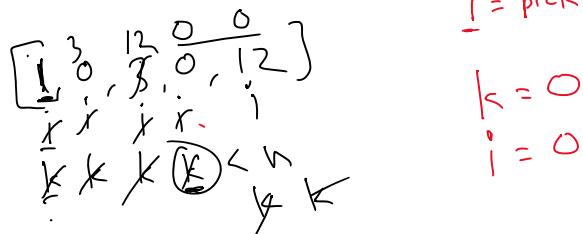




$k = \text{index - non-zero}$
 $i = \text{pickup element from 0th index to } n-1$



$$\begin{aligned} 0! &= 0 \\ 1! &= 0 \\ 0! &= 0 \\ 3! &= 0 \\ 12! &= 0 \end{aligned}$$

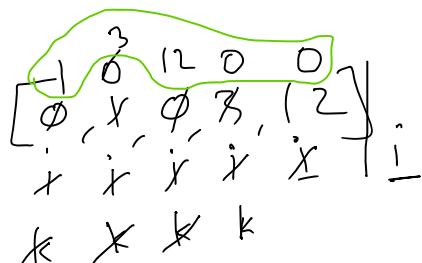
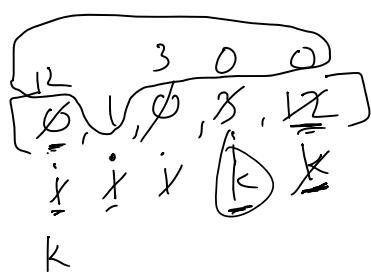
$$k = 0$$

```
for (i=0; i<nums.length; i++) {
    if (nums[i] != 0) {
        nums[k] = nums[i];
        k++;
    }
}
```

}

```
while (k < nums.length) {
    nums[k] = 0;
    k++;
}
```

}



$[3, ?, ?, ?]$, $\text{val} = \underline{3}$

$\left[\begin{matrix} 3, 2, 2, 3 \\ \cancel{x}, \cancel{x}, \cancel{x}, \cancel{x} \end{matrix} \right],$ $\text{val} = \underline{\underline{3}}$
 $\underline{\underline{[2, 2]}}$

$\left[\begin{matrix} 2, 2 \\ \cancel{x}, \cancel{x} \end{matrix}, \left[\begin{matrix} 2, 3 \\ \cancel{x} \end{matrix} \right] \right],$ $\text{val} = \underline{\underline{3}}$
 $\cancel{\cancel{k}} \quad \cancel{\cancel{1}} \quad \boxed{\cancel{\cancel{2}}}$

$\underline{[1, 2, 3, 1]}$

$\underline{[1, 2, 2, 3]} \quad 0$
 $\cancel{\cancel{1}} \quad \cancel{1} \quad \cancel{1} \quad \underline{1}$

`Arrays.sort(nums)`

```

for (i=0; i<nums.length; i++) {
    if (nums[i] == nums[i+1])
        return true
}

```

$\}$
 $\} \quad \text{return false}$