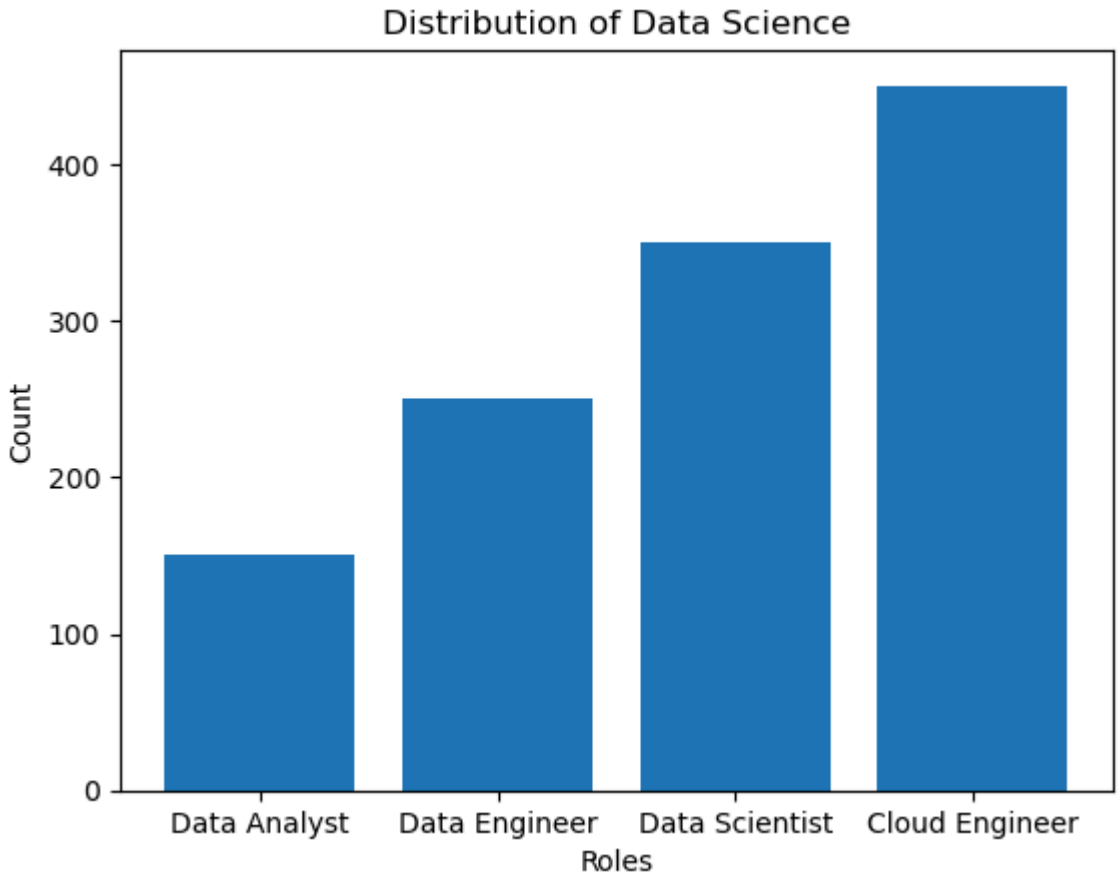
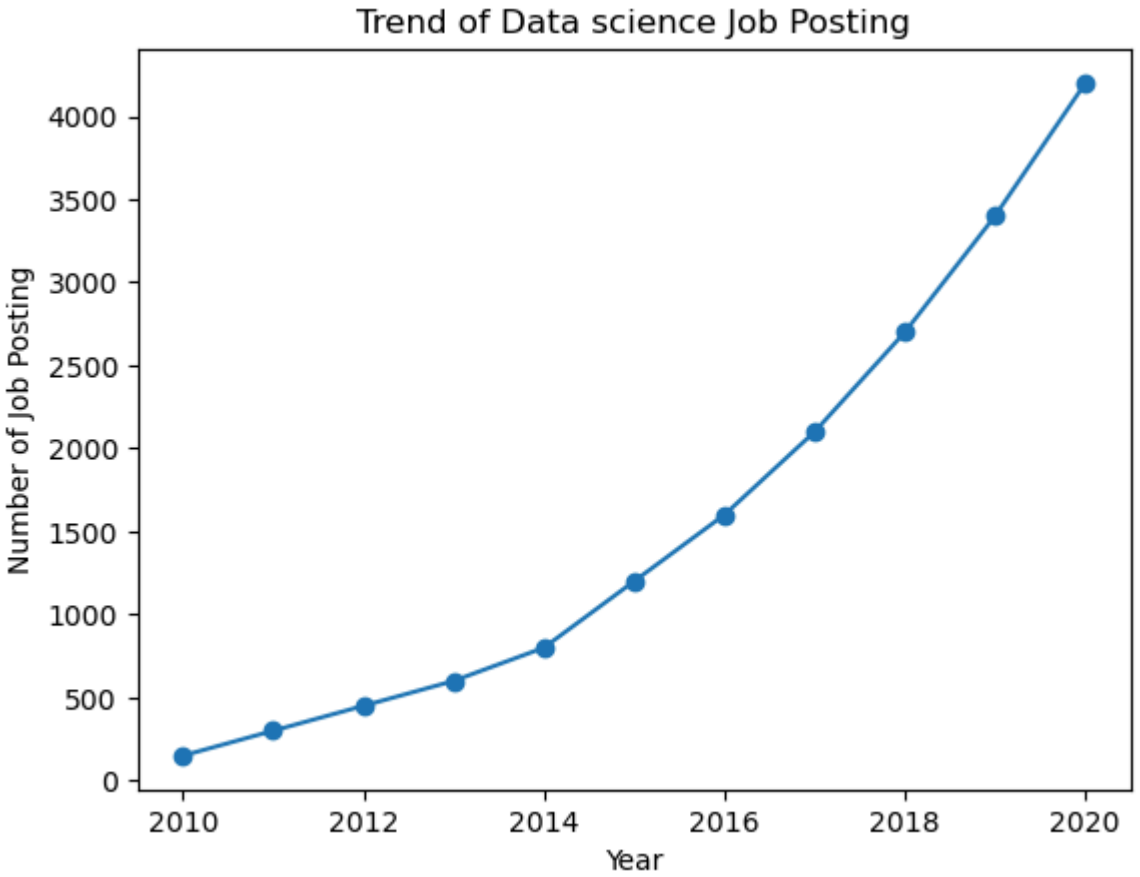
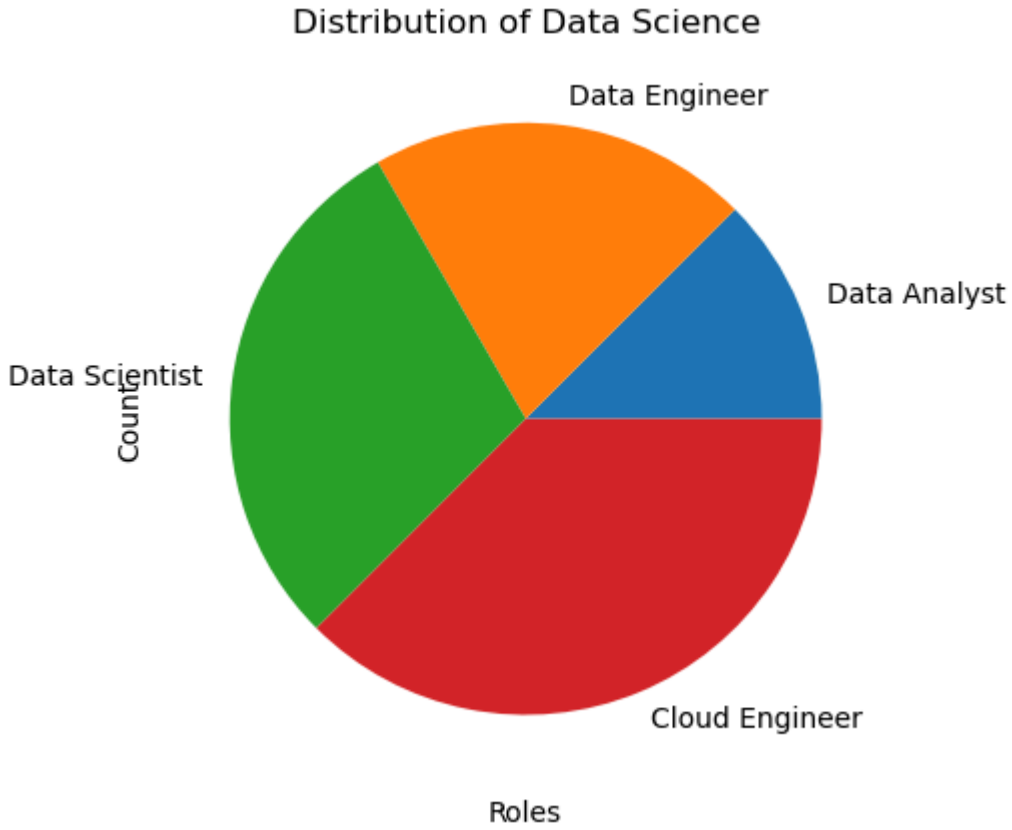
In [7]:
```
"""Analyse and visualize the distribution of various data science roles from a dataset using bar plots"""
import pandas as pd
import matplotlib.pyplot as plt
roles =['Data Analyst','Data Engineer','Data Scientist','Cloud Engineer']
count=[150,250,350,450]
plt.bar(roles,count)
plt.title('Distribution of Data Science')
plt.xlabel('Roles')
plt.ylabel('Count')
plt.show()
```



In [3]:
```
"""Analysing the trend of data science job postings over the last decade using pandas and matplotlib"""
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 Posting')
plt.xlabel('Year')
plt.ylabel('Number of Job Posting')
plt.show()
```



In [5]:
```
"""Analyse and visualize the distribution of various data science roles from a dataset using pie chart"""
import pandas as pd
import matplotlib.pyplot as plt
roles =['Data Analyst','Data Engineer','Data Scientist','Cloud Engineer']
count=[150,250,350,450]
plt.pie(count,labels=roles)
plt.title('Distribution of Data Science')
plt.xlabel('Roles')
plt.ylabel('Count')
plt.show()
```



In [8]:
```
"""Creating small datasets to explain Structured data by using pandas testfile"""
import pandas as pd
df=pd.DataFrame({ "Student Name" :('Arjun', 'Prabhas', 'Pawan'), "Reg no" :(133,134,135), "Total Marks": (486,472,457)})
print(df)
```

```
  Student Name  Reg no  Total Marks
0        Arjun     133          486
1      Prabhas     134          472
2        Pawan     135          457
```

In [9]:
```
"""Creating small datasets to explain Semi Structured data by using pandas testfile"""
data1={"Name":"Arjun","Reg.No":133, "Total Marks": 486}
data2={"Name":"Prabhas","Reg.No":134, "Total Marks": 472}
data3={"Name":"Pawan","Reg.No":135, "Total Marks": 457}
print(data1)
print(data2)
print(data3)
```

```
{'Name': 'Arjun', 'Reg.No': 133, 'Total Marks': 486}
{'Name': 'Prabhas', 'Reg.No': 134, 'Total Marks': 472}
{'Name': 'Pawan', 'Reg.No': 135, 'Total Marks': 457}
```

In [10]:
```
"""Creating small datasets to explain Unstructured data by using pandas testfile"""
print("As you sow, so you reap")
```

```
As you sow, so you reap
```

In [11]:
```
"""Understanding about encryption and decryption"""
from cryptography.fernet import Fernet
key= Fernet.generate_key()
f=Fernet(key)
plain_text=b"Computer Science Engineering"
token=f.encrypt(b"Computer Science Engineering")
print("Original Data:",plain_text)
print("Encrypted Data:", token)
print("Decrypted Data:", f.decrypt(token))
```

```
Original Data: b'Computer Science Engineering'
Encrypted Data: b'gAAAAABmwsY_sFOwZXnRSPf5CvnlXpKnpHUnt8pGfzkTvdWhEc_9_XFawEnL6QZUuEdsEzfs485ky5xdYJYyZgbXcXaTxzYSzEC
yNGacSUNvPs4NDkGfbYw='
Decrypted Data: b'Computer Science Engineering'
```

In [ ]:
```

```