

## 1. Код

```
def input_array():
    a = []
    for i in input('Enter array. All numbers in single line. Negative number
indicates end of the array\n').split():
        if int(i) < 0:
            return a
        else:
            a.append(int(i))
    return a

def merge_arrays(a, b):
    c = a.copy()
    for i in a:
        if i != 0:
            c.append(i)
        else:
            c.append(-5)
    return c

def count_less_than(a, n):
    count = 0
    for i in a:
        if i < n:
            count += 1
    return count

a = input_array()
b = input_array()
c = merge_arrays(a, b)
n = int(input('Enter a number\n'))

print('First array :', a, '\nThere are', count_less_than(a, n), 'elements
that are less than', n)
print('Second array:', b, '\nThere are', count_less_than(b, n), 'elements
that are less than', n)
print('Third array :', c, '\nThere are', count_less_than(c, n), 'elements
that are less than', n)
```

2.

Проверим работу программы на некотором входе.

```
Enter array. All numbers in single line. Negative number indicates end of the array
1 2 3 4 5 6 0 0 0 0 0 -1
Enter array. All numbers in single line. Negative number indicates end of the array
2 -3
Enter a number
-1
First array : [1, 2, 3, 4, 5, 6, 0, 0, 0, 0, 0]
There are 0 elements that are less than -1
Second array: [2]
There are 0 elements that are less than -1
Third array : [1, 2, 3, 4, 5, 6, 0, 0, 0, 0, 0, 1, 2, 3, 4, 5, 6, -5, -5, -5, -5, -5]
There are 5 elements that are less than -1
```

3.

Несколько скринов вывода

```
Enter array. All numbers in single line. Negative number indicates end of the array
0 0 0 -1
Enter array. All numbers in single line. Negative number indicates end of the array
2 2 0 1 -2
Enter a number
1
First array : [0, 0, 0]
There are 3 elements that are less than 1
Second array: [2, 2, 0, 1]
There are 1 elements that are less than 1
Third array : [0, 0, 0, -5, -5, -5]
There are 6 elements that are less than 1
```

```
Enter array. All numbers in single line. Negative number indicates end of the array
-10
Enter array. All numbers in single line. Negative number indicates end of the array
-2
Enter a number
2
First array : []
There are 0 elements that are less than 2
Second array: []
There are 0 elements that are less than 2
Third array : []
There are 0 elements that are less than 2
```

## 4. Вопросы

1) Как задаётся функция в языке Python?

Через ключевое слово `def`. `def <function name>(<arguments>):`

Пример

```
def my_function(a, b):
```

2) Что такое список (list)?

Лист из питона – это фактически `std::vector` из `c++`. Это тип данных, подобный массиву. Отличие в том, что лист не фиксированной длины, имеет разные методы для работы (вроде `append()`, `clear()`, `copy()` и другие).