In [1]:
```python
# program 1

# (a)
numbers = []
while len(numbers) < 5:
    number = int(input("Enter an integer: "))
    numbers.append(number)

# (b)
print("Fourth item:", numbers[3])

# (c)
print("Last three items:", numbers[-3:])

# (d)
print("Items except the first two:", numbers[2:])

# (e)
print("List in reverse order:", numbers[::-1])

# (f)
print("Largest value:", max(numbers))
print("Smallest value:", min(numbers))

# (g)
print("Sum of all values:", sum(numbers))

# (h)
if 0 in numbers:
    print("Index of first zero:", numbers.index(0))
else:
    print("There are no zeroes.")

# (i)
sorted_list = sorted(numbers)
print("Sorted list:", sorted_list)

# (j)
del sorted_list[0]
print("List after deleting the first item:", sorted_list)

# (k)
sorted_list[-2] = 9876
print("List after changing the second-to-last item:", sorted_list)

# (l)
sorted_list.append(-500)
print("List after appending -500:", sorted_list)
```

```
Enter an integer: 15
Enter an integer: 24
Enter an integer: 48
Enter an integer: 55
Enter an integer: 10000
Fourth item: 55
Last three items: [48, 55, 10000]
Items except the first two: [48, 55, 10000]
List in reverse order: [10000, 55, 48, 24, 15]
Largest value: 10000
Smallest value: 15
Sum of all values: 10142
There are no zeroes.
Sorted list: [15, 24, 48, 55, 10000]
List after deleting the first item: [24, 48, 55, 10000]
List after changing the second-to-last item: [24, 48, 9876, 10000]
List after appending -500: [24, 48, 9876, 10000, -500]
```

In [2]:
```python
# program 2

def find_smallest(numbers):
    smallest = numbers[0]
    index = 0
    for i in range(1, len(numbers)):
        if numbers[i] < smallest:
            smallest = numbers[i]
            index = i
    return smallest, index

input_numbers = input("Enter a list of numbers (space-separated): ")
numbers_list = list(map(int, input_numbers.split()))


smallest_num, smallest_index = find_smallest(numbers_list)


print("Smallest number:", smallest_num)
print("Index of the smallest number:", smallest_index)
```

```
Enter a list of numbers (space-separated): 3 24 45 18 99
Smallest number: 3
Index of the smallest number: 0
```

In [3]:
```python
# program 3

def count_letters(string):


    counts = [0] * 26  # Assuming only lowercase letters are allowed

    for char in string:
        # Check if the character is a lowercase letter

        if 'a' <= char <= 'z':
            # Incrementing the count
            counts[ord(char) - ord('a')] += 1

    return counts

user_input = input("Enter a string of lowercase letters: ")

letter_counts = count_letters(user_input)

for i in range(26):
    letter = chr(ord('a') + i)
    count = letter_counts[i]
    print(f"{letter}: {count}")
```

```
Enter a string of lowercase letters: a r t b v
a: 1
b: 1
c: 0
d: 0
e: 0
f: 0
g: 0
h: 0
i: 0
j: 0
k: 0
l: 0
m: 0
n: 0
o: 0
p: 0
q: 0
r: 1
s: 0
t: 1
u: 0
v: 1
w: 0
x: 0
y: 0
z: 0
```

In [5]:
```python
# program 4

my_dict = {'abc': 7, 'def': 11, 'ghi': 13, 'jkl': 17, 'mno': 19}

# (a)
print(my_dict['def'])

# (b)
print(my_dict.keys())

# (c)
for key, value in my_dict.items():
    print(key, value)

# (d) Check if the key 'pqr' exists in the dictionary
if 'pqr' in my_dict:
    print("The dictionary contains the key 'pqr'.")
else:
    print("The dictionary does not contain the key 'pqr'.")

# (e)
my_dict['abc'] = 23

# Print all the values in the dictionary
print(my_dict.values())
```

```
11
dict_keys(['abc', 'def', 'ghi', 'jkl', 'mno'])
abc 7
def 11
ghi 13
jkl 17
mno 19
The dictionary does not contain the key 'pqr'.
dict_values([23, 11, 13, 17, 19])
```

In [ ]: