**Summer 2023: Machine Learning Programming Assignment-1**

**CRN:31143**

**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

SOLUTION:A screenshot of a computer program

Description automatically generated with medium confidence

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

SOLUTION:

A screen shot of a computer program

Description automatically generated with low confidence

b. Write a program to compute the eigenvalues and right eigenvectors of a given square array given below:

[[ 3 -2]

[ 1 0]]

SOLUTION:

A picture containing text, screenshot, software, multimedia software

Description automatically generated

c. Compute the sum of the diagonal element of a given array.

[[0 1 2]

[3 4 5]]

SOLUTION:

A screenshot of a computer program

Description automatically generated with low confidence

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]]

SOLUTION:

A screenshot of a computer program

Description automatically generated with medium confidence

**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

A picture containing text, diagram, circle, screenshot

Description automatically generated

SOLUTION:

A computer screen shot of a pie chart

Description automatically generated with medium confidence

GITHUB LINK: https://github.com/Sri-Priya-Akunuri/ML-Assignment-1.git