hasan'
key=Fernet.generate_key()
plain_text=b"I am Mohamed Hasan"
cipher_suite=Fernet(key)
cipher_text=cipher_suite.encrypt(plain_text)
decrypted_text=cipher_suite.decrypt(cipher_text)
print("Original Data",plain_text)
print("Encrypted Data",cipher_text)
print("Decrypted Data",decrypted_text)
```

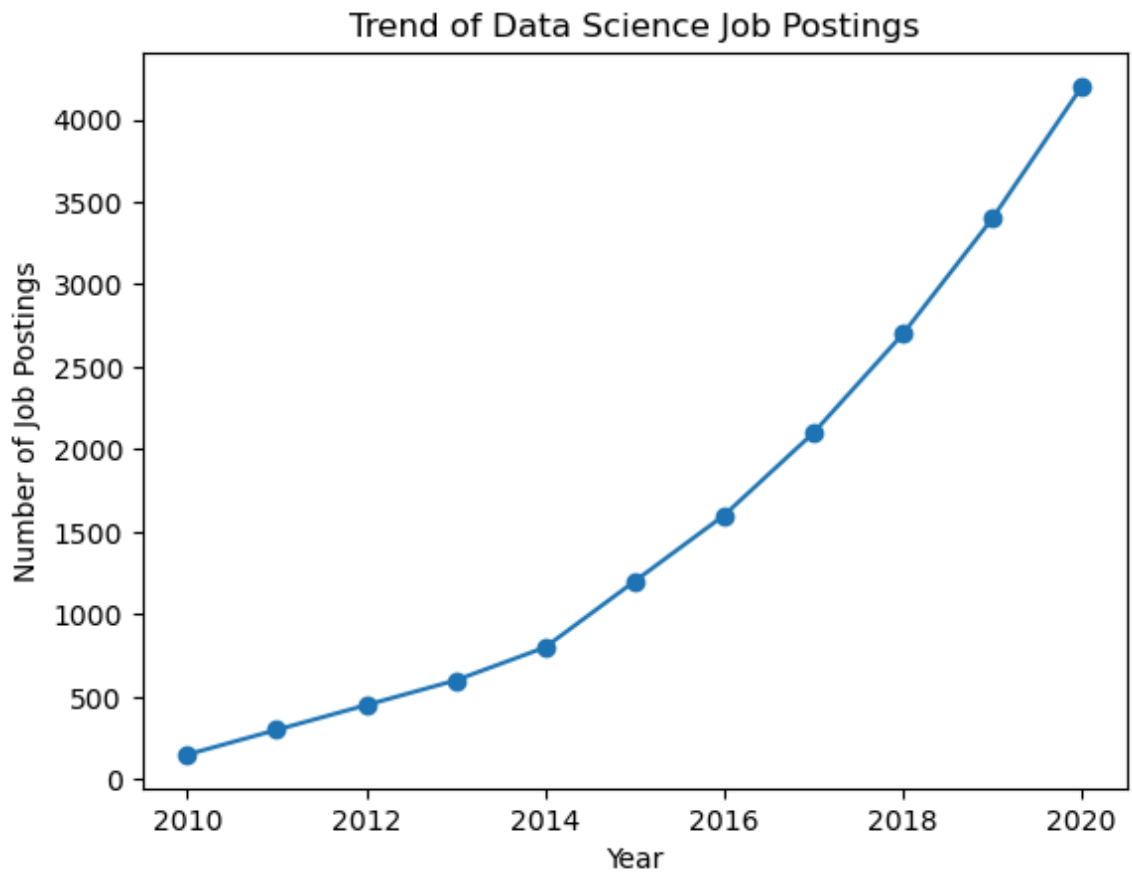
Original Data b'I am Mohamed Hasan'

Encrypted Data b'gAAAAABmtEW-N3mTSA2RDH0FJXv7RE74EexT43Vvh0CHU5_GMwt1wn2KM
PdANRV-rB_ZFyxIQccQdMiuq07iTwQVg-gEOxhwircpSacbstvZ3rIIpdFA46k='

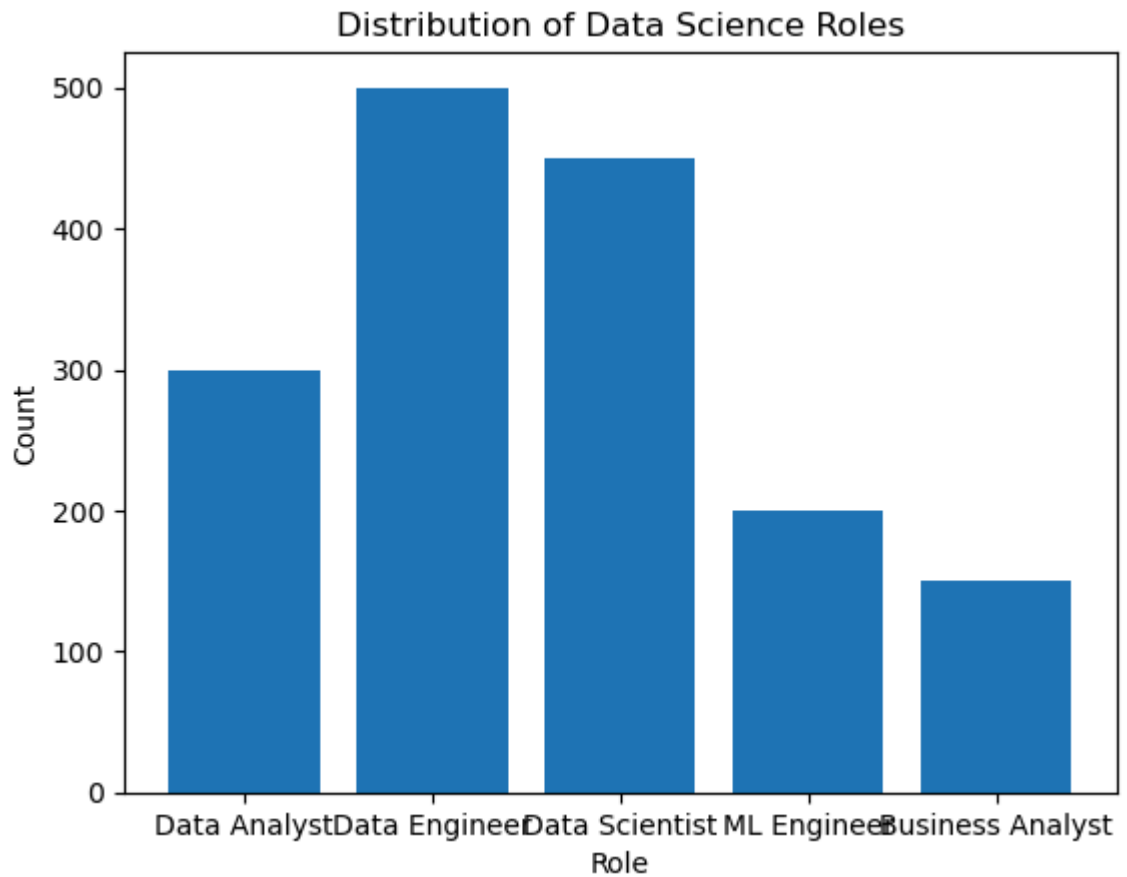
Decrypted Data b'I am Mohamed Hasan'

```
In [1]: import pandas as pd
import matplotlib.pyplot as plt
data = {'Year': list(range(2010, 2021)),
        'Job Postings': [150, 300, 450, 600, 800, 1200, 1600, 2100, 2700, 3400]}

df = pd.DataFrame(data)
plt.plot(df['Year'], df['Job Postings'], marker='o')
plt.title('Trend of Data Science Job Postings')
plt.xlabel('Year')
plt.ylabel('Number of Job Postings')
plt.show()
```



```
In [2]: roles = ['Data Analyst', 'Data Engineer', 'Data Scientist', 'ML Engineer', 'Business 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 []: