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) ➞ []

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.

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"])

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.

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.

Solutions :

#### 1.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 [5]:

**def** list\_operation(start,end,divisor):

out\_list **=** []

**for** ele **in** range(start,end**+**1):

**if** ele**%divisor** == 0:

out\_list**.**append(ele)

print(f'Output: ➞ {out\_list}')

list\_operation(1, 10, 3)

list\_operation(7, 9, 2)

list\_operation(15, 20, 7)

Output: ➞ [3, 6, 9]

Output: ➞ [8]

Output: ➞ []

#### 2.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:**  
1. Both input lists will be of the same length, and will have a minimum length of 2.  
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 [59]:

**def** simon\_says(in\_list\_1,in\_list\_2):

**if** len(in\_list\_1) **==** len(in\_list\_1) **and** len(in\_list\_1) **>=**2 **and** len(in\_list\_1) **>=**2:

**if**(in\_list\_1[:**-**1] **==** in\_list\_2[1:]):

print(f'{in\_list\_1,in\_list\_2} ➞ {**True**}')

**else**:

print(f'{in\_list\_1,in\_list\_2} ➞ {**False**}')

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

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

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

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

([1, 2], [5, 1]) ➞ True

([1, 2], [5, 5]) ➞ False

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

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

#### 3.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 a 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 [18]:

**def** society\_name(in\_list):

out\_string **=** []

**for** ele **in** in\_list:

out\_string**.**append(ele[0])

output **=** ''**.**join(sorted(out\_string))

print(f'{in\_list} ➞ {output}')

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

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

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

['Adam', 'Sarah', 'Malcolm'] ➞ AMS

['Harry', 'Newt', 'Luna', 'Cho'] ➞ CHLN

['Phoebe', 'Chandler', 'Rachel', 'Ross', 'Monica', 'Joey'] ➞ CJMPRR

#### 4.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 [27]:

**def** is\_isogram(in\_string):

lower\_in\_string **=** in\_string**.**lower()

**if** len(lower\_in\_string) **==** len(set(lower\_in\_string)):

print(f'{in\_string} ➞ {**True**}')

**else**:

print(f'{in\_string} ➞ {**False**}')

is\_isogram("Algorism")

is\_isogram("PasSword")

is\_isogram("Consecutive")

Algorism ➞ True

PasSword ➞ False

Consecutive ➞ False

#### 5.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 [38]:

**def** is\_in\_order(in\_string):

in\_string\_sorted **=** ''**.**join(sorted(in\_string))

**if** in\_string **==** in\_string\_sorted:

print(f'{in\_string} ➞ {**True**}')

**else**:

print(f'{in\_string} ➞ {**False**}')

is\_in\_order("abc")

is\_in\_order("edabit")

is\_in\_order("123")

is\_in\_order("xyzz")

abc ➞ True

edabit ➞ False

123 ➞ True

xyzz ➞ True