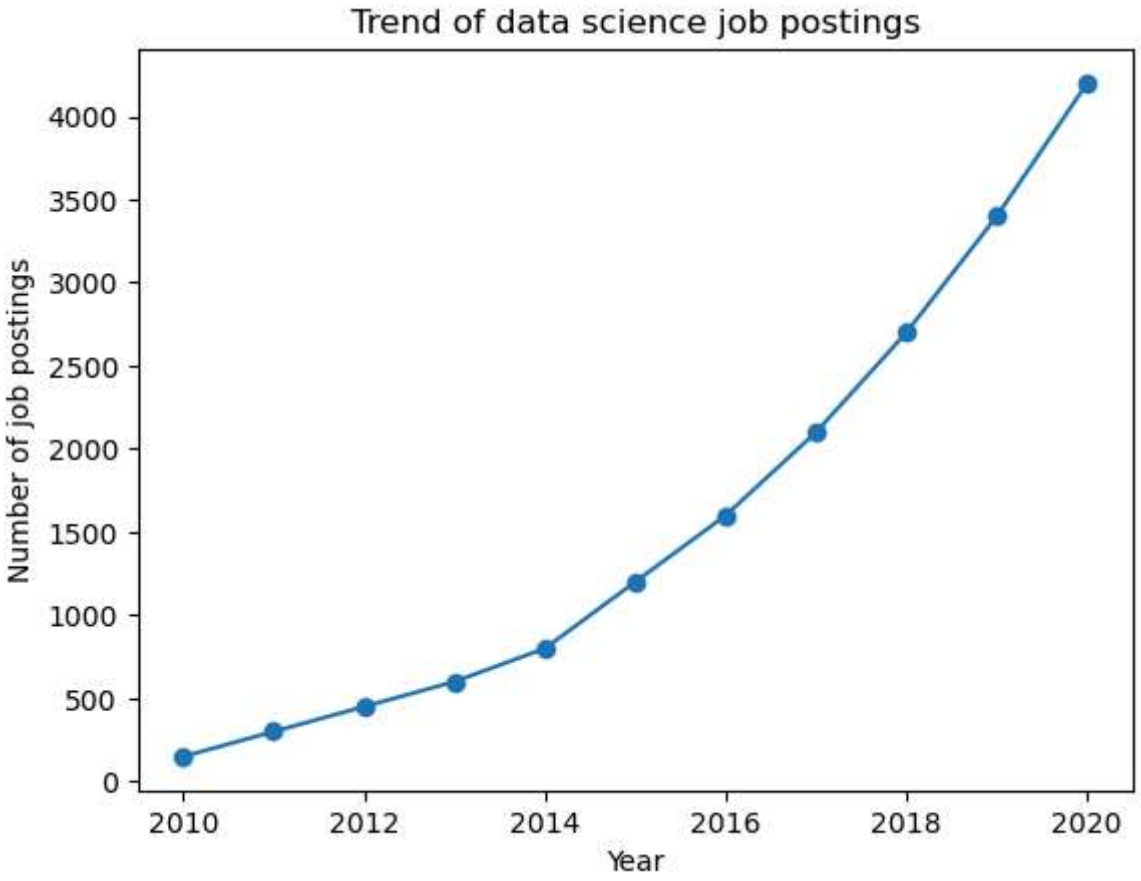
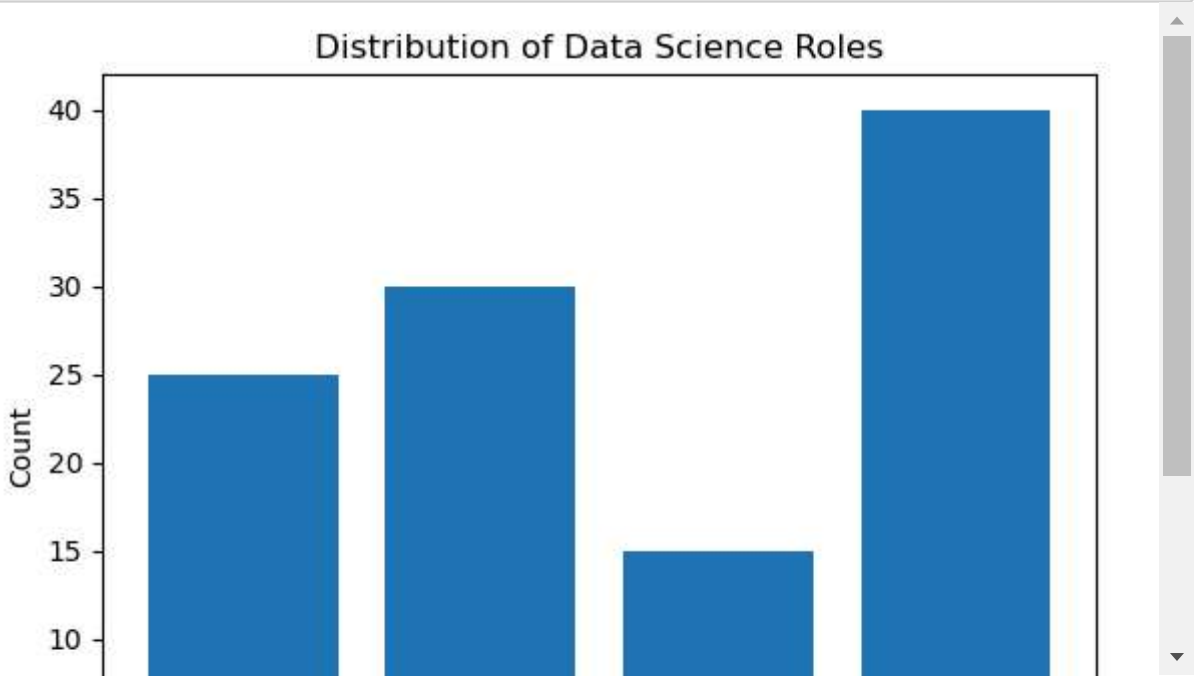
In [2]:
```
import pandas as pd
import matplotlib.pyplot as plt
data = {'Year':list(range(2010,2021)),
        'job posting':[150,300,450,600,800,1200,1600,2100,2700,3400,4200]}

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()
```

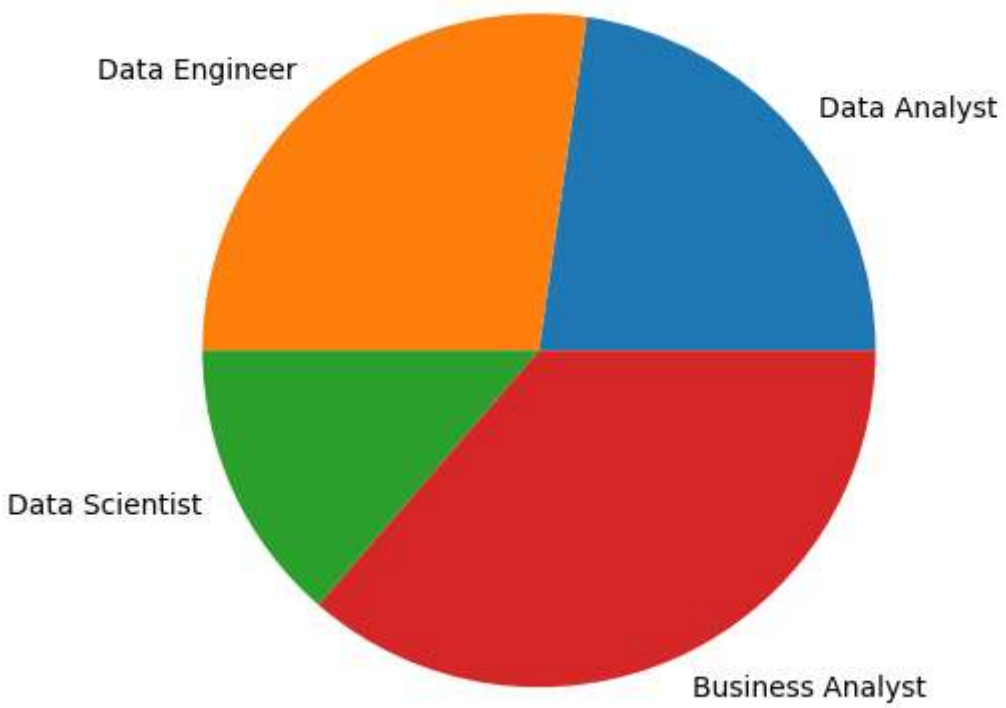


In [15]:
```
import pandas as pd
import matplotlib.pyplot as plt
roles=['Data Analyst','Data Engineer','Data Scientist','Business Analyst']
count=[25,30,15,40]
plt.bar(roles,count)
plt.title('Distribution of Data Science Roles')
plt.xlabel('Roles')
plt.ylabel('Count')
plt.show()
```



In [11]:
```
import matplotlib.pyplot as plt

roles = ['Data Analyst', 'Data Engineer', 'Data Scientist', 'Business Analyst']
count = [25, 30, 15, 40]
plt.pie(count, labels=roles)
plt.axis('equal')
plt.show()
```



In [12]:
```
import pandas as pd
structured_data = pd.DataFrame({
    'ID':[1,2,3],
    'Name':['Divya','Dinisha','Dhivya'],
    'Age':[18,18,18],
    'Marks':[81,80,82],})
print("Structured data:")
print(structured_data)
```

```
Structured data:
   ID     Name  Age  Marks
0   1    Divya   18     81
1   2  Dinisha   18     80
2   3   Dhivya   18     82
```

In [25]:
```
import pandas as pd
unstructured_data="This is an example of unstructured data. It can be a piece o
print("Unstructured Data:")
print(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 [24]:
```
semi_structured={'ID':1,'NAme':'Divya','Attributes':{'Age':18,'Marks':81}}
print("Unstructured Data:")
print(semi_structured)
```

```
Unstructured Data:
{'ID': 1, 'NAme': 'Divya', 'Attributes': {'Age': 18, 'Marks': 81}}
```

In [14]:
```
from cryptography.fernet import Fernet
key=Fernet.generate_key()
f=Fernet(key)
token=f.encrypt(b"My name is Divyadharshini K")
token
b'...'
f.decrypt(token)
b'My name is Divyadharshini'
key=Fernet.generate_key()
cipher_suite=Fernet(key)
plain_text=b'My name is Divyadharshini'
cipher_text=cipher_suite.encrypt(plain_text)
decrypt_text=cipher_suite.decrypt(cipher_text)
print("Original Data",plain_text)
print("Encrypted Data",cipher_text)
print("Decrypted Data",decrypt_text)
```

```
Original Data b'My name is Divyadharshini'
Encrypted Data b'gAAAAABmwr_Du53R9UajjHu5i9iaucNWFxkW9pB-eN2hH1_Wtg4NhbOWo1oP
6GExQ0u0jaW24i7sm2zTvxrPY3KUliZ2D_sx0Z5K4WjD1Xxv3mCM881caaY='
Decrypted Data b'My name is Divyadharshini'
```

In [ ]:

In [ ]: