NC STATE UNIVERSITY

BUS 443: Project 4

In this project you are asked to write code in Python for the following questions.

1)

a. Write a Python program that accepts a list of numbers as command line arguments (use argparse) and calculates the average of the numbers and prints the output on the screen. If your python file is called average.py we would execute your code like below

python average.py -lst 4 8 10 2

Output: **Average = 6**

python average.py -lst 2 3 4

Output: **Average = 3**

Add exception handling to the functions

Submit: ***average.py***

b. Write a Python program that accepts a list of strings as command line arguments, removes all the duplicate characters from each string and prints the list of strings without duplicate characters as output

Example:

python removeDuplicates.py -lst sttranger thinnggsss carrot

Output: **strange things carot**

Submit: ***removeDuplicates.py***

c. Write a Python program that accepts multiple integer lists as command line arguments and computes the square of every list item. (We can accept multiple lists by using an additional attribute along with nargs. Do your research to find out what the additional attribute is)
Example:

python multiple.py -lst 2 8 6 -lst 12 2 9

Output: [[4,64,36],[144,4,81]]

Submit: ***multiple.py***

(30 points)

2) In MySQL, create a table called faculty with columns firstname, lastname, coursename and courselocation.
Write a python program that connects to your MySQL database and inserts a row of data into the table. In the same program, write a select statement to retrieve all the data from the faculty table and write the data to either a text or csv file on your system.
Remember to close database connections and to close file objects.

Submit: ***dboperations.py*** (30 points)

3) Implementing a queueing system in python.
Write a class to implement a first in first out queue. Think of the best data structure (list, tuple or dictionary) you might want to use.

As a practical example think of implementing a queueing system for a drive through restaurant.

What your class should contain:

- Init method to initialize the empty queue (data structure)
- Addtoqueue method which adds the next item (car) to the queue
- Popfromqueue method which removes the item at the head of the queue
- Sizeofqueue which gives the number of items in the queue at any given time.

How we will be testing your code:

- Create a new object (newitem = Queue())
- Add a new item to the queue (newitem.Addtoqueue())
- Remove item from the queue using Popfromqueue class method.

Remember to remove the item only from the head of the queue.

Submit: ***queue.py*** (30 points)

4) Create a github account using your free NC State github access. Create a new public repository and name it Project 4. Upload all the python files you created for this project and upload it to your Project 4 repository. (10 points)

General Notes:

- Add exception handling for every function you write.
- Make sure to test your code with all possible input types.
- Submit a word document or text file with a link to your public github repository.