

Midterm Lab Task 3

List Collections

Problem 1. Using the List Collection type. Create a program that will allow the user to perform the following functions: (add, update, search, delete, display, and sort) items in a list:

You are free to decide what data you will be storing in the list and name the list based on the type of data you wish to store.

[MENU OPTIONS]

- 1 – Add Items
- 2 – Search for an Item
- 3 – Remove an Item
- 4 – View all items (Sorted)
- 0 – Exit program

Pick one [0 to quit]: ____

Requirements:

1. The user can add items in the list until the user presses x to stop
2. The user should be able to perform **search** if an item exists – Display if found or not found and count the number of instance in the list.
3. The user should also be given the option to remove an item in the list – Display the Message "Item found and deleted" once deletion is performed – else display "item not found-deletion unsuccessful"
4. The user may also opt to view items in the list and display items sorted in Ascending order
5. The user may opt to exit the program by typing 0

Note: you are free to design the interface of the program, base on the Menu options shown.

CODE:

```

def menu():
    print("\n[ MENU OPTIONS ]")
    print("1 - Add Items")
    print("2 - Search for an Item")
    print("3 - Remove an Item")
    print("4 - view all items (Sorted)")
    print("0 - Exit program")

#usage
def main():
    items = []

    while True:
        menu()
        choice = input("\nPick one (0 to quit): ")

        if choice == "1":
            while True:
                item = input("Enter item to add (x to stop): ")
                if item.lower() == "x":
                    break
                items.append(item)
            print("Items added successfully!")

        elif choice == "2":
            search_item = input("Enter item to search: ")
            count = items.count(search_item)
            if count > 0:
                print(f'Item "{search_item}" found ({count} instance(s))')
            else:
                print(f'Item "{search_item}" not found')

        elif choice == "3":
            remove_item = input("Enter item to remove: ")
            if remove_item in items:
                items.remove(remove_item)
                print(f'Item "{remove_item}" found and deleted')
            else:
                print(f'Item "{remove_item}" not found - deletion unsuccessful')

```

```

        print("Items added successfully!")

    elif choice == "2":
        search_item = input("Enter item to search: ")
        count = items.count(search_item)
        if count > 0:
            print(f"Item '{search_item}' found ({count} instance(s))")
        else:
            print(f"Item '{search_item}' not found")

    elif choice == "3":
        remove_item = input("Enter item to remove: ")
        if remove_item in items:
            items.remove(remove_item)
            print(f"Item '{remove_item}' found and deleted")
        else:
            print(f"Item '{remove_item}' not found - deletion unsuccessful")

    elif choice == "4":
        if items:
            print("Items in the list (sorted):")
            for i in sorted(items):
                print("-", i)
        else:
            print("List is empty")

    elif choice == "0":
        print("Exiting program. Goodbye!")
        break

    else:
        print("Invalid choice. Try again.")

if __name__ == "__main__":
    main()

```

1st OUTPUT:

```
C:\Users\COMLAB\AppData\Local\Programs\Python\Python311\python.exe C:\Users\COMLAB\PycharmProjects\pythonProject\task3.py
```

```
[ MENU OPTIONS ]
1 - Add Items
2 - Search for an Item
3 - Remove an Item
4 - View all items (Sorted)
0 - Exit program

Pick one [0 to quit]: 1
Enter item to add (x to stop): Blueberry
Enter item to add (x to stop): Strawberry
Enter item to add (x to stop): Mulberry
Enter item to add (x to stop): x
Items added successfully!
```

```
[ MENU OPTIONS ]
1 - Add Items
2 - Search for an Item
3 - Remove an Item
4 - View all items (Sorted)
0 - Exit program
```

```
Pick one [0 to quit]: 2
Enter item to search: Blackberry
Item 'Blackberry' not found
```

```
[ MENU OPTIONS ]
1 - Add Items
2 - Search for an Item
3 - Remove an Item
4 - View all items (Sorted)
0 - Exit program
```

```
Pick one [0 to quit]: 0
Exiting program. Goodbye!
```

```
Process finished with exit code 0
```

2nd OUTPUT:

```
C:\Users\COMLAB\AppData\Local\Programs\Python\Python311\python.exe C:\Users\COMLAB\PycharmProjects\p
```

```
[ MENU OPTIONS ]
1 - Add Items
2 - Search for an Item
3 - Remove an Item
4 - View all items (Sorted)
0 - Exit program
```

```
Pick one [0 to quit]: 1
Enter item to add (x to stop): France
Enter item to add (x to stop): Germany
Enter item to add (x to stop): United Kingdom
Enter item to add (x to stop): Britain
Enter item to add (x to stop): x
Items added successfully!
```

```
[ MENU OPTIONS ]
1 - Add Items
2 - Search for an Item
3 - Remove an Item
4 - View all items (Sorted)
0 - Exit program
```

```
Pick one [0 to quit]: 4
Items in the list (sorted):
- Britain
- France
- Germany
- United Kingdom
```

```
[ MENU OPTIONS ]
1 - Add Items
2 - Search for an Item
3 - Remove an Item
4 - View all items (Sorted)
0 - Exit program
```

```
Pick one [0 to quit]: 3
Enter item to remove: France
Item 'France' found and deleted
```

```
[ MENU OPTIONS ]
1 - Add Items
2 - Search for an Item
3 - Remove an Item
4 - View all items (Sorted)
0 - Exit program
```

```
Pick one [0 to quit]: 4
Items in the list (sorted):
- Britain
- Germany
- United Kingdom
```

```
[ MENU OPTIONS ]
1 - Add Items
2 - Search for an Item
3 - Remove an Item
4 - View all items (Sorted)
0 - Exit program
```

```
Pick one [0 to quit]: 0
Exiting program. Goodbye!
```

```
Process finished with exit code 0
```