**TASK**

1. Explain the role of Data science with python?

Ans: Python plays an important role in data science and analytics. As we know Python is an open source, general purpose programming language that can be used for everything from web applications and programs to performing analysis on huge amounts of data. Python is popular because it is freely available to use, code readability, and it is easy for anyone to learn. Also, it is popular because of its user friendliness and the ability to integrate with a variety of programs, tools and websites.

Python has become one of the most popular languages for data management and analysis. Today, Python is widely used by startups and tech companies to embed analytics into their products, and by data scientists to quickly manage and analyze huge amounts of data. Python has a set of tools called the Python Data Analytics Stack that address every step of the analytics workflow. These tools are assembled into Python libraries, which are collections of code that are easy to use. While the names of these specific libraries may change, here's a few examples of common libraries for data science.

1. Pandas for importing and assessing data including outline analysis, and data cleansing, as well as summary statistics.
2. NumPY and SciPy for performing extremely fast matrix, mathematical and scientific operations.
3. Statsmodels for fitting a wide range of statistical models to the data. Scikit-Learn from applying machine learning techniques like, clustering, dimensionality reduction, random forests and logistic regression.
4. Matplotlib, Seaborn and Bokeh for producing attractive visuals. Python has libraries that can also handle unstructured data like text and images. For example, NLTK, Spacy, and Gensim process text data.

Python is a great choice because it handles many of the data science use cases, from simple descriptive statistic,s to statistical models, to complex machine learning and distributed computing embedded in dynamic web applications. Python is easy to use because it was designed to be easy for programmers so that the learning curve is not too steep.

1. Matrix multiplication in python

Solution:

X= [ [2, 5, 6], [2, 5, 6], [6, 8, 2] ]

Y = [ [6,5,9] , [5,3,4] , [3,5,7] ]

result = [ [ 0,0,0] , [0,0,0] , [0,0,0] ]

for i in range (len(X)):

for j in range (len(Y[0])):

for k in range (len(Y)):

result[i][j] += X[i][k] \* Y[k][j]

for r in result :

print (r)