**Python Programming Basic Assignment-22**

**Question1**

Create a function that takes three parameters where:

• x is the start of the range (inclusive).

• y is the end of the range (inclusive).

• n is the divisor to be checked against.

Return an ordered list with numbers in the range that are divisible by the third parameter n. Return an empty list if there are no numbers that are divisible by n.

Examples

list\_operation(1, 10, 3) ➞ [3, 6, 9]

list\_operation(7, 9, 2) ➞ [8]

list\_operation(15, 20, 7) ➞ []

In [3]:

**def** list\_operation(x,y,n):

ordered\_list**=**[]

**for** i **in** range(x,y):

**if** i**%n**==0:

ordered\_list**.**append(i)

**return** ordered\_list

In [4]:

list\_operation(1, 10, 3)

Out[4]:

[3, 6, 9]

In [6]:

list\_operation(7, 9, 2)

Out[6]:

[8]

In [5]:

list\_operation(15, 20, 7)

Out[5]:

[]

**Question2**

Create a function that takes in two lists and returns True if the second list follows the first list by one element, and False otherwise. In other words, determine if the second list is the first list shifted to the right by 1.

Examples

simon\_says([1, 2], [5, 1]) ➞ True

simon\_says([1, 2], [5, 5]) ➞ False

simon\_says([1, 2, 3, 4, 5], [0, 1, 2, 3, 4]) ➞ True

simon\_says([1, 2, 3, 4, 5], [5, 5, 1, 2, 3]) ➞ False

Notes

• Both input lists will be of the same length, and will have a minimum length of 2.

• The values of the 0-indexed element in the second list and the n-1th indexed element in the first list do not matter.

In [211]:

**def** simon\_says(l1,l2):

new\_list**=**[]

**if** len(l1)**==**len(l2):

**if** (len(l1)**>=**2) **and** (len(l2)**>=**2):

**for** i,j **in** zip(l1[1:len(l1)],l2[1:]):

**if** i**==**j**+**1:

new\_list**.**append(**True**)

**else**:

new\_list**.**append(**False**)

**if** **False** **in** new\_list:

**return** **False**

**return** **True**

In [216]:

simon\_says([1, 2], [5, 1])

Out[216]:

True

In [217]:

simon\_says([1, 2], [5, 5])

Out[217]:

False

In [212]:

simon\_says([1, 2, 3, 4, 5], [0, 1, 2, 3, 4])

Out[212]:

True

In [213]:

simon\_says([1, 2, 3, 4, 5], [5, 5, 1, 2, 3])

Out[213]:

False

**Question3**

A group of friends have decided to start a secret society. The name will be the first letter of each of their names, sorted in alphabetical order.

Create a function that takes in a list of names and returns the name of the secret society.

Examples

society\_name(["Adam", "Sarah", "Malcolm"]) ➞ "AMS"

society\_name(["Harry", "Newt", "Luna", "Cho"]) ➞ "CHLN"

society\_name(["Phoebe", "Chandler", "Rachel", "Ross", "Monica", "Joey"])

In [112]:

**def** society\_name(l\_name):

name**=**''

**for** i **in** l\_name:

name**=**name**+**i[0]

**return** ''**.**join(sorted(name))

In [113]:

society\_name(["Adam", "Sarah", "Malcolm"])

Out[113]:

'AMS'

In [114]:

society\_name(["Harry", "Newt", "Luna", "Cho"])

Out[114]:

'CHLN'

In [115]:

society\_name(["Phoebe", "Chandler", "Rachel", "Ross", "Monica", "Joey"])

Out[115]:

'CJMPRR'

**Question4**

An isogram is a word that has no duplicate letters. Create a function that takes a string and returns either True or False depending on whether or not it's an "isogram".

Examples

is\_isogram("Algorism") ➞ True

is\_isogram("PasSword") ➞ False

**Not case sensitive.**

is\_isogram("Consecutive") ➞ False

Notes

• Ignore letter case (should not be case sensitive).

• All test cases contain valid one word strings.

In [183]:

**def** is\_isogram(word):

word\_**=**word**.**lower()

string1**=**word\_

string2**=**set(word\_)

**if** len(string1)**==**len(string2):

**return** **True**

**return** **False**

In [184]:

is\_isogram("Algorism")

Out[184]:

True

In [185]:

is\_isogram("PasSword")

Out[185]:

False

In [186]:

is\_isogram("Consecutive")

Out[186]:

False

**Question5**

Create a function that takes a string and returns True or False, depending on whether the characters are in order or not.

Examples

is\_in\_order("abc") ➞ True

is\_in\_order("edabit") ➞ False

is\_in\_order("123") ➞ True

is\_in\_order("xyzz") ➞ True

Notes

You don't have to handle empty strings.

In [187]:

**def** is\_in\_order(word):

**if** len(word)**!=**0:

**if** word**==**''**.**join(sorted(word)):

**return** **True**

**return** **False**

In [188]:

is\_in\_order("abc")

Out[188]:

True

In [189]:

is\_in\_order("edabit")

Out[189]:

False

In [190]:

is\_in\_order("123")

Out[190]:

True

In [191]:

is\_in\_order("xyzz")

Out[191]:

True

In [ ]: