National Vocational & Technical Training Commission
Institute of Electrical, Electronics and Computer Engineering
University of the Punjab

Artificial Intelligence C1 & C2
Assignment 01 : 06/06/2023
Module 1 : week 3

Submission Requirements: Please upload your codes in PDF File on Google Classroom in the relevant Assignment section.

Note: Plagiarism is a serious violation. Zero marks will be awarded in case plagiarism is found.

Task 1:

Stack arrays a and b vertically

Input

```
a = np.arange(10).reshape(2,-1)
b = np.repeat(1, 10).reshape(2,-1)
```

Desired Output:

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

Task 2

Create the following pattern without hardcoding. Use only numpy functions and the below input array a.

Input:

```
a = np.array([1,2,3])`
```

Desired Output:

```
#> array([1, 1, 1, 2, 2, 2, 3, 3, 3, 1, 2, 3, 1, 2, 3, 1, 2, 3])
```

Task 3

Convert the function `maxx` that works on two scalars, to work on two arrays.

Desired Output:

```
a = np.array([5, 7, 9, 8, 6, 4, 5])
b = np.array([6, 3, 4, 8, 9, 7, 1])
pair_max(a, b)
#> array([ 6.,  7.,  9.,  8.,  9.,  7.,  5.])
```

Task 4

Swap rows 1 and 2 in the array `arr`:

Task 5

From array `a` remove all items present in array `b`

Input:

```
a = np.array([1,2,3,4,5])
b = np.array([5,6,7,8,9])
```

Desired Output:

```
array([1,2,3,4])
```