Summer 2023:
CS5710 – Machine Learning

In-Class Programming Assignment-1

Github link: https://github.com/arunkumar2601/Assignment-1.git

1. NumPy:

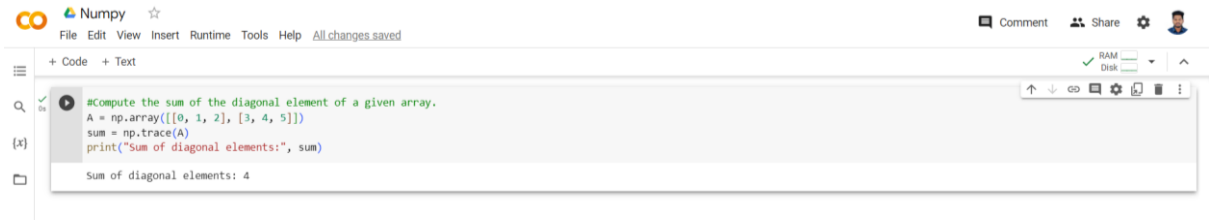
a. Using NumPy create random vector of size 15 having only Integers in the range 1-20.

1. Reshape the array to 3 by 5
2. Print array shape.
3. Replace the max in each row by 0

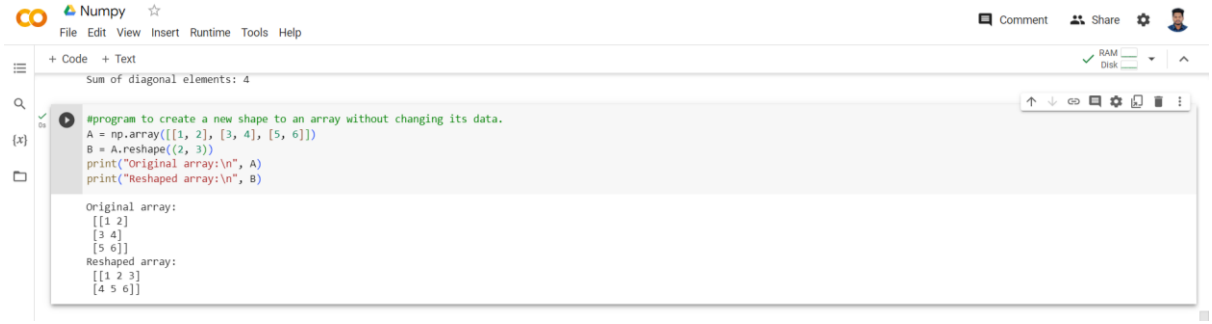
Create a 2-dimensional array of size 4 x 3 (composed of 4-byte integer elements), also print the shape, type, and data typeof the array.

b. Write a program to compute the eigenvalues and right eigenvectors of a given square array given below:
[[3 -2]
[1 0]]

c. Compute the sum of the diagonal element of a given array.
[[0 1 2]
[3 4 5]]

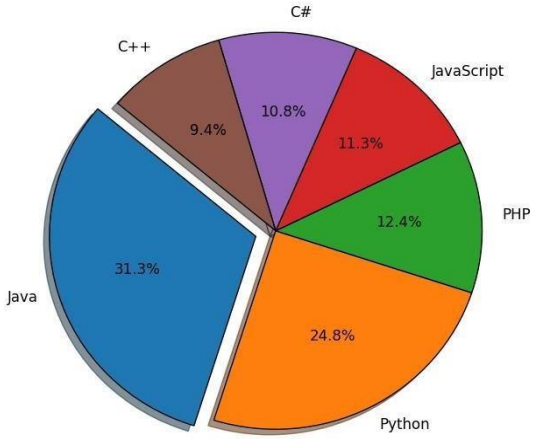


d. Write a NumPy program to create a new shape to an array without changing its data.Reshape 3x2:
[[1 2]
[3 4]
[5 6]]
Reshape 2x3:
[[1 2 3]
[4 5 6]]



2. Matplotlib

1. Write a Python programming to create a below chart of the popularity of programming Languages.
2. Sample data: Programming languages: Java, Python, PHP, JavaScript, C#, C++Popularity: 22.2, 17.6, 8.8, 8, 7.7, 6.7



Numpy

File Edit View Insert Runtime Tools Help

Comment Share

+ Code + Text

RAM Disk

```
import matplotlib.pyplot as plt
#Python programming to create a below chart of the popularity of programming Languages.
languages = ['Java','Python','PHP','JavaScript','C','C++']
popularity = [22.2, 17.6, 8.8, 8, 7.7, 6.7]
plt.pie(popularity, labels=languages, autopct='%1.1f%%')
plt.title('Popularity of Programming Languages')
plt.show()
```