

Interview questions

1. There has been a virus attack in a village. There are N people waiting in line for FREE face masks. (Sequenced as below)

1,2,3,4,5,6.....n

One of the people in line got infected, and everyone lined up in front of him are infected by him.

For instance, if the 5th person in line got infected, the 1st to 5th person are all infected by the virus .

(1-2-3-4-5 all got it)

Fortunately , there's a function to check if one specific person in line is healthy

isHealthy(k) returns boolean:true if the person is not infected

Your assignment is to write a function that identifies the first infected person's position.

NOTE : please minimize calling isHealthy(k) as less as possible because it is pretty heavy loading to do so.

Write a function like :

```
function getFirstInfectedPerson(peopleCount : number) {  
    ...  
    isHealthy(k);  
    ...  
    return firstInfectedIndex;  
}
```

Example:

If the number of people is 30, we found out people from the 1st through the 7th are infected, the function would return 7 as result.

2. Given an integer array , generate another array programmatically with the same size of the given array with element default value -1 the given int array will not contain value -1 inside.

When Array 1 moves N positions to the right exceeds Array 1's limited length, would fill in to Array 2. When the element reaches Array 2's last position, would start moving to the left, until it reaches to Array 1's first position and thereafter moving again to the right to restart the cycle.

Write a function like :

```
function getOutputArray(originArray : number[], n : number) {  
    ...  
    return calculatedArray;  
}
```

Example:

```
givenArray : [1,3]  
[1,3] [-1,-1] first bounce =>  
[-1,1] [3,-1] second bounce =>  
[-1,-1] [1,3] third bounce =>  
[-1,1] [3,-1] fourth bounce =>  
[1,3] [-1,-1] fifth bounce =>  
[-1,1] [3,-1] ..... till N bounces
```

return the second generated array as result

Another example :

If the original array is [3, 7, 12] and the given number n is 4, the return calculated array should be [7, 12, -1].