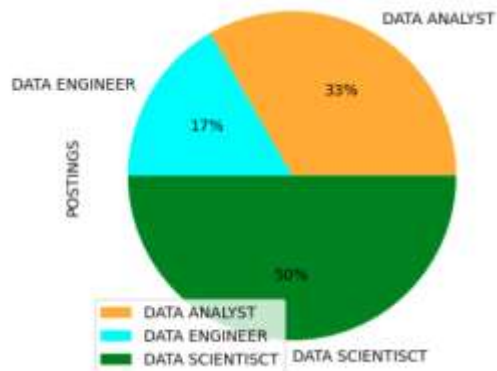


Experiment 1.A

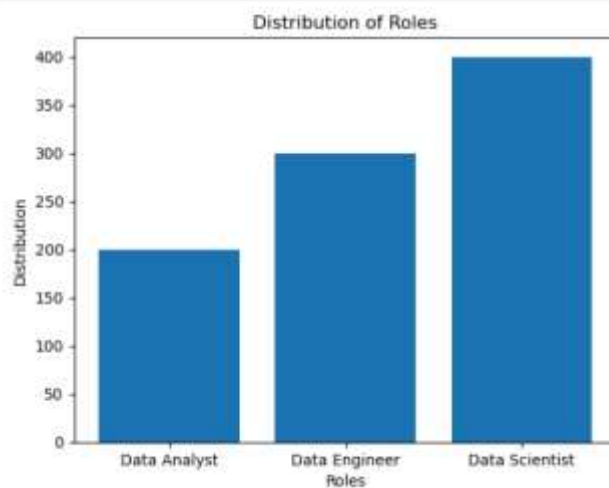
```
In [12]: import pandas as pd
import matplotlib.pyplot as plt
df=pd.DataFrame({'ROLES':['DATA ENGINEER','DATA ANALYST','DATA SCIENTIST'],'POSTINGS':[180,280,300]})
colors = ['orange', 'cyan', 'green']
df.groupby(['ROLES']).sum().plot(kind='pie',y='POSTINGS',autopct='%1.0f%%',colors=colors)

Out[12]: <Axes: ylabel='POSTINGS'>
```



Experiment 1.B

```
In [13]: import pandas as pd
import matplotlib.pyplot as plt
job=['Data Analyst','Data Engineer','Data Scientist']
data=[200,300,400]
plt.bar(job,data)
plt.title("Distribution of Roles")
plt.xlabel("Roles")
plt.ylabel("Distribution")
plt.show()
```



Experiment 1.C

```
In [3]: import pandas as pd
data={'NAMES':('MANDI','MANU','MANOHAR'),'ID':(178,179,177)}
structured_data=pd.DataFrame(data)
print(structured_data)
```

	NAMES	ID
0	MANDI	178
1	MANU	179
2	MANOHAR	177

```
In [7]: n=[2,3,4,5]
print('The numbers are:')
for i in n:
    print(i,end=',')
```

The numbers are:
2,3,4,5,

```
In [5]: import pandas as pd
data={'NAMES':('MANDI','MANU','MANOHAR'),'ID':(178,179,177)}
age=[18,17,19]
structured_data=pd.DataFrame(data)
print(structured_data,age)
```

	NAMES	ID
0	MANDI	178
1	MANU	179
2	MANOHAR	177 [18, 17, 19]

Experiment 1.D

```
In [1]: from cryptography.fernet import Fernet
key=Fernet.generate_key()
f=Fernet(key)
token=f.encrypt(b"College")
f.decrypt(token)
b'Engineering College'
key=Fernet.generate_key()
cs=Fernet(key)
pt=b"Engineering College"
ct=cs.encrypt(pt)
print(pt)
print(ct)
dt=cs.decrypt(ct)
print(dt)

b'Engineering College'
b'gAAAAABmrrpc07-jff6tU_S_07lgqx8kips4XshggJT6Wcp64wXbM4xakSho1rzu9xSukL_2owleyR4TEgr-jXY4Fn8QF2ligA8I6Hc4eC77dCS7knDesPcuw='
b'Engineering College'
```