1(a). ANALYSE THE TREND OF DATA SCIENCE FOR POSTING OVER THE LAST DECADE

import pandas as pd

import matplotlib.pyplot as plt

data={'Year':list(range(2010,2021)),'Job Postings':[150,300,450,600,800,1200,1600,2100,2700,3400,4200]}

df=pd.DataFrame(data)

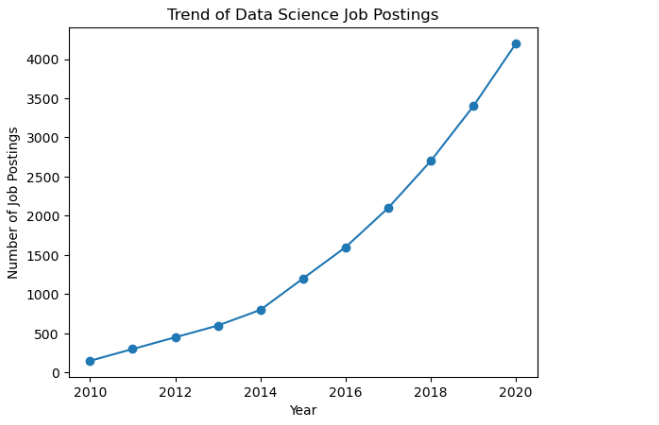
plt.plot(df['Year'],df['Job Postings'],marker='o')

plt.title('Trend of Data Science Job Postings')

plt.xlabel('Year')

plt.ylabel('Number of Job Postings')

plt.show()



1.(b) ANALYSE AND VISUALIZE THE DISTRIBUTION OF VARIOUS DATA SCIENCE ROLES

import pandas as pd

import matplotlib.pyplot as plt

roles=['Data Analyst','Data Engineer','Data Scientist']

count=[10,20,30]

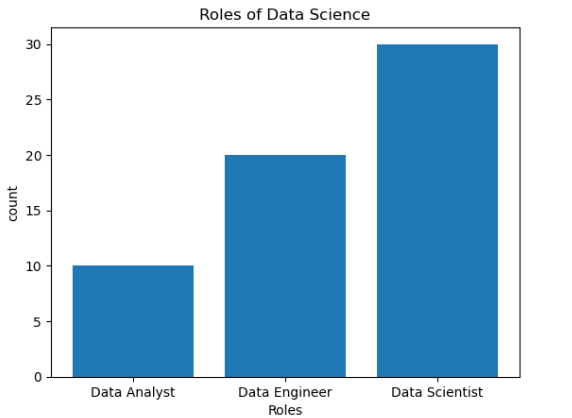
plt.bar(roles,count)

plt.title('Roles of Data Science')

plt.xlabel('Roles')

plt.ylabel('count')

plt.show()



1.(b).ii) ANALYSE AND VISUALIZE THE DISTRIBUTION OF VARIOUS DATA SCIENCE ROLES( -PIE-CHART)

import pandas as pd

import matplotlib.pyplot as plt

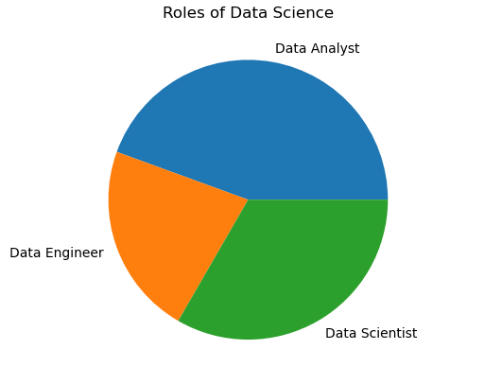
roles=['Data Analyst','Data Engineer','Data Scientist']

count=[40,20,30]

plt.pie(count,labels=roles,colours=['blue','pim'])

plt.title('Roles of Data Science')

plt.show()



1.(c) ANALYSE AND VISUALIZE THE DISTRIBUTION OF VARIOUS DATA SCIENCE ROLES

import pandas as pd

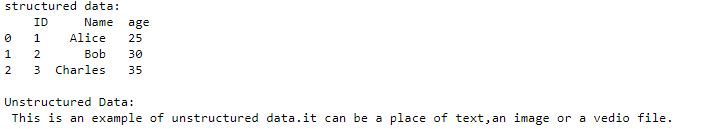
import matplotlib

structured\_data=pd.DataFrame({'ID':[1,2,3],'Name':['Alice','Bob','Charles'],'age':[25,30,35]})

print("structured data:\n",structured\_data)

unstructured\_data="This is an example of unstructured data.it can be a place of text,an image or a vedio file."

print("\nUnstructured Data:\n",unstructured\_data)



Exp No:1.d Conduct an experiment to encrypt and decrypt given sensitive data.

Code:

from cryptography.fernet import Fernet

key= Fernet.generate\_key()

f=Fernet(key)

token = f.encrypt(b"Fundamentals of Data science")

token

b'...'

f.decrypt(token)

b'Fundamentals of data science'

key= Fernet.generate\_key()

chiper\_suite=Fernet(key)

plain\_text=b"Fundamentals of Data Science"

chiper\_text=chiper\_suite.encrypt(plain\_text)

decrypted\_text=chiper\_suite.decrypt(chiper\_text)

print("Original Data:",plain\_text)

print("Encrypted Data:",chiper\_text)

print("Decrypted Data:",decrypted\_text)

Output: 