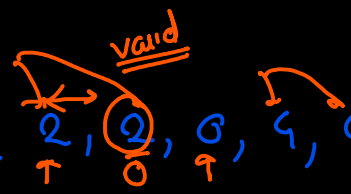
GfG → Modify Array

$= \{ a_1\ a_2\ a_3\ a_4 \ldots a_n \} = \{1, 2, 3, 4, 5, 6\}$

$\rightarrow \{1\ 2\ 3\ 8\ 5\ 6\ 0\}$

Input 1 → 

$\Rightarrow \{4, 0, 0, 4, 0, 8\}$

$\Rightarrow \{4, 4, 8, 0, 0, 0\}$ ←

```
for(i=0; i<n-1; i++){
  if(arr[i]→valid){
    if(arr[i+1]→valid){
      if(arr[i+1] == arr[i]){
        arr[i] = 2*arr[i];
        arr[i+1] = 0;
      } else →
    }
  }
}
```

3+3 = 6, 2*3.

↓ old elem

New Array - $\{4, 0, 0, 4, 0, 8\} = 6-3$ (3)

new = $\{4, 4, 8\}$

3

new Array List → $\{4, 0, 0, 4, 0, 8\}$

$\{4, 4, 8, 0, 0, 0, 0\}$

Return → inplace

{4, 0, 0, 4, 0, 8} → {4, 4, 8, 0, 0, 0}

{0, 0, 1, 2, 0, 1,} → {0, 0, 0, 1, 1, 2} ✓

Input 2 → {0, 2, 2, 2, 0, 6, 6, 0, 0, 8}

→ {0, 4, 0, 2 0, 12, 0, 0, 0, 8}

{0, 4, 0, 2, 0, 12, 0, 0, 0, 8}

{4, 0, 0, 2, 0, 12, 0, 0, 0, 8}

{4, 2, 0, 0, 0, 12, 0, 0, 0, 8}

{4, 2, 12, 0, 0 0 0 0, 0, 0, 0, 8}

{4, 2, 12, 8, 0, 0, - - - 0}

```
if (arr[i] != 0) {
    i++;
}
if (arr[j] == 0) {
    j++;
}
if (arr[i] == 0 && arr[j] != 0) {
    swap, i++, j++
}
```

→ Interview pov.

→ Space optimization

GfG Alternative Sorting

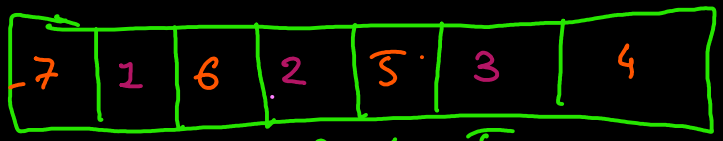
Input : { 7, 1, 2, 3, 4, 5, 6 } →

Output : { 7, 1, 6, 2, 5, 3, 4 }

⟹ { 1, 2, 3, 4, 5, 6, 7 } → Asen hai

size-1

min 7-1=6



⇒ size odd

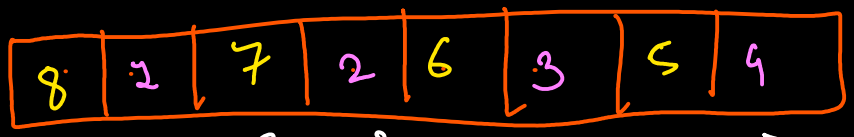
i even

j += 2 → 1st pass

j -= 2 → end pass

AL<> newArr = new AL<>().

{ 1, 2, 3, 4, 5, 6, 7, 8 } →



→ size=0, lastIdx = 7 → odd

j = even

8-2

size-2

Output