# Lab 4.04 - Shopping Lists

## Part 1

The goal of this lab is to practice using and accessing items from lists of lists.

You have a few errands to run and have created a few shopping lists to help you remember what to buy. You stored your notes in a nested list, shopping\_cart. This program will allow the user to ask for a specific item by its index or update what items are in the cart. The user can request to view list to see the items in a specific shopping list.

### Shopping Lists

shopping\_lists = [  
 ['toothpaste', 'q-tips', 'milk'],  
 ['milk', 'candy', 'apples'],  
 ['planner', 'pencils', 'q-tips']  
 ]

### User Inputs

1 - Update

* The program asks which shopping list the user wants to update, which position it should update, and the new value to update.

2 - View Item

* The program asks which shopping list the item is on and which position it occupies, then prints the item’s name.

3 - View List

* The program asks which shopping list the user wants and prints all of the items associated with that shopping list.

### Functions

update\_list

* Takes in an integer representing the index of the shopping list, an integer representing the index of the item to update, and a string representing the new value for that item. Does not alter the length of the list.

print\_item

* Takes an int representing the index of the shopping list followed by an int representing the index of the item to print.

print\_list

* Takes an int representing the index of the shopping list to print.
* Feel free to add more functions as you see fit.

### Example

>>> Choose 1 = update item, 2 = view item, or 3 = view list: 1  
 Which shopping list would you like to update? 1  
 Which item would you like to change? 2  
 New value for item #2? cheese  
 toothpaste, cheese, milk  
 >>> Choose 1 = update item, 2 = view item, or 3 = view list: 2  
 Which shopping list do you want to choose? 2  
 Which item on list #2 do you want to see? 3  
 apples  
 >>> Choose 1 = update item, 2 = view item, or 3 = view list: 3  
 Which shopping list would you like to see? 3  
 planner, pencils, q-tips

## Part 2

In this part of the lab you will go through your shopping list program and perform a few different calculations.

1. Create a function, all\_in\_one, that will put all the shopping lists into a single combined list using a for loop.
2. Create a function, count\_q\_tips, which will go through all items of the list and keep a count of how many times 'q-tips' occurs.
3. In order to make the shopping lists more calcium rich, write a function, drink\_more\_milk, that adds 'milk' to each of the lists (unless it’s already there).
4. You can’t have milk without cookies. Write a function if\_you\_give\_a\_moose\_a\_cookie, that will go through every element of shopping\_cart and update 'milk' to be 'milk and cookies'.

## Bonus

Write a function to reverse the order of the lists, and also reverse the order of the items in each list, in the shopping\_cart nested list.

The new reversed list should look like the following when printed (newlines and spacing added for clarity):

shopping\_cart = [  
 ['q-tips', 'pencils', 'planner'],  
 ['apples', 'candy', 'milk'],  
 ['milk', 'q-tips', 'tooth paste']  
 ]

### Tip

* Last item can be gotten by my\_list[-1]
* Second to last element: my\_list[-2]
* Third to last element: my\_list[-3]