Introduction to Python: Lists, Arrays, and Dataframes

Lists

List A = [65,45,10,85,45,1]

List B = [4 ,2,10,1,7,2]

1. Write a Python program to sum all the items in a list A.
2. Write a Python program to find the first instance of 2 in list B
3. Write a Python program to replace the first instance of 2 in list B with 100
4. Write a Python program to multiplies all the items in a list A.
5. Write a Python program to get the largest number from a list A.
6. Write a Python program to get the smallest number from a list A.
7. Write a Python program to get a list, sorted in increasing order
8. Write a Python program to remove duplicates from a list A.
9. Write a Python program to check a list is empty or not.
10. Write a Python program to combine list A and list B.
11. Write a Python program to add 7 to list B

Arrays

A = [[8,41,166,42],[55,28,16,2],[0,0,1,12],[25,65,24,19]

B = [[1,21,6],[5,17,9],[31,1,7]]

C = [[4],[22],[16],[160]]

1. Write a python program to convert the list in section A to arrays
2. Write a python program to delete the 3rd col of A
3. Write a python program to insert a row of ones into the the 4th column of B
4. Write a python program to remove the last row of C
5. Write a python program to create a 3D matrix using the new A and new B into an array G
6. Write a python program to find all instances of 1 in A
7. Write a python program to replace all instances of 1 in array G
8. Write a python program to add 15 to every element in G
9. Write a python program to divide G by 5
10. Write a python program to flatten or reshape A
11. Write a python program to create a array of 0s that has the same shape as A
12. Write a python program to create a array of 1s that has the same shape as B
13. Write a python program to get the unique values in B

DataFrames

Make the following DataFrame

 {'X':[78,85,96,80,86], 'Y':[84,94,89,83,86],'Z':[86,97,96,72,83]}

1. Write a python program to extract all values from the DataFrame above
2. Write a python program to extract all columns of the DataFrame above
3. Write a python program to extract the first 3 rows of the DataFrame above
4. Write a python program to create a new DataFrame with a header of NEW, that has all the data from all three columns
5. Write a python program to find all instances of 86 in the DataFrame above
6. Write a python program to replace all instances of 86 in the DataFrame above with 0
7. Write a python program to Delete Z from the DataFrame above
8. Write a python program to convert all the arrays and lists above to DataFrames, give each column a header