Week: 05 Date: 02/15/2024

| 15-110 Recitation Week 5 |
| --- |

**Reminders**

* [Recitation Feedback Form](https://forms.gle/dWgvmGvTSMbRi7rv5)
* Check 3 due Monday 2/19 @ Noon
* Check 2 and HW 2 revisions due 2/20 @ Noon
* Exam on 2/21
	+ Review Sessions
	+ Small Groups!
	+ Also OH and Piazza are always there if you need individual help!

**Overview**

* List methods
* Recursion
* Aliasing
* Recursion (code writing)

| Problems |
| --- |

# **LIST CODE WRITING: REMOVE MATCHES**

Write a function removeMatches(L, matchList) that takes in a list of numbers L, and removes all of the elements in L that are also in matchList.Write this function both destructively and non-destructively

For example, removeMatches([1,2,3,4,5],[1,5,10,15]) should return [2,3,4] and L = [1,2,3,4,5]

And destructiveRemoveMatches(L,[1,5,10,15]) returns none, but L = [2,3,4]

Destructive: Non-Destructive:

|  |  |
| --- | --- |

# **RECURSION INTRO**

General notes on recursion:

|  |
| --- |

Recreate the following function using recursion (write on the right empty space):

| def double(lst):  result = [] for i in range(len(lst)): result.append(2 \* lst[i]) return result#double([1,2,3]) -> [2,4,6] |   |
| --- | --- |

# **LIST ALIASING**

Code trace and compare the following two options for ways to create “empty” 2D lists:

Option 1:

inner = [0, 0, 0, 0]
outer = [inner, inner, inner]

Option 2:

| rows = 3outer = []for row in range(rows): outer.append([0, 0, 0, 0])  |
| --- |

**For each option**, after running the code above, what are the values in outer?

Option 1: outer =

Option 2: outer =

After adding the following line of code and running it:

outer[0][0] = 42

What are the values in outer?

Option 1: outer =

Option 2: outer =

Be sure you can explain what difference you are seeing, and which option you should use and why.

#

# **RECURSIVE CODE WRITING**

Write the function sumOddMToN(m, n) that takes two integers and recursively calculates the sum of all odd integers between m and n, **not including n**. You are guaranteed that m > 0 and n > 0, and m < n.

Example: sumOddMToN(3,10) should return 24, as 3+5+7+9=24, while sumOddMToN(2,7) should return 8 as 3+5=8 (7 is not inclusive).

|  |
| --- |