

CS 112 Assignment 9a

Submit your finished code to the Dropbox. You will need to pass off the assignments with the TA or tutor during their office hours (their information is in the CS 112 Course Information section of the Table of Contents), or the instructor in class. Follow the formatting guide which is also found in the CS 112 Course Information section.

Read the instructions carefully. Make sure your output matches the example run.

Objectives:

In this assignment you will learn how to do the following:

- Use list methods such as:
 - `append()`
 - `remove()`
 - `sort()`
- Gain a further understanding of mutable and immutable data types
- Extend code written by someone else

Program: Multi-function shopping list

For this assignment you will need to download the file “Assignment 9a-Starter Code.py”. You will find this file with Assignment 9a (this document) in your Assignment 9a dropbox.

Assignment 9a-Starter Code.py contains code written by another person. You must extend this code with your own without changing any of the existing code in the Assignment 9a-Starter Code.py file. Be sure to update the header with your team’s information and rename the file to match your own program file naming convention.

As you can see from the menu provided in the Assignment 9a-Starter Code.py file, a user will be able to Add, Delete, View and Sort a list of items. You will write a separate function for each of these menu choices. The user will also be able to exit the program.

Extend the `main()` function to evaluate the users input and either call the appropriate function or exit.

Write a function called **`add_Items()`** that allows a user to add as many items as they desire to the shopping list. Give the user a message each time an item was successfully added to the list (see example run). The user will indicate they are done adding items by simply hitting the ‘enter’ key without typing an item name. Return the number of items added to the list back to `main()` and print out a message to the user (see example run) in `main()` indicating the number of items added.

Write a function called **`delete_Items()`** that allows a user to delete as many items as they desire from the shopping list. The user will indicate they are done deleting items by simply hitting the ‘enter’ key without typing an item name. Give the user a message each time an item was successfully added to the list (see example run). Print an error message if the user tries to delete an item that does not exist and CALL THE FUNCTION `show_Items()` (see below) to show them the list of available items that can be deleted from the list (see example run). Return

the number of items deleted from the list back to main() and print out a message to the user (see example run) in main() indicating the number of items deleted.

Write a function called **show_Items()** that displays all the items in the list (see example run).

Write a function called **sort_Items()** that sorts the list, displays a message to the user indicating the list has been sorted and CALLS THE FUNCTION show_Items to print the list (see example run).

Allow the user to exit the program.

Key program requirements:

- Create all functions described in the assignment.
- Ensure that you return the appropriate data as indicated in the assignment
- Ensure that you print the messages from the appropriate functions or from main() as indicated in the assignment.
- Do not change the code given to you in Assignment 9a-Starter Code.py.
- Failure to pass arguments correctly or return data as indicated in the assignment will greatly affect your score regardless of pass off.
- Use of global variables is NOT allowed.

Example run on next page.

Example Run

1. Add Items
2. Delete Items
3. Show Items
4. Sort Items
5. Exit

Please enter a command: 1

Add an item to the list (or just hit 'enter' when done): Eggs
"Eggs" has been added to the list.

Add an item to the list (or just hit 'enter' when done): Oranges
"Oranges" has been added to the list.

Add an item to the list (or just hit 'enter' when done): Apples
"Apples" has been added to the list.

Add an item to the list (or just hit 'enter' when done): Ham
"Ham" has been added to the list.

Add an item to the list (or just hit 'enter' when done):
4 items have been added to your Shopping List.

1. Add Items
2. Delete Items
3. Show Items
4. Sort Items
5. Exit

Please enter a command: 3

The list contains the following items:
['Eggs', 'Oranges', 'Apples', 'Ham']

1. Add Items
2. Delete Items
3. Show Items
4. Sort Items
5. Exit

Please enter a command: 4

The list has been sorted.

The list contains the following items:
['Apples', 'Eggs', 'Ham', 'Oranges']

1. Add Items
2. Delete Items
3. Show Items
4. Sort Items
5. Exit

Please enter a command: 2

Delete an item from the list (or just hit 'enter' when done): meat

"meat" is not an item in the list. Please try again.

The list contains the following items:
['Apples', 'Eggs', 'Ham', 'Oranges']

Delete an item from the list (or just hit 'enter' when done): Eggs
"Eggs" has been removed from the list.

Delete an item from the list (or just hit 'enter' when done):
1 items have been deleted from your Shopping List.

1. Add Items
2. Delete Items
3. Show Items
4. Sort Items
5. Exit

Please enter a command: 5