Assignment 4: Lists

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Source code:

```python
# Creating a empty array list named my_list and using for loop ask 5 user input and append to the list
my_list = []
for i in range(5):
    number = int(input("Please enter a number: "))
    my_list.append(number)
print("The elements inside the list are: ", my_list)

# Accessing first, second and third to fifth element of my_list
print("The second element in the list is: ", my_list[1])
print("The last element in the list is: ", my_list[-1])
print("The third to fifth element in the list are: ", my_list[2:5])

# Combime my_list with provided value of new_list
new_list = [7, 8, 9, 10]
combined_list = my_list + new_list
print("The new combined list is: ", combined_list)

# Check length of the combined list then append new item, then sort the list
print("The length of combined_list is: ", len(combined_list))
combined_list.append(11)
combined_list.sort()
print("The sorted combined list is: ", combined_list)

# Check the count of provided value inside the array list, the remove its first occurance from the list
occurance_7 = combined_list.count(7)
print("The occurrences of 7 in the combined list: ", occurance_7)
combined_list.remove(7)
print("The updated combined list after removing element 7 is: ", combined_list)

# Use list comprehension to create squared list where each element is squared of element in combined list
squared_list = [num ** 2 for num in combined_list]
print("The updated list with it's value squared is: ", squared_list)
```

Figure 1: Source code

Test case for list [10, 22, 8, 4, 32]:

assign4.py

```python
# Creating a empty array list named my_list and using for loop ask 5 user input and append to the list
my_list = []
for i in range(5):
    number = int(input("Please enter a number: "))
    my_list.append(number)
print("The elements inside the list are: ", my_list)

# Accessing first, second and third to fifth element of my_list
print("The second element in the list is: ", my_list[1])
print("The last element in the list is: ", my_list[-1])
print("The third to fifth element in the list are: ", my_list[2:5])

# Combime my_list with provided value of new_list
new_list = [7, 8, 9, 10]
combined_list = my_list + new_list
print("The new combined list is: ", combined_list)

# Check length of the combined list then append new item, then sort the list
print("The length of combined_list is: ", len(combined_list))
combined_list.append(11)
combined_list.sort()
print("The sorted combined list is: ", combined_list)

# Check the count of provided value inside the array list, the remove its first occurance from the list
occurance_7 = combined_list.count(7)
print("The occurrences of 7 in the combined list: ", occurance_7)
combined_list.remove(7)
print("The updated combined list after removing element 7 is: ", combined_list)

# Use list comprehension to create squared list where each element is squared of element in combined list
squared_list = [num ** 2 for num in combined_list]
```

COMMENTS PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
❯ python3 assign4.py
Please enter a number: 10
Please enter a number: 22
Please enter a number: 8
Please enter a number: 4
Please enter a number: 32
The elements inside the list are:  [10, 22, 8, 4, 32]
The second element in the list is:  22
The last element in the list is:  32
The third to fifth element in the list are:  [8, 4, 32]
The new combined list is:  [10, 22, 8, 4, 32, 7, 8, 9, 10]
The length of combined_list is:  9
The sorted combined list is:  [4, 7, 8, 8, 9, 10, 10, 11, 22, 32]
The occurrences of 7 in the combined list:  1
The updated combined list after removing element 7 is:  [4, 8, 8, 9, 10, 10, 11, 22, 32]
The updated list with it's value squared is:  [16, 64, 64, 81, 100, 100, 121, 484, 1024]
```

Figure 2: Test case 1

Test case for list [99, 8, 129, 3, 87]:

assign4.py

```python
# Creating a empty array list named my_list and using for loop ask 5 user input and append to the list
my_list = []
for i in range(5):
    number = int(input("Please enter a number: "))
    my_list.append(number)
print("The elements inside the list are: ", my_list)

# Accessing first, second and third to fifth element of my_list
print("The second element in the list is: ", my_list[1])
print("The last element in the list is: ", my_list[-1])
print("The third to fifth element in the list are: ", my_list[2:5])

# Combime my_list with provided value of new_list
new_list = [7, 8, 9, 10]
combined_list = my_list + new_list
print("The new combined list is: ", combined_list)

# Check length of the combined list then append new item, then sort the list
print("The length of combined_list is: ", len(combined_list))
combined_list.append(11)
combined_list.sort()
print("The sorted combined list is: ", combined_list)

# Check the count of provided value inside the array list, the remove its first occurance from the list
occurance_7 = combined_list.count(7)
print("The occurrences of 7 in the combined list: ", occurance_7)
combined_list.remove(7)
print("The updated combined list after removing element 7 is: ", combined_list)

# Use list comprehension to create squared list where each element is squared of element in combined list
squared_list = [num ** 2 for num in combined_list]
```

COMMENTS PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
❯ python3 assign4.py
Please enter a number: 99
Please enter a number: 8
Please enter a number: 129
Please enter a number: 3
Please enter a number: 87
The elements inside the list are:  [99, 8, 129, 3, 87]
The second element in the list is:  8
The last element in the list is:  87
The third to fifth element in the list are:  [129, 3, 87]
The new combined list is:  [99, 8, 129, 3, 87, 7, 8, 9, 10]
The length of combined_list is:  9
The sorted combined list is:  [3, 7, 8, 8, 9, 10, 11, 87, 99, 129]
The occurrences of 7 in the combined list:  1
The updated combined list after removing element 7 is:  [3, 8, 8, 9, 10, 11, 87, 99, 129]
The updated list with it's value squared is:  [9, 64, 64, 81, 100, 121, 7569, 9801, 16641]
```

Figure 3: Test case 2

Test case for list [91, 77, 36, 27, 93]:

assign4.py

```python
# Creating a empty array list named my_list and using for loop ask 5 user input and append to the list
my_list = []
for i in range(5):
    number = int(input("Please enter a number: "))
    my_list.append(number)
print("The elements inside the list are: ", my_list)

# Accessing first, second and third to fifth element of my_list
print("The second element in the list is: ", my_list[1])
print("The last element in the list is: ", my_list[-1])
print("The third to fifth element in the list are: ", my_list[2:5])

# Combime my_list with provided value of new_list
new_list = [7, 8, 9, 10]
combined_list = my_list + new_list
print("The new combined list is: ", combined_list)

# Check length of the combined list then append new item, then sort the list
print("The length of combined_list is: ", len(combined_list))
combined_list.append(11)
combined_list.sort()
print("The sorted combined list is: ", combined_list)

# Check the count of provided value inside the array list, the remove its first occurance from the list
occurance_7 = combined_list.count(7)
print("The occurrences of 7 in the combined list: ", occurance_7)
combined_list.remove(7)
print("The updated combined list after removing element 7 is: ", combined_list)

# Use list comprehension to create squared list where each element is squared of element in combined list
squared_list = [num ** 2 for num in combined_list]
```

COMMENTS PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
❯ python3 assign4.py
Please enter a number: 91
Please enter a number: 77
Please enter a number: 36
Please enter a number: 27
Please enter a number: 93
The elements inside the list are:  [91, 77, 36, 27, 93]
The second element in the list is:  77
The last element in the list is:  93
The third to fifth element in the list are:  [36, 27, 93]
The new combined list is:  [91, 77, 36, 27, 93, 7, 8, 9, 10]
The length of combined_list is:  9
The sorted combined list is:  [7, 8, 9, 10, 11, 27, 36, 77, 91, 93]
The occurrences of 7 in the combined list:  1
The updated combined list after removing element 7 is:  [8, 9, 10, 11, 27, 36, 77, 91, 93]
The updated list with it's value squared is:  [64, 81, 100, 121, 729, 1296, 5929, 8281, 8649]
```

Figure 4: Test case 3