'''PROGRAM 1

'''

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')

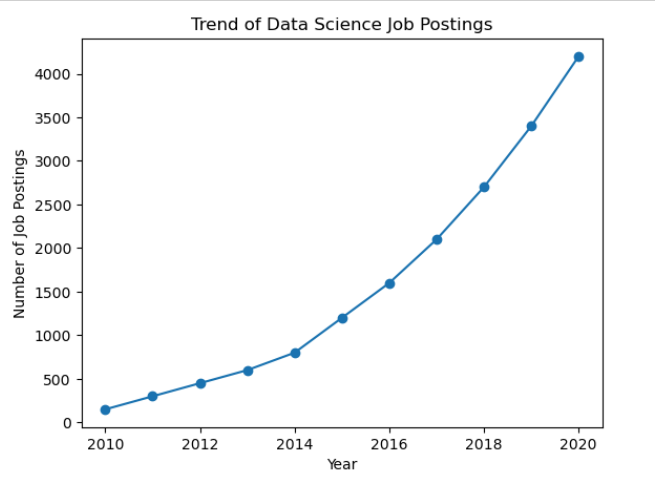
plt.title('Trend of Data Science Job Postings')

plt.xlabel('Year')

plt.ylabel('Number of Job Postings')

plt.show()

OUTPUT:



''' PROGRAM 2(a)BAR GRAPH

'''import pandas as pd

import matplotlib.pyplot as plt

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

count=['250','300','400']

fig=plt.figure(figsize=(10,7))

#plt.pie(count,labels=role)

plt.bar(role,count,color='green')

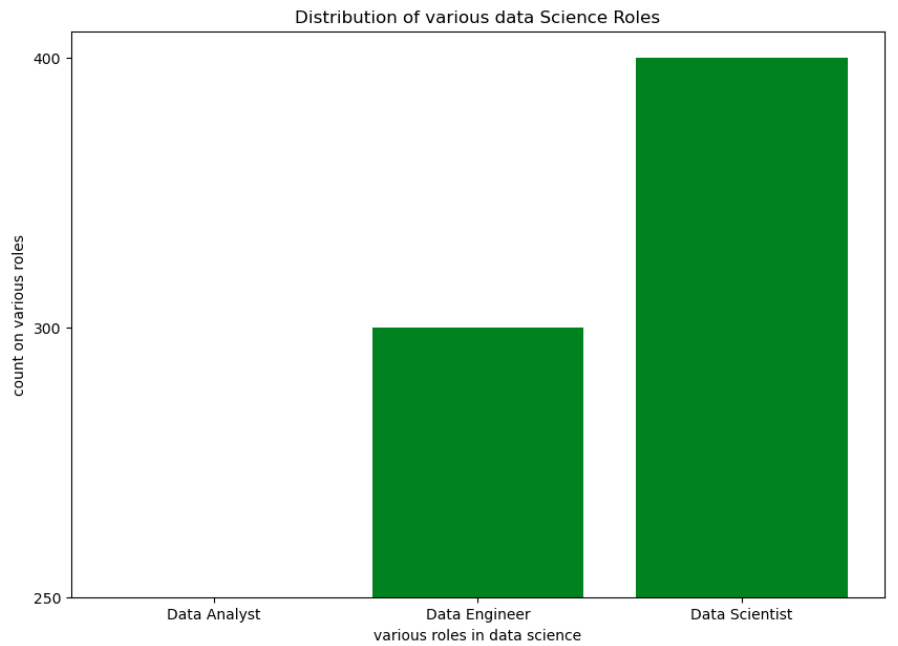
plt.title('Distribution of various data Science Roles')

plt.xlabel('various roles in data science')

plt.ylabel('count on various roles')

plt.show()

OUTPUT:



''' PROGRAM 2(b)PIE CHART

'''

import pandas as pd

import matplotlib.pyplot as plt

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

count=['250','300','400']

fig=plt.figure(figsize=(10,7))

plt.pie(count,labels=role)

#plt.bar(role,count,color='green')

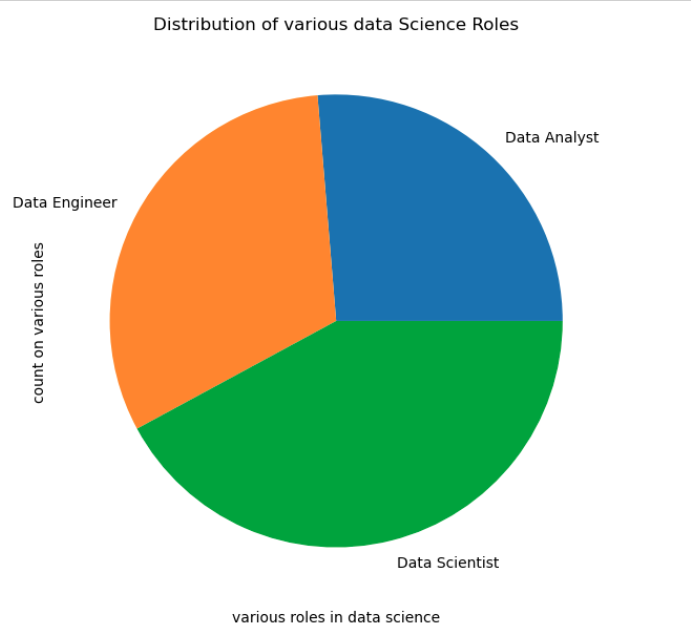
plt.title('Distribution of various data Science Roles')

plt.xlabel('various roles in data science')

plt.ylabel('count on various roles')

plt.show()

OUTPUT:



''' PROGRAM 3

Aim:

to give eample of structured,unstructured,semistructured data.

description:

create small datasets for each type and explain their characteristics.

'''

import pandas as pd

structure1=pd.DataFrame([{'S.no':1,'Name':'k','age':11}])

unstructure1=pd.DataFrame(['S.no 1 Name k age 11'])

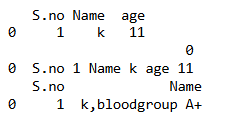
semistructure1=pd.DataFrame([{"S.no":1,"Name":'k,bloodgroup A+'}])

print(structure1)

print(unstructure1)

print(semistructure1)

OUTPUT:



PROGRAM 4

ENCRYPTION AND DECRYPTION

Using fernet library for encrypt and decrypt

PROGRAM:

from cryptography.fernet import Fernet

key=Fernet.generate\_key()

f=Fernet(key)

token=f.encrypt(b"Hi Hello")

token

b'...'

f.decrypt(token)

b'Hi Hello'

key=Fernet.generate\_key()

cipher\_suite=Fernet(key)

plain\_text=b"Hi Hello"

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

#decrypt data

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

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

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

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

OUTPUT:

