INFS 772 Assignment 1 Numpy Basics

(Total 15 points, a Jupyter Notebook file is required)

Exercise 1: Create a 4X2 integer array and Print its attributes.

Note: The element must be a type of unsigned int16. And print the following Attributes: –

- The shape of an array.
- Array dimensions.
- The Length of each element of the array in bytes.

Expected Output:

```
Printing Array

[[64392 31655]
 [32579     0]
 [49248   462]
 [    0     0]]

Printing NumPy array Attributes

1> Array Shape is:  (4, 2)
2>. Array dimensions are  2
3>. Length of each element of array in bytes is  2
```

Exercise 2: Create a 5X2 integer array from a range between 100 to 200 such that the difference between each element is 10.

Expected Output:

```
Creating 5X2 array using numpy.arange
[[100 110]
 [120 130]
 [140 150]
 [160 170]
 [180 190]]
```

Exercise 3: Following is the provided numpy array. return array of items in the second column from all rows.

```
sampleArray = np.array([[11 ,22, 33], [44, 55, 66], [77, 88, 99]])
```

Expected Output:

```
Printing Input Array
[[11 22 33]
 [44 55 66]
 [77 88 99]]
```

```
 Printing array of items in the second column from all rows
[22 55 88]
```

Exercise 4: Following is the given numpy array return array of odd rows and even columns.

```
sampleArray = np.array([[3 ,6, 9, 12], [15 ,18, 21, 24],
[27 ,30, 33, 36], [39 ,42, 45, 48], [51 ,54, 57, 60]])
```

Expected Output:

```
Printing Input Array
[[ 3  6  9 12]
 [15 18 21 24]
 [27 30 33 36]
 [39 42 45 48]
 [51 54 57 60]]

 Printing array of odd rows and even columns
[[ 6 12]
 [30 36]
 [54 60]]
```

Exercise 5: Add the following two NumPy arrays.

```
arrayOne = np.array([[5, 6, 9], [21 ,18, 27]])
arrayTwo = np.array([[15 ,33, 24], [4 ,7, 1]])
```

Expected Output:

```
addition of two arrays is

[[20 39 33]
 [25 25 28]]
```