## Week 10: Problem Set

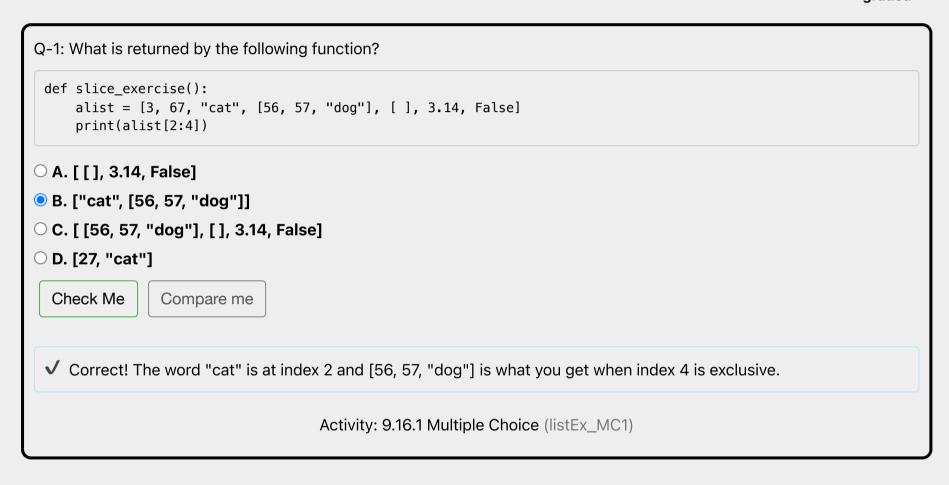
Due: 2023-03-31 23:59:00

Description:

You have marked this assignment Finished. Click to mark it In Progress

## **Questions**

Not yet graded



Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/Exercises.html#listEx\_MC1)

Not yet graded

```
Q-2: What is returned by the following function?

def len_of_list():
    alist = [3, 67, "cat", 3.14, False]
    return len(alist)

A. 4

B. 5

C. False

D. 3.14

Check Me Compare me

✓ Correct! There are 5 items in this list.

Activity: 9.16.2 Multiple Choice (listEx_MC2)
```

Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/Exercises.html#listEx\_MC2)

```
Q-3: What is returned by the following function?

def indexing_and_upper():
    alist = [3, 67, "cat", [56, 57, "dog"], [], 3.14, False]
    return alist[2].upper()

A. Error, you cannot use the upper method on a list.

B. 2

C. CAT

D. FALSE

Check Me Compare me

✓ Correct! The string cat is upper cased to become CAT.

Activity: 9.16.3 Multiple Choice (listEx_MC3)
```

Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/Exercises.html#listEx\_MC3)

Not yet graded

```
Q-4: What is returned by the following function?

def list_within_list():
    alist = [3, 67, "cat", [56, 57, "dog"], [], 3.14, False]
    return alist[2][0]

○ A. 56

⑤ B. c

○ C. cat

○ D. Error, you cannot have two index values unless you are using slicing.

Check Me Compare me

✓ Yes, the first character of the string at index 2 is c

Activity: 9.16.4 Multiple Choice (listEx_MC4)
```

Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/Exercises.html#listEx\_MC4)

```
Q-5: What is returned by the following function?

def list_transformation():
    alist = [4, 2, 8, 6, 5]
    blist = [alist] * 2
    alist[3] = 999
    return blist

A. [4, 2, 8, 999, 5, 4, 2, 8, 999, 5]

B. [[4, 2, 8, 999, 5], [4, 2, 8, 999, 5]]

C. [4, 2, 8, 6, 5]

D. [[4, 2, 8, 999, 5], [4, 2, 8, 6, 5]]

Check Me Compare me
```

✓ Yes, blist contains two references, both to alist.

Activity: 9.16.5 Multiple Choice (listEx\_MC5)

Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/Exercises.html#listEx\_MC5)

Not yet graded

```
Q-6: What is returned by the following function?

def list_transformation():
    alist = [4, 2, 8, 6, 5]
    blist = []
    for item in alist:
        blist.append(item+5)
    return blist

○ A. [4, 2, 8, 6, 5]
    ⊕ E. [4, 2, 8, 6, 5, 5]
    ⊕ C. [9, 7, 13, 11, 10]
    ○ D. Error, you cannot concatenate inside an append.

Check Me Compare me

✓ Yes, the for loop processes each item of the list. 5 is added before it is appended to blist.

Activity: 9.16.6 Multiple Choice (listEx_MC6)
```

Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/Exercises.html#listEx\_MC6)

Not yet graded

Q-7: Which method would you use to figure out the position of an item in a list?

○ A. .pop()

○ B. .insert()

○ C. .count()

○ D. .index()

Check Me Compare me

✓ Yes, index will return the position of the first occurrence of an item.

Activity: 9.16.7 Multiple Choice (listEx\_MC7)

Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/Exercises.html#listEx\_MC7)

Not yet graded

Q-8: Which method is best to use when adding an item to the end of a list?

```
A. .insert()
B. .pop()
C. .append()
D. .remove()
Check Me Compare me
✓ Yes, though you can use insert to do the same thing, you don't need to provide the position.
Activity: 9.16.8 Multiple Choice (listEx_MC8)
```

Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/Exercises.html#listEx\_MC8)

Not yet graded

```
Q-9: Given that we want to accumulate the total sum of a list of numbers, which of the following accumulator patterns
would be appropriate?
  1.
 def find_sum():
     nums = [4, 5, 2, 93, 3, 5]
     s = 0
     for n in nums:
         s = s + 1
     return s
  2.
 def find_sum():
     nums = [4, 5, 2, 93, 3, 5]
     s = 0
     for n in nums:
         s = n + n
     return s
  3.
 def find_sum():
     nums = [4, 5, 2, 93, 3, 5]
     s = 0
     for n in nums:
         s = s + n
     return s
○ A. I.
○ B. II.
OC. III.
On D. none of the above would be appropriate for the problem.
  Check Me
                 Compare me

✓ Yes, this will solve the problem.

                                     Activity: 9.16.9 Multiple Choice (listEx_MC9)
```

Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/Exercises.html#listEx\_MC9)

p9-10: Given that we want to accumulate the total number of strings in the list, which of the following accumulator patterns would be appropriate?

1.

```
def num_of_strings():
    lst = ['plan', 'answer', 5, 9.29, 'order, items', [4]]
    s = 0
    for n in lst:
        s = s + n
    return s
```

2.

```
def num_of_strings():
    lst = ['plan', 'answer', 5, 9.29, 'order, items', [4]]
    for item in lst:
        s = 0
        if type(item) == type("string"):
              s = s + 1
    return s
```

3.

```
def num_of_strings():
    lst = ['plan', 'answer', 5, 9.29, 'order, items', [4]]
    s = ""
    for n in lst:
        s = s + n
    return s
```

4.

```
def num_of_strings():
    lst = ['plan', 'answer', 5, 9.29, 'order, items', [4]]
    s = 0
    for item in lst:
        if type(item) == type("string"):
            s = s + 1
    return s
```

- O A. 1.
- B. 2.
- O C. 3.
- O D. 4.
- E. none of the above would be appropriate for the problem.

Check Me

Compare me

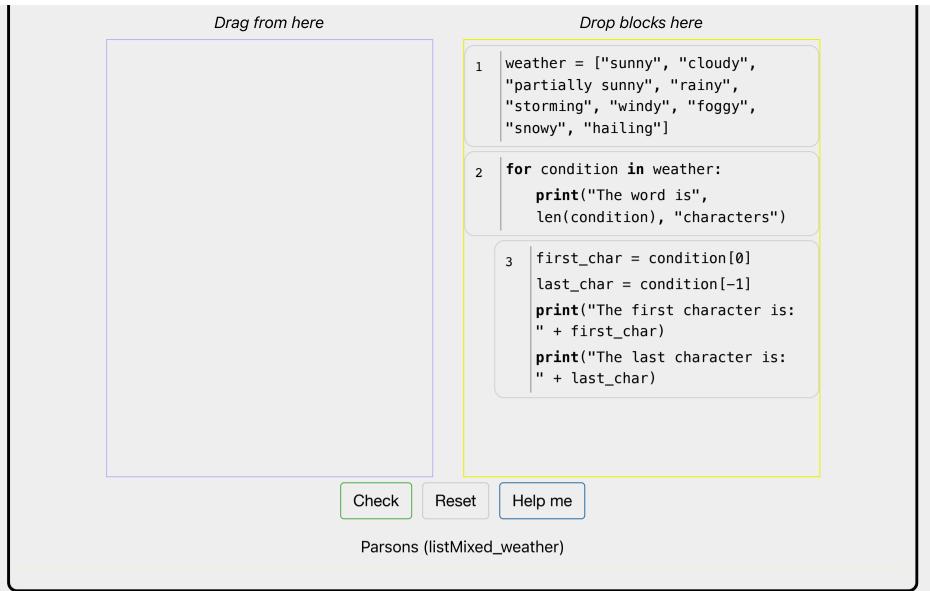
✓ Yes, this will solve the problem.

Activity: 9.16.10 Multiple Choice (assess\_question5\_2\_1\_2)

Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/Exercises.html#assess\_question5\_2\_1\_2)

Not yet graded

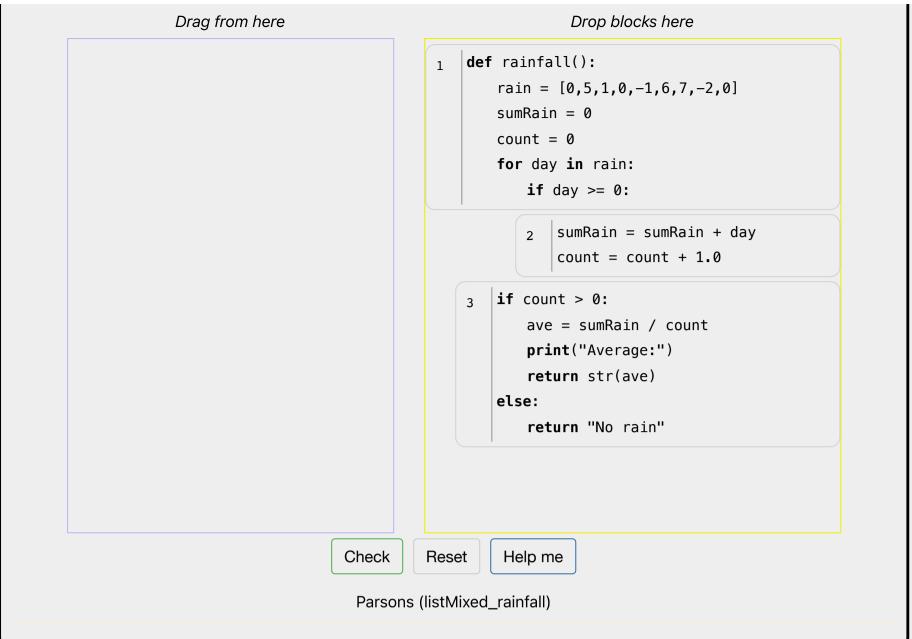
Write a program that will print out the length of each item in the list as well as the first and last characters of the item. Watch out for extra code blocks and indentation!



Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/MixedupCode.html#listMixed\_weather)

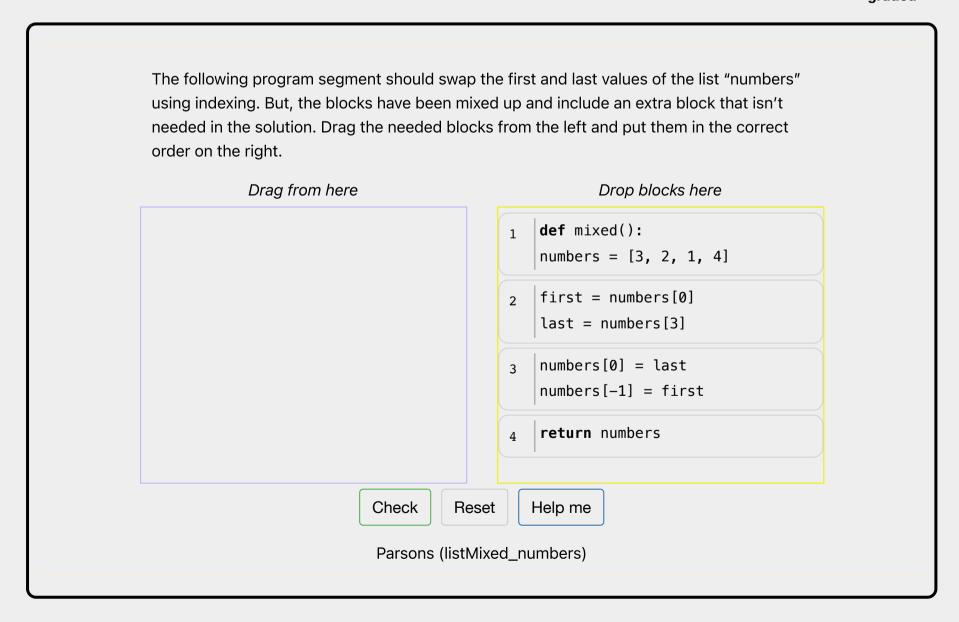
Not yet graded

Let's imagine that you have a list that contains amounts of rainfall for each day, collected by a meteorologist. Her rain gathering equipment occasionally makes a mistake and reports a negative amount for that day. We have to ignore those. We need to write a program to (a) calculate the total rainfall by adding up all the positive integers (and only the positive integers), (b) count the number of positive integers (we will count with "1.0" so that our average can have a decimal point), and (c) print out the average rainfall at the end. Only print the average if there was some rainfall, otherwise print "No rain". Construct a program that correctly solves the rainfall problem. Watch out for extra code blocks and indentation!

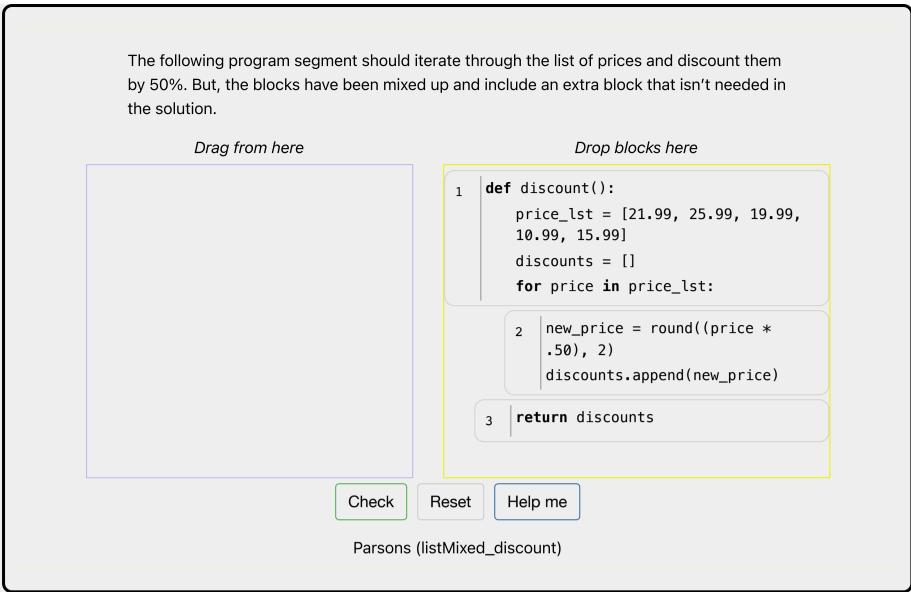


Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/MixedupCode.html#listMixed\_rainfall)

Not yet graded



Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/MixedupCode.html#listMixed\_numbers)



Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/MixedupCode.html#listMixed\_discount)

Not yet graded

```
The following program segment should first replace the last item of the list <i>months</i>
with "November" then append "December" to the end of the list. But, the blocks have been
mixed up and include extra blocks that aren't needed in the solution.
          Drag from here
                                                         Drop blocks here
 months[-1] = "December"
                                                def mixed_months():
                                                    months = ["January", "March",
                                                    "June", "August", "October"]
                                                    new_month = "November"
                                                   months[4] = new_month
                                                3
                                                    months.append("December")
                                                    return months
                                                5
                            Check
                                       Reset
                                                 Help me
                             Parsons (listMixed_months)
```

Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/MixedupCode.html#listMixed\_months)

Write a function add\_to\_new\_list that takes in a list of strings, lst, as a parameter and creates a new list with the length of lst and the first element of lst three times. For example, add\_to\_new\_list(["1","2","3"]) would return [3, '111'].

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```
1 def add_to_new_list(lst):
2    new_list = []
3    new_list.append(len(lst))
4    new_list.append(lst[0] * 3)
5    return new_list
6
7
8
```

Result	Actual Value	<b>Expected Value</b>	Notes
Pass	[3, '111']	[3, '111']	add_to_new_list(['1','2','3'])
Pass	[4, '000']	[4, '000']	add_to_new_list(['0','0','0','0'])
Pass	[4, '0.2']	[4, '0.2']	add_to_new_list(['10.2','0.0','100','-2'])

**Expand Differences** 

You passed: 100.0% of the tests

Activity: 9.18.1 ActiveCode (list\_writeMyListq)

Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/WriteCode.html#list\_writeMyListq)

Not yet graded

Write a function add\_to\_new\_list that takes in a list of strings, lst, as a parameter and creates a new list with the length of lst and the first element of lst three times. For example, add\_to\_new\_list(["1","2","3"]) would return [3, '111'].

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```
4/19/2023, 8:12:02 PM - 2 of 2

1 def add_to_new_list(lst):
    new_list = []
    new_list.append(len(lst))
4    new_list.append(lst[0] * 3)
5    return new_list
6
7
8
9
```

Result	<b>Actual Value</b>	<b>Expected Value</b>	Notes
Pass	ass [3, '111'] [3, '111'] add_to_new_list(['1','2','3']		add_to_new_list(['1','2','3'])
Pass	[4, '000']	[4, '000']	add_to_new_list(['0','0','0','0'])
Pass	[4, '0.2']	[4, '0.2']	add_to_new_list(['10.2','0.0','100','-2'])

**Expand Differences** 

You passed: 100.0% of the tests

## Activity: 9.18.2 ActiveCode (list\_writeMyListA)

Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/WriteCode.html#list\_writeMyListA)

Not yet graded

Write a function average that takes in a list of integers, aList, as a parameter and returns the average of all of the integers, rounded to one decimal place. For example, average([99, 100, 74, 63, 100, 100]) would return 89.3.

```
Save & Run

4/19/2023, 8:12:18 PM - 3 of 3

1 def average(aList):
2    sum = 0
3    for num in aList:
4        sum += num
5    avg = round(sum / len(aList),2)
6    return avg
7
```

Result	Actual Value	<b>Expected Value</b>	Notes
Pass	89.33	89.3	average([99, 100, 74, 63, 100, 100])
Pass	400.04	400.0	average([0, 2, -3, 1.2, 2000])
Pass	-2.0	-2.0	average([-2])

You passed: 100.0% of the tests

Activity: 9.18.3 ActiveCode (list\_writeAvgq)

Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/WriteCode.html#list\_writeAvgq)

Not yet graded

Write a function average that takes in a list of integers, aList, as a parameter and returns the average of all of the integers, rounded to one decimal place. For example, average([99, 100, 74, 63, 100, 100]) would return 89.33.

Save & Run

Original - 1 of 1

```
Original - 1 of 1

1 def average(aList):
2    sum = 0
3    for num in aList:
4        sum += num
5    avg = round(sum / len(aList),2)
6    return avg
7
8
```

Result	<b>Actual Value</b>	<b>Expected Value</b>	Notes
Pass	89.33	89.3	average([99, 100, 74, 63, 100, 100])
Pass	400.04	400.0	average([0, 2, -3, 1.2, 2000])

Pass -2.0 -2.0 average([-2])

You passed: 100.0% of the tests

Activity: 9.18.4 ActiveCode (list\_writeAvgA)

Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/WriteCode.html#list\_writeAvgA)

Not yet graded

Write the function change\_index3 that takes in one parameter, lst, and assigns the value at index 3 of lst to '200' and then returns lst. For example, change\_index3(['hi', 'goodbye', 'python', '106', '506']) would return ['hi', 'goodbye', 'python', '200', '506'] and change\_index3([1, 2, 0, -5, 4]) would return [1, 2, 0, '200', 4].

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```
1 def change_index3(lst):
   # if the length of the list is less than 4 then that means it doesn't have index 3 (be
   # in this case just simply return the list
 3
    if len(lst) < 4:
 4
      return lst
 5
 6
 7
   # if list has at least 4 elements then we do have the third index available
    # hence access the 3rd index like lst[index] and assign the value '200' to it using the
 9
    lst[3] = '200'
10
   # returning the updated list
11
    return lst
12
13
14
15
```

Result	Actual Value	<b>Expected Value</b>	Notes	
Pass	['hi'506']	['hi'506']	change_index3(['hi', 'goodbye', 'python', '106', '506'])	Expand Differences
Pass	[1, 2', 4]	[1, 2', 4]	change_index3([1, 2, 0, -5, 4])	Expand Differences
Pass	[Fals, -4]	[Fals, -4]	change_index3([False, '2', 2.5, '200', -4]	Expand Differences

You passed: 100.0% of the tests

Activity: 9.18.6 ActiveCode (list\_write23q)

Question in Context (/ns/books/published/cmsc-210-spring-2023/lists/WriteCode.html#list\_write23q)

You have marked this assignment Finished. Click to mark it In Progress

This assignment is graded and is no longer accepting submissions. You can still do the work, but it is up to your instructor whether they will accept it or not.

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