EX-1.7

Title :
     Write a program that takes an input list of n numbers and creates a new list containing only the unique elements from the original list.

Aim:
    To design and implement a Python program to create a list of unique elements from the given list.

Procedure:
1. Read input size n.
2. If n = 0, directly print an empty list.
3. Read the list elements.
4. Convert the list into a set (removes duplicates).
5. Convert the set back to a list.
6. Print the resulting list of unique elements.

Algorithm:
1. Start
2. Read integer n.
3. If n = 0, print [] and stop.
4. Read n elements into arr[].
5. Convert arr to set(arr) (removes duplicates).
6. Convert set back to list.
7. Print final unique list.
8. Stop

Input:

8

3 7 3 5 2 5 9 2

Output:

[3, 7, 5, 2, 9]

Program :

```python
def uniqueElements(arr):
    return list(set(arr))  # set automatically removes duplicates
n = int(input("Enter size of list: "))
if n == 0:
    print("[]")
else:
    arr = list(map(int, input("Enter list elements: ").split()))
    result = uniqueElements(arr)
    print("Unique elements list:", result)
```
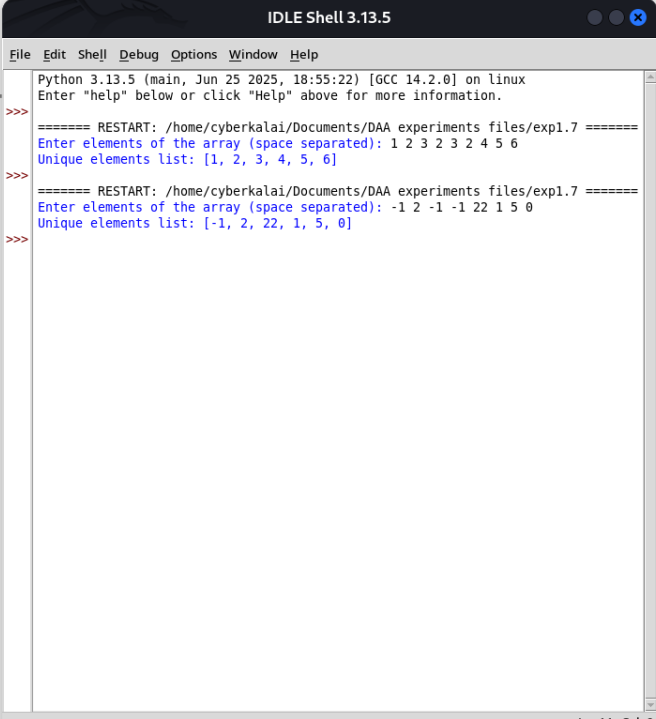
Performance Analysis:

Time Complexity: O(n)

Space Complexity: O(n)

program output:

```
File  Edit  Format  Run  Options  Window  Help
def unique_elements(nums):
    seen = set()
    unique_list = []
    for x in nums:
        if x not in seen:
            unique_list.append(x)
            seen.add(x)
    return unique_list

nums = list(map(int, input("Enter elements of the array (space separated): "

result = unique_elements(nums)
print("Unique elements list:", result)
```

```
IDLE Shell 3.13.5
File  Edit  Shell  Debug  Options  Window  Help
Python 3.13.5 (main, Jun 25 2025, 18:55:22) [GCC 14.2.0] on linux
Enter "help" below or click "Help" above for more information.
>>>
======= RESTART: /home/cyberkalai/Documents/DAA experiments files/exp1.7 =======
Enter elements of the array (space separated): 1 2 3 2 3 2 4 5 6
Unique elements list: [1, 2, 3, 4, 5, 6]
>>>
======= RESTART: /home/cyberkalai/Documents/DAA experiments files/exp1.7 =======
Enter elements of the array (space separated): -1 2 -1 -1 22 1 5 0
Unique elements list: [-1, 2, 22, 1, 5, 0]
>>>
                                                                    Ln: 11  Col: 0
```

Result :

Thus the given program Unique Elements List is executed and got output successfully.