**Programming Assignment no 2**

**Numpy:**

1.      Write a program which creates the random array may consist of duplicate values. Find the count of unique values in an array.

2.      Write a program to create a new column from existing columns of numpy array?

e.g. [[1 2 3] [4 5 6]] = [[1 2 3 6] [4 5 6 15]]

3.      Write a program which takes 2 digits, X,Y as input and generates a 2-dimensional array. The element value in the i-th row and j-th column of the array should be i\*j.

**Note**: i=0, 1.., X-1; j=0,1,¡­Y-1.

Example

Suppose the following inputs are given to the program:

3,5

Then, the output of the program should be:

[[0, 0, 0, 0, 0], [0, 1, 2, 3, 4], [0, 2, 4, 6, 8]]

**Hints:**

Note: In case of input data being supplied to the question, it should be assumed to be a console input in a comma-separated form.

**Pandas Exercises**

With the given dataset perform the following operations using pandas, compile the output, and submit it on LMS.

Look into the database For Automobile CSV File. Use the same file to complete the following task associated with the dataset and make use of pandas

1) Clean data and update the CSV file.

2) Find the most expensive car company name.

3) Count total cars per company.

4) Find each company’s highest price car.

5) Find the average mileage of each car making company.

6) Concatenate two data frames using the following conditions

Create two data frames using the following two Dicts, Concatenate those two data frames and create a key for each data frame.

GermanCars = {'Company': ['Ford', 'Mercedes', 'BMV', 'Audi'], 'Price': [23845, 171995, 135925 , 71400]}

japaneseCars = {'Company': ['Toyota', 'Honda', 'Nissan', 'Mitsubishi '], 'Price': [29995, 23600, 61500 , 58900]}

7) Merge two data frames using the following condition

Create two data frames using the following two Dicts, Merge two data frames, and append the second data frame as a new column to the first data frame.

Car\_Price = {'Company': ['Toyota', 'Honda', 'BMV', 'Audi'], 'Price': [23845, 17995, 135925 , 71400]}

car\_Horsepower = {'Company': ['Toyota', 'Honda', 'BMV', 'Audi'], 'horsepower': [141, 80, 182 , 160]}