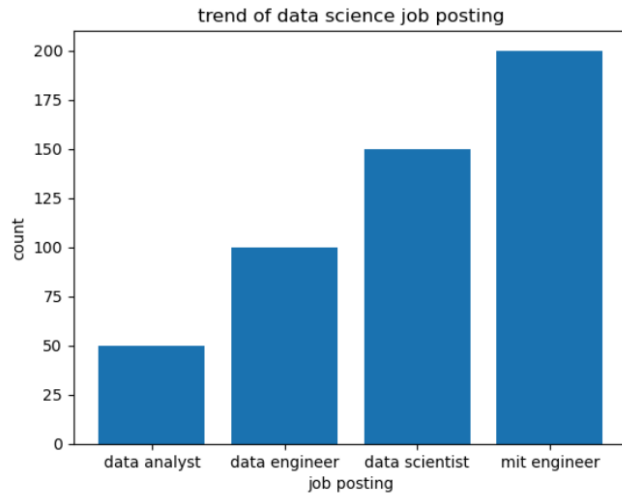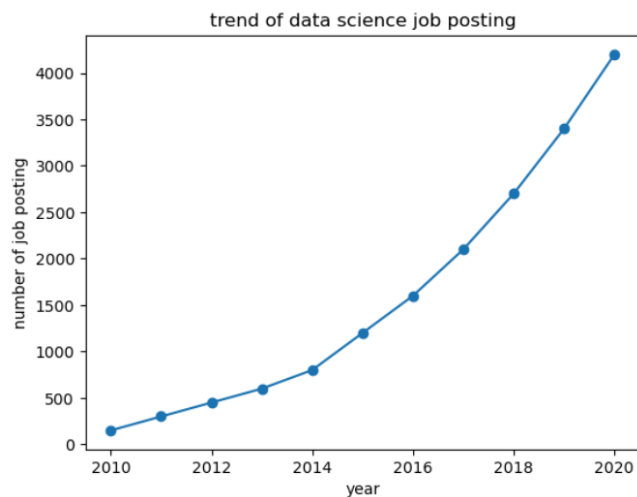```
In [1]: import pandas as pd
        import matplotlib.pyplot as plt
        job =['data analyst','data engineer','data scientist','mit engineer']
        count=[50,100,150,200]
        plt.bar(job,count)
        plt.title('trend of data science job posting')
        plt.xlabel('job posting')
        plt.ylabel('count')
        plt.show()
```



```
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 posting')
        plt.xlabel('year')
        plt.ylabel('number of job posting')
        plt.show()
```

```python
In [3]: import pandas as pd
        import matplotlib.pyplot as plt
        df=pd.DataFrame({'ROLES':['DATA ENGINEER','DATA ANALYST','DATA SCIENTISCT'],'POSTINGS':[100,200,300]})
        colors = ['orange', 'cyan', 'green']
        df.groupby(['ROLES']).sum().plot(kind='pie',y='POSTINGS',autopct='%1.0f%%',colors=colors)
```

Out[3]: `<Axes: ylabel='POSTINGS'>`
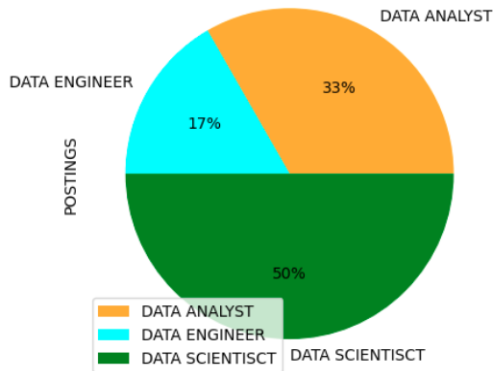

```python
In [4]: import pandas as pd
        structured_data=pd.DataFrame({
            'Name':['Alice','Bob','Charlie'],
            'Age':[25,30,35]
        })
        print("Structured Data:\n",structured_data)

        import pandas as pd
        structured_data=pd.DataFrame({
            'Name':['Alice','Bob','Charlie'],
            'Age':[25,30,35]
        })
        print("Structured Data:\n",structured_data)
```

```
Structured Data:
       Name  Age
0    Alice   25
1      Bob   30
2  Charlie   35
Structured Data:
       Name  Age
0    Alice   25
1      Bob   30
2  Charlie   35
```

```python
In [6]: import pandas as pd
        semi_structured_data="This is an example of unstructured data.It can be a place of test,an image or a video file"
        print("\nUnsubscribe Data:\n",'unstructured_data')
        semi_structured_data={'ID':1,'Name':'Alice','Attributes':{'Height':165,'Weight':68}}
        print("\nsemi structured data\n",semi_structured_data)
```

```
Unsubscribe Data:
 unstructured_data

semi structured data
 {'ID': 1, 'Name': 'Alice', 'Attributes': {'Height': 165, 'Weight': 68}}
```

```python
In [8]: import pandas as pd
        structure_data =pd.DataFrame({
            'name':['mani','manoj','ikram'],
            'age':[18,19,29],
            'id':[179,178,188]
        })
        print(structure_data)
```

```
    name  age   id
0   mani   18  179
1  manoj   19  178
2  ikram   29  188
```

```python
In [10]: import pandas as pd
         data='{"name":"mani","id":179,"age":18}'
         print(data)
```

```
{"name":"mani","id":179,"age":18}
```

```python
In [13]: from cryptography.fernet import Fernet
         key=Fernet.generate_key()
         f=Fernet(key)
         token=f.encrypt(b"mani")
         token
         b'...'
         f.decrypt(token)
         b'mani'
         key=Fernet.generate_key()
         cipher_suite=Fernet(key)
         plain_text=b"mani"
         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'mani'
encrypted data b'gAAAAABmwrd54zEm0OSEPodgPz6l_Z7kPaEBIZnr8qkLEgu6Zt44qJr_qNf8cjMIkH-fGOy2K7bGidStKdpSYLnYOAUDNkhr-w=='
decrypted data b'mani'
```