

**ITM (SLS) Baroda University**

**School of Computer Science, Engineering and Technology**

**Semester 2**

**Course Name: Programming in Python-II**

**Course Code: C22X0C4**

**Course Type:** Core

**Lab Experiments: Numpy and Pandas**

1. Swap rows and columns of a given array in reverse order.
2. Create a 4x4 array, now create a new array from the said array swapping first and last, second and third columns.
3. Create a array of shape (3,4) consisting of elements from 1 to 12.
   1. Replace 4 value with 14
   2. Replace all the elments which are smaller than 5 with 111.
   3. Replace all the elements which are greater than 7 with 1111.
4. Given array:

[[0 0 0 0 0 0]

[0 0 0 0 0 0]

[0 0 0 0 0 0]

[0 0 0 0 0 0]

[0 0 0 0 0 0]]

**New array:**

[[3 0 3 0 3 0]

[7 0 7 0 7 0]

[3 0 3 0 3 0]

[7 0 7 0 7 0]

[3 0 3 0 3 0]]

1. Write a NumPy program to create a 4x4 array with random values, now create a new array from the said array swapping first and last rows.
2. Write a NumPy program to create a vector with values from 0 to 20 and change the sign of the numbers in the range from 9 to 15.
3. Create a DataFrame for Hotel using Pandas with following attributes:

Index:Day, Total\_Customers, TotalBill, Number of Tips :Columns

* 1. Print top 3 and bottom 2 values of data set
  2. Print the information about column and its data types
  3. Print the details max, mean, count and all using describe function
  4. Print unique values of each feature
  5. Apply the same exercise for any two datasets you have worked previously