Prime Sort

Time Left:00:02:50

Sort numbers based on prime factorization.
Each number larger than 1 can be uniquely prime factorized,
e.g. 12 = 2 * 2 * 3, 15 = 3 * 5.

Given a list of N numbers, where each number is greater than 1 and not more than 1000000,
your task is to sort numbers based on their prime factorization.

Input

The first line of input consists of 1 integer, N, followed by N lines with one integer each where these N lines are the list of N numbers you have to sort based on their prime factorization.

Output

Output the sorted list of N numbers,
with one number on each line.

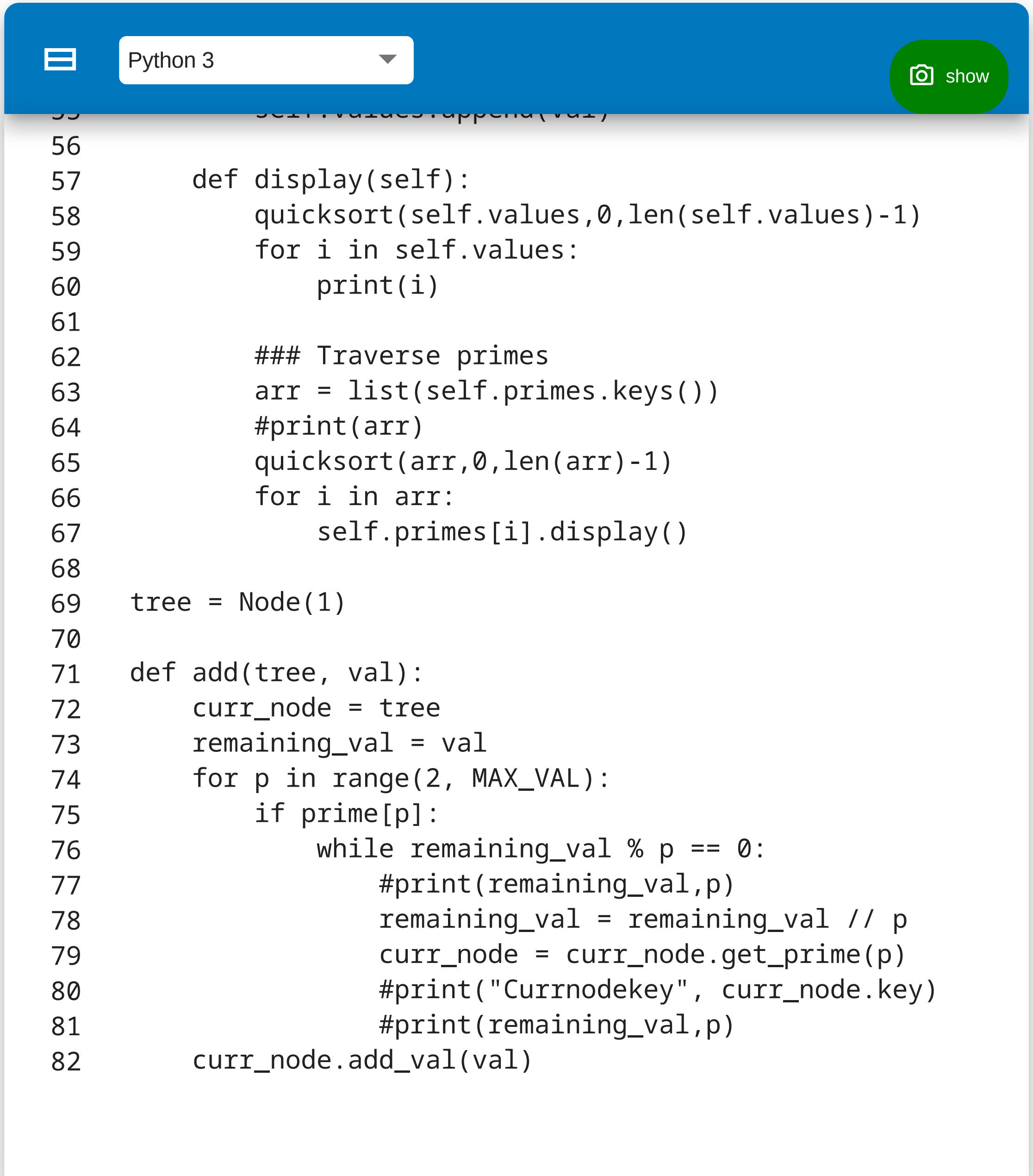
Example

Input

```
5
3 4 8 9 12
```

Output

```
4
8
12
```



```
        self.values.append(val)

    def display(self):
        quicksort(self.values,0,len(self.values)-1)
        for i in self.values:
            print(i)

        ### Traverse primes
        arr = list(self.primes.keys())
        #print(arr)
        quicksort(arr,0,len(arr)-1)
        for i in arr:
            self.primes[i].display()

tree = Node(1)

def add(tree, val):
    curr_node = tree
    remaining_val = val
    for p in range(2, MAX_VAL):
        if prime[p]:
            while remaining_val % p == 0:
                #print(remaining_val,p)
                remaining_val = remaining_val // p
                curr_node = curr_node.get_prime(p)
                #print("Currnodekey", curr_node.key)
                #print(remaining_val,p)
    curr_node.add_val(val)
```

```
3
9
```

Compile & Test

Submit

Explanation

show

3 = 3
4 = 2 * 2
8 = 2 * 2 * 2
9 = 3 * 3
12 = 2 * 2 * 3
The numbers are differentiated by the first (lowest) prime factor first, then followed by the second prime factor, etc.

Results

Case	Status	Input	Output	Expected Output
1	Accepted	14 72 90 57 34 69 66 60 80 33 30 19 77 32 42	32 80 72 60 90 30 42 66 34 33 57 69 77 19	32 80 72 60 90 30 42 66 34 33 57 69 77 19

Case	Status	Input	Output	Expected Output
2	Accepted	15 49 93 21 85 56 93 80 59 59 13 26 97 80 8 90	8 80 80 56 90 26 21 93 93 85 49 13 59 59 97	8 80 80 56 90 26 21 93 93 85 49 13 59 59 97 show
3	Accepted	🔒 Hidden	🔒 Hidden	🔒 Hidden
4	Accepted	🔒 Hidden	🔒 Hidden	🔒 Hidden
5	Time Limit Exceeded	🔒 Hidden	🔒 Hidden	🔒 Hidden
6	Time Limit Exceeded	🔒 Hidden	🔒 Hidden	🔒 Hidden
7	Time Limit Exceeded	🔒 Hidden	🔒 Hidden	🔒 Hidden
8	Time Limit Exceeded	🔒 Hidden	🔒 Hidden	🔒 Hidden
9	Time Limit Exceeded	🔒 Hidden	🔒 Hidden	🔒 Hidden

Case	Status	Input	Output	Expected Output
10	Time Limit Exceeded	🔒 Hidden	🔒 Hidden	🔒 Hidden
11	Time Limit Exceeded	🔒 Hidden	🔒 Hidden	🔒 Hidden
12	Time Limit Exceeded	🔒 Hidden	🔒 Hidden	🔒 Hidden

📷 show