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18MXBH - Python Application Programming
(Practice Problems in List)

1.Write a python program to accept n integers and sort the list. Also find the largest and smallest element in the list.

Answer:

Python Code:

```
lst = []
n = int(input("Enter The Number Of Integers : "))
for i in range(0, n):
        num = int(input())
        lst.append(num)
lst.sort()
print("Sorted Order : ",lst)
print("Maximum Integer : ",lst[0])
print("Minimum Integer : ",lst[-1])
```

Output:

Test Case 1:

```
Enter The Number Of Integers : 4
5
1
9
3
Sorted Order : [1, 3, 5, 9]
Maximum Integer : 9
Minimum Integer : 1
```

Test Case 2:

```
Enter The Number Of Integers : 3
167
86
5
Sorted Order : [5, 86, 167]
Maximum Integer : 167
Minimum Integer : 5
```

2.Write a python program to search a given element in an integer list.

Answer:

Python Code:

```
n = int(input("Enter The Number Of Integers : "))
lst = []
for i in range(n):
        num = int(input())
        lst.append(num)
print("List Of Integers : ",lst)
s = int(input("Enter Search Integer : "))
if s in lst:
        print(s,"Integer Found")
else:
        print(s,"Integer Not Found")
```

Output:

Test Case 1:

```
Enter The Number Of Integers : 5
3
44
65
77
123
Enter Search Integer : 3
3 Integer Found
```

Test Case 2:

```
Enter The Number Of Integers : 5
2
62
4
77
15
Enter Search Integer : 5
5 Integer Not Found
```

3.Write a Python program to remove duplicates from a list.

Answer:

Python Code:

```
lst = []
n = int(input("Enter The Number Of Integers : "))
for i in range(0, n):
        num = int(input())
        lst.append(num)

ndup=[]
for i in lst:
        if (i not in ndup):
                ndup.append(i)


print("List Without Duplicate : ",ndup)
```

Output:

Test Case 1:

```
Enter The Number Of Integers : 5
1
2
1
2
3
List Without Duplicate : [1, 2, 3]
```

Test Case 2:

```
Enter The Number Of Integers : 3
3
4
3
List Without Duplicate : [3, 4]
```

4.Write a Python program to find the list of words that are longer than n from a given list of words.

Answer:

Python Code:

```
n = int(input("Enter Checking Size : "))
lst=[]
lst1=[]
for i in input("Enter The Words: ").split(','):
    if n<len(i):
        lst1.append(i)
    lst.append(i)
print("The List Of Elements :",lst)
print("The Elements Larger Than",n,":",lst1)
```

Output:

Test Case 1:

```
Enter Checking Size : 4
Enter The Words: run,car,racecar,tool
The List Of Elements : ['run', 'car', 'racecar', 'tool']
The Elements Larger Than 4 : ['racecar']
```

Test Case 2:

```
Enter Checking Size : 3
Enter The Words: miracle,jump,data,to
The List Of Elements : ['miracle', 'jump', 'data', 'to']
The Elements Larger Than 3 : ['miracle', 'jump', 'data']
```

5.Write a Python program to print all even numbers from a given numbers list in the same order and stop printing if any numbers that come after 237 in the sequence.

Input :

numbers = [386, 462, 47, 418, 907, 344, 236, 375, 823, 566, 597, 978, 328, 615, 953, 345, 399, 162, 758, 219, 918, 237, 412, 566, 826, 248, 866, 950, 626, 949, 687, 217]

output :

list= [386, 462, 47, 418, 907, 344, 236, 375, 823, 566, 597, 978, 328, 615, 953, 345, 399, 162, 758, 219, 918]

Answer:

Python Code:

```
numbers = [386,462,47,418,907,344,236,375,823,566,597,978,328,615,
953,345,399,162,758,219,918,237,412,566,826,248,866, 950, 626,
949,687,217,815,67,104,58,512,24,892,894,767,553,81,379,843,831,445,742,717,958,
743,527]
lst=[]
for i in numbers:
    if(i == 237):
        lst.append(i)
        break;
    elif (i % 2 == 0):
        lst.append(i)

print("Input : ",numbers)
print("List = ",lst)
```

Output:

```
Input :  [386, 462, 47, 418, 907, 344, 236, 375, 823, 566, 597, 978, 328, 615, 953, 345,
399, 162, 758, 219, 918, 237, 412, 566, 826, 248, 866, 950, 626, 949, 687, 217, 815,
67, 104, 58, 512, 24, 892, 894, 767, 553, 81, 379, 843, 831, 445, 742, 717, 958, 743,
527]
List =  [386, 462, 418, 344, 236, 566, 978, 328, 162, 758, 918, 237]
```

6.Write a Python program to find out, if the given number is abundant.
Note: In number theory, an abundant number or excessive number is a number for which the sum of its proper divisors is greater than the number itself. The integer 12 is the first abundant number. Its proper divisors are 1, 2, 3, 4 and 6 for a total of 16.

Answer:

Python Code:

```
n=int(input("Enter The Number : "))
n1=n//2
i=1
sum=0
while(i<=n1):
    if (n % i ==0):
        sum+=i
```

```
    i+=1
if (sum>n):
    print(n,"Is Abundant Number")
else:
    print(n,"Is Not Abundant Number")
```

Output:

Test Case 1:

Enter The Number : 12
12 Is Abundant Number

Test Case 2:

Enter The Number : 7
7 Is Not Abundant Number

7.Create a list of integers from user input. Print the list and perform the following operations :

i)Find the element that occurs with the highest frequency.

ii)Find the second highest number in the list.

Answer:

Python Code:

```
lst = []
n = int(input("Enter The Number Of Integers : "))
for i in range(0, n):
        num = int(input())
        lst.append(num)
x=0
y=0
for i in lst:
    if (i > x):
        sec_max = x
        x = i
    if (lst.count(i) >= y):
        y=lst.count(i)
        high_freq=i

print("The List : ",lst)
print("The Second Largest Element: ",sec_max)
```

```
print("The Highest Frequency Number : ",high_freq)
```

Output:

Test Case 1:

```
Enter The Number Of Integers : 8
1
4
5
4
7
8
6
9
The List :  [1, 4, 5, 4, 7, 8, 6, 9]
The Second Largest Element:  8
The Highest Frequency Number :  4
```

Test Case 2:

```
Enter The Number Of Integers : 5
1
7
8
1
4
The List :  [1, 7, 8, 1, 4]
The Second Largest Element:  7
The Highest Frequency Number :  1
```