Data Science and AI Assignment 1 (NumPy)

Deadline 13th May 11:99 PM

(don't use any loop)

Basic (5 mark)

Question 1:

Install NumPy using (!pip install numpy) in jypyter notebook and import NumPy using (import numpy). Now create a NumPy array.

Question 2:

Create a 2-dimensional NumPy array with arrange function and additional tools.

Question 3:

Create a 3D array with all 1. (using NumPy library only)

Question 4:

Let an array, array = numpy.arrange(24)

Change this into a 3-dimensional array.

Question 5:

Create an array with 50 numbers that are equally spaced.

Intermediate(10 mark)

Question 6:

array = numpy.arange(30)

Reshape in the following order.

```
array([[[ 0,  1,  2,  3,  4],
        [ 5,  6,  7,  8,  9]],
```

```
        [[10, 11, 12, 13, 14],
         [15, 16, 17, 18, 19]],

        [[20, 21, 22, 23, 24],
         [25, 26, 27, 28, 29]]])
```

Question 7:

array = numpy.arange(1,41).reshape(5,2,4)

replace mid elements with 0.

output:

```
array([[[ 1,  2,  3,  4],
        [ 5,  6,  7,  8]],

       [[ 9, 10, 11, 12],
        [13, 14, 15, 16]],

       [[17,  0,  0, 20],
        [21,  0,  0, 24]],

       [[25, 26, 27, 28],
        [29, 30, 31, 32]],

  [[33, 34, 35, 36],
[37, 38, 39, 40]]])
```

Question 8:

array = numpy.arange(100).reshape(5,2,2,5) replace all number with 0 that are divisible by 10

Question 9:

Let an array, array = np.arange(24).reshape(3,2,4) (print this array to understand the question)

Use this array and create a new one containing all odd numbers of the previous array.

Question 10:

Write use cases of NumPy array and explain how numpy array is different from python array.