In [3]:
```python
import pandas as pd
structured_data=pd.DataFrame({
    'Id':[12,13,14],
    'Name':["raj","john","kumar"]
})
print(structured_data)
```
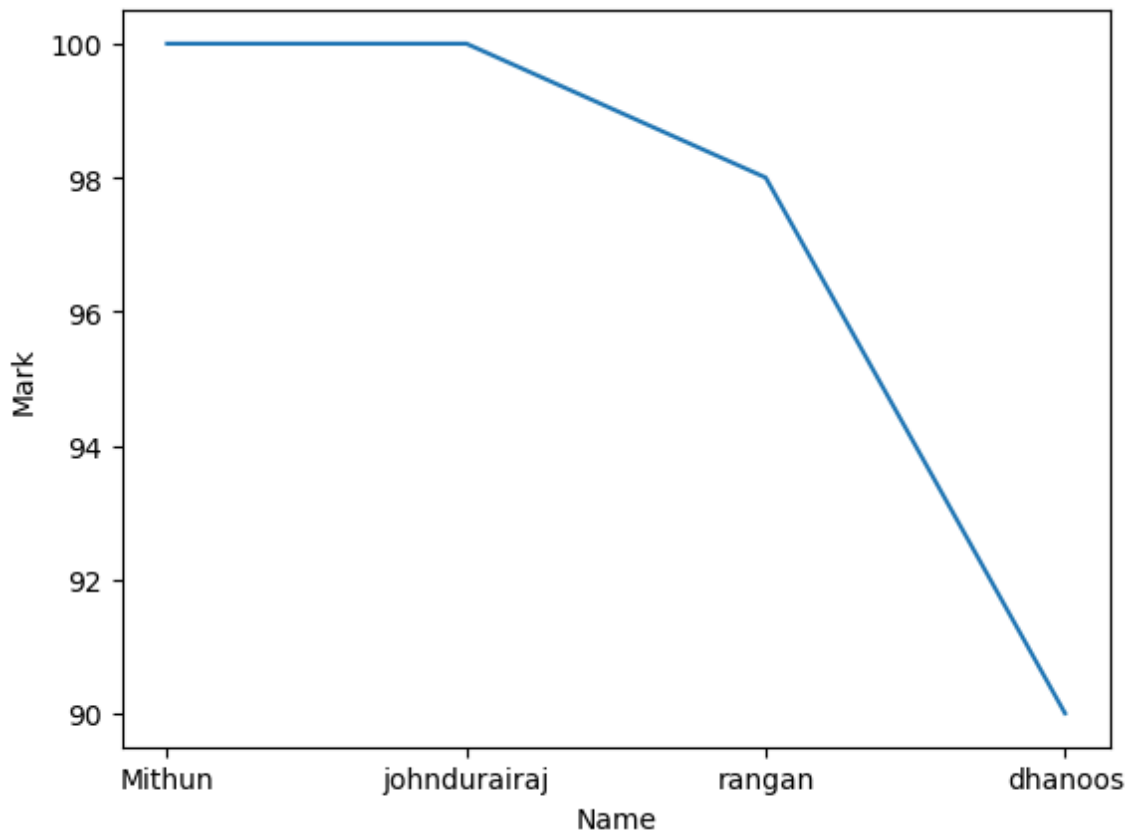
```
   Id   Name
0  12    raj
1  13   john
2  14  kumar
```

In [4]:
```python
import pandas as pd
structured_data=pd.DataFrame({
    'Rollno':[186,187,189,190,191,192,193],
    'Name':["raj","john","kumar","mithun","hasan","ikram","surya"]
})
print(structured_data)
```

```
   Rollno    Name
0     186     raj
1     187    john
2     189   kumar
3     190  mithun
4     191   hasan
5     192   ikram
6     193   surya
```

In [4]:
```python
import pandas as pd
import matplotlib.pyplot as plt
data={"Name":["Mithun","johndurairaj","rangan","dhanoos"],
      "Mark":[100,100,98,90]}
df=pd.DataFrame(data)
plt.plot(df["Name"],df["Mark"])
plt.xlabel("Name")
plt.ylabel("Mark")
plt.show()
```


In [6]:
```python
import pandas as pd
structured_data=pd.DataFrame({
    'Rollno':[186,187,189,190,191,192,193],
    'Name':["raj","john","kumar","mithun","hasan","ikram","surya"],
    'Dept':["CSE","MECH","CIVIL","ECE","EEE","AERO","AIML"]
})
print("this is unstructured data")
print(structured_data)
```

```
this is unstructured data
   Rollno    Name   Dept
0     186     raj    CSE
1     187    john   MECH
2     189   kumar  CIVIL
3     190  mithun    ECE
4     191   hasan    EEE
5     192   ikram   AERO
6     193   surya   AIML
```

In [ ]:

In [2]:
```python
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'gAAAAABmwrRMQ9eyOZiCzXVjJQ-AVehyHWVCYA2D62uX5ttWxQK61BHFn
Ogf67JnrKBrWW1qKIYkmK1UtYu8xBJOzPZDDBPoq2Eq4d1Ybea9IBQJ1Ik5fD0='
Decrypted Data b'I am Mohamed Hasan'
```

In [3]:
```python
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[3]:
```
'{"Roll.no": [352, 353, 354, 355, 356], "Name": ["Johny", "Tom", "Shiva",
"Suriya", "Mithun"], "Dept.": ["Mech", "CSE", "Civil", "Chem", "EEE"]}'
```

In [4]:
```python
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()
```
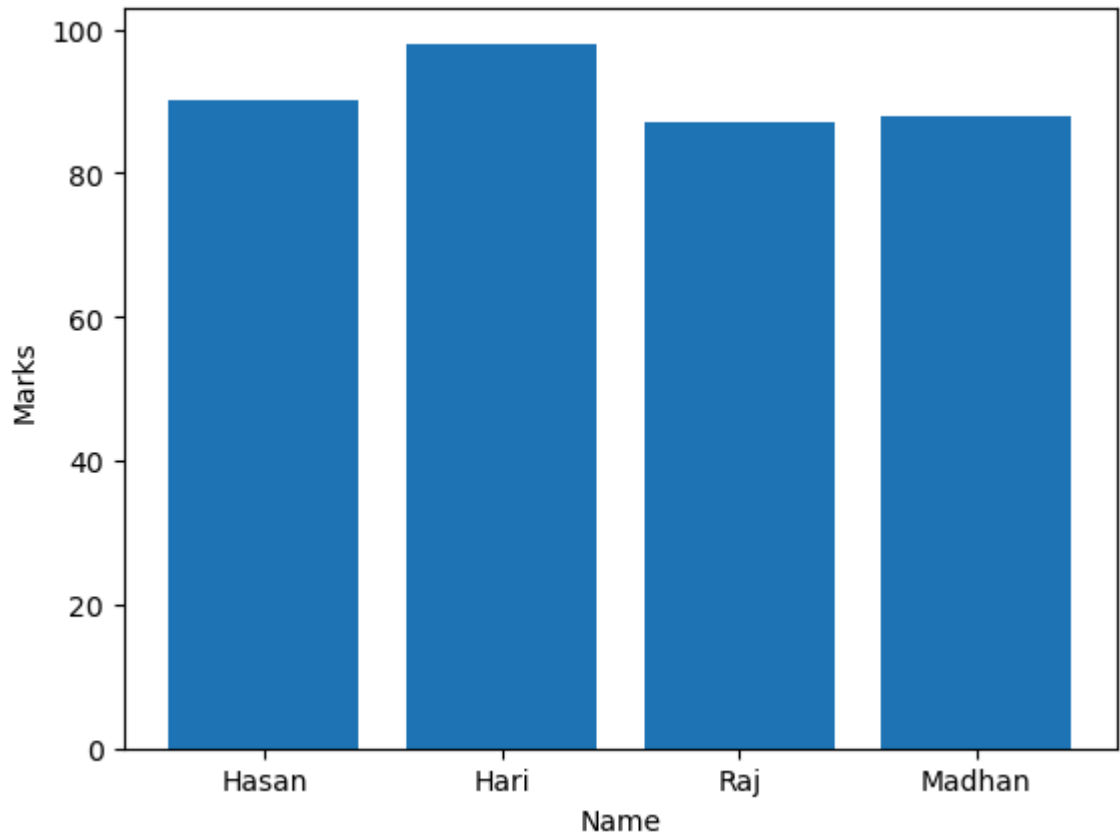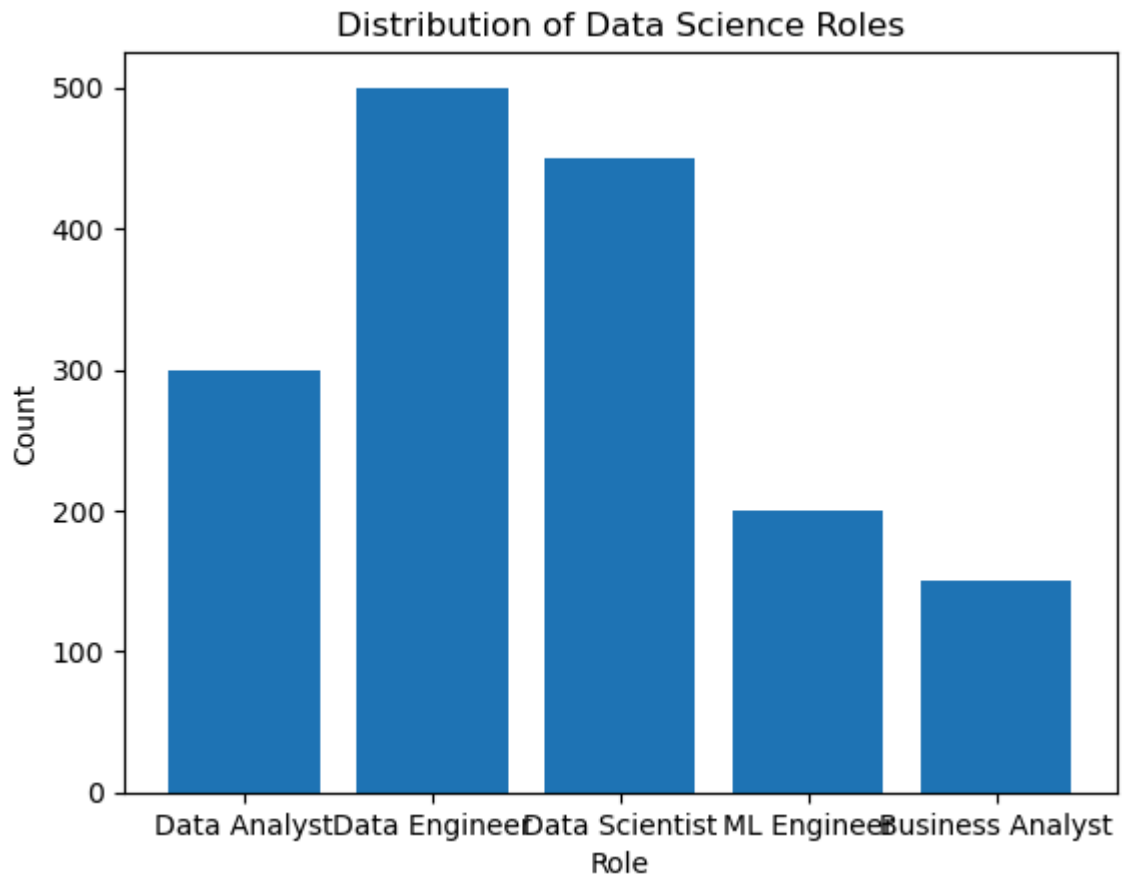
In [5]:
```python
import pandas as pd
import matplotlib.pyplot as plt
data = {'Year': list(range(2010, 2021)),
        'Job Postings': [150, 300, 450, 600, 800, 1200, 1600, 2100, 2700, 34

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()
```
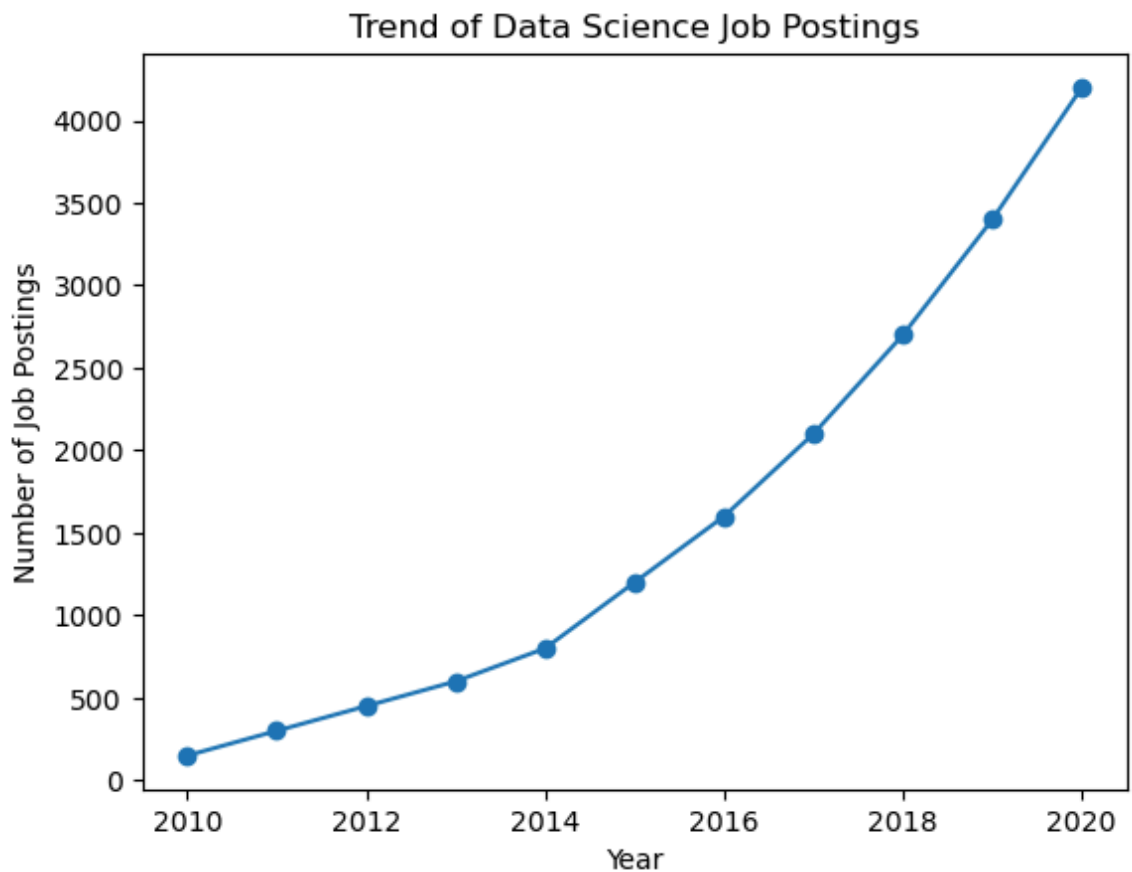
In [6]:
```python
roles = ['Data Analyst', 'Data Engineer', 'Data Scientist', 'ML Engineer', '
counts = [300, 500, 450, 200, 150]
plt.bar(roles, counts)
plt.title('Distribution of Data Science Roles')
plt.xlabel('Role')
plt.ylabel('Count')
plt.show()
```


In [ ]: