**DATA SCIENCE**

DATA VISUALIZATION

**ANALYSE THE TREND OF DATA SCIENCE JOB POSTINGS OVER LAST DECADE**

import pandas as pd

import matplotlib.pyplot as plt

data={"Year":list(range(2010,2021)),"Job Postings":[150,300,450,600,2100,2700,3400,4200,4500,4800,5100]};

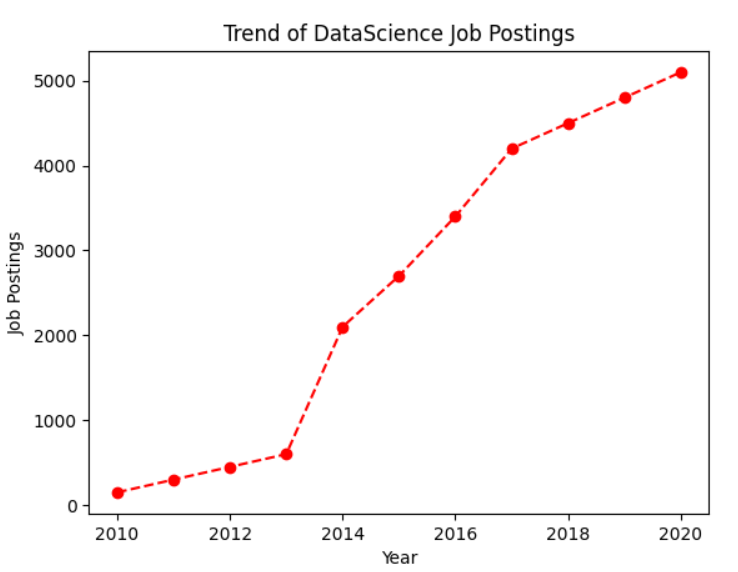
df=pd.DataFrame(data);

plt.title("Trend of DataScience Job Postings");

plt.plot(data["Year"],data["Job Postings"],marker="o",color="red",linestyle="--");

plt.xlabel("Year");

plt.ylabel("Job Postings");



ANALYSE AND VISUALIZE THE DISTRIBUTION OF VARIOUS DATA SCIENCE ROLES

import matplotlib.pyplot as plt

roles=["Data Analyst","Data Engineer","Data Scientist","ML Engineer","Business Analyst"];

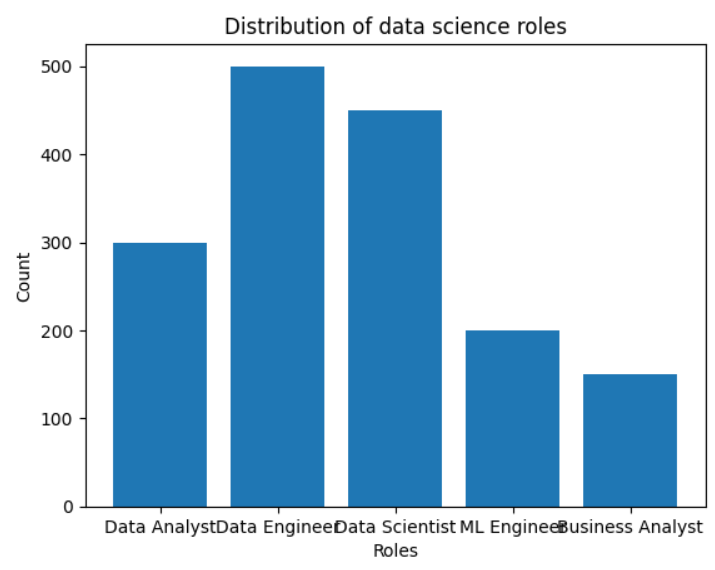
count=[300,500,450,200,150];

plt.bar(roles,count)

plt.title("Distribution of data science roles");

plt.xlabel("Roles");

plt.ylabel("Count");



DIFFERENTIATE STRUCTURED,SEMI-STRUCTURED AND UNSTRUCTURED DATA

import pandas as pd

#STRUCTURED DATA

data=pd.DataFrame({"ID":[1,2,3],"Name":['Monisha','Jenifer','Jenita'],"Age":[20,30,40]});

print("Structured Data\n",data)

print("\n")

#UNSTRUCTURED DATA

x="This is an example of unstructured data.it can be a piece of text,an image or a video file";

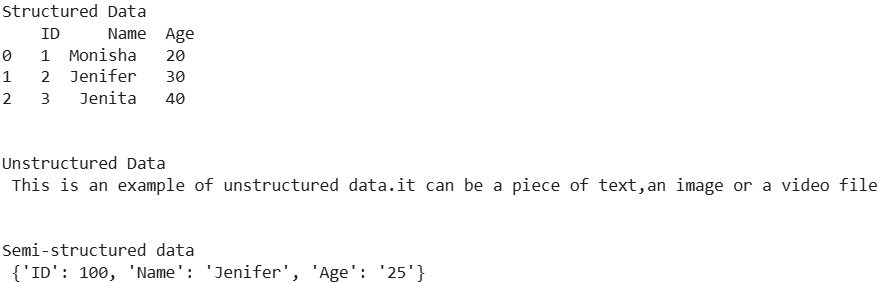
print("Unstructured Data\n",x)

print("\n")

s={"ID":100,"Name":"Jenifer","Age":"25"}

#SEMISTRUCTURED DATA

print("Semi-structured data\n",s);



**CONDUCT AN EXPERIMENT TO ENCRYPT AND DECRYPT GIVEN SENSITIVE DATA**

#GENERATE KEY AND ENCRYPT DATA

from cryptography.fernet import Fernet

key=Fernet.generate\_key()

f=Fernet(key)

token=f.encrypt(b"Computer Science Engineering")

token

b'.....'

f.decrypt(token)

b'Computer Science Engineering'

key=Fernet.generate\_key()

cipher\_suite=Fernet(key)

plain\_text=b"Computer Science Engineering"

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

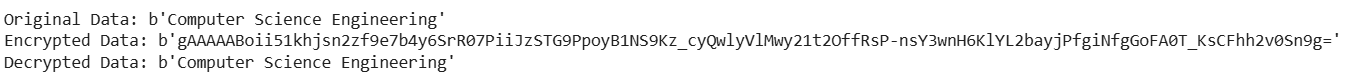
#Decrypt data

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

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

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

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



**BY MONISHA.S**

**SECOND YEAR CSE DEPT**