Week 10: Problem Set

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

Description: Self Grade: 0 of 20 = 0.0%

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

Questions

Not yet graded

Q-1: What is returned by the following function?

```
def slice_exercise():
    alist = [3, 67, "cat", [56, 57, "dog"], [ ], 3.14, False]
    print(alist[2:4])
```

- A. [[ ], 3.14, False]
- B. ["cat", [56, 57, "dog"]]
- C. [[56, 57, "dog"], [ ], 3.14, False]
- D. [27, "cat"]

Check Me Compare me

✓ Correct! The word "cat" is at index 2 and [56, 57, "dog"] is what you get when index 4 is exclusive.

Activity: 9.16.1 Multiple Choice (listEx_MC1)

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)

Not yet graded

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**
- ◉ **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)

Not yet graded

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]**
- ○ **B. [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.
- C. III.
- 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)

Not yet graded

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
```

- A. 1.
- B. 2.
- C. 3.
- 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!

Drag from here

Drop blocks here

```
weather = ["sunny", "cloudy",
"partially sunny", "rainy",
"storming", "windy", "foggy",
"snowy", "hailing"]
```

```
for condition in weather:
    print("The word is",
    len(condition), "characters")
```

```
first_char = condition[0]
last_char = condition[-1]
print("The first character is:
" + first_char)
print("The last character is:
" + last_char)
```

Check Reset Help me

Parsons (listMixed_weather)

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!

Drag from here

Drop blocks here

```
def rainfall():
    rain = [0,5,1,0,-1,6,7,-2,0]
    sumRain = 0
    count = 0
    for day in rain:
        if day >= 0:
```

```
    sumRain = sumRain + day
    count = count + 1.0
```

```
if count > 0:
    ave = sumRain / count
    print("Average:")
    return str(ave)
else:
    return "No rain"
```

Check Reset Help me

Parsons (listMixed_rainfall)

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

Not yet graded

The following program segment should swap the first and last values of the list “numbers” using indexing. But, the blocks have been mixed up and include an extra block that isn’t needed in the solution. Drag the needed blocks from the left and put them in the correct order on the right.

Drag from here

Drop blocks here

```
def mixed():
numbers = [3, 2, 1, 4]
```

```
first = numbers[0]
last = numbers[3]
```

```
numbers[0] = last
numbers[-1] = first
```

```
return numbers
```

Check Reset Help me

Parsons (listMixed_numbers)

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

Not yet graded

The following program segment should iterate through the list of prices and discount them by 50%. But, the blocks have been mixed up and include an extra block that isn't needed in the solution.

Drag from here

Drop blocks here

```
def discount():
    price_lst = [21.99, 25.99, 19.99, 10.99, 15.99]
    discounts = []
    for price in price_lst:
        new_price = round((price * .50), 2)
        discounts.append(new_price)
    return discounts
```

Check Reset Help me

Parsons (listMixed_discount)

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 months 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

```
months[-1] = "December"
```

Drop blocks here

```
def mixed_months():
    months = ["January", "March", "June", "August", "October"]
    new_month = "November"
    months[4] = new_month
    months.append("December")
    return months
```

Check Reset Help me

Parsons (listMixed_months)

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

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']`.

Save & Run

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Show in CodeLens

```
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	Expected Value	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']`.

Save & Run

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

Show in CodeLens

```
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
9
```

Result	Actual Value	Expected Value	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: 9.18.2 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 | Show in CodeLens

```
def average(aList):
    sum = 0
    for num in aList:
        sum += num
    avg = round(sum / len(aList),2)
    return avg

```

Result	Actual Value	Expected Value	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 | Show in CodeLens

```
def average(aList):
    sum = 0
    for num in aList:
        sum += num
    avg = round(sum / len(aList),2)
    return avg

```

Result	Actual Value	Expected Value	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]`.

Save & Run | 4/19/2023, 8:14:11 PM - 2 of 2 | Show in CodeLens

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

Result	Actual Value	Expected Value	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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