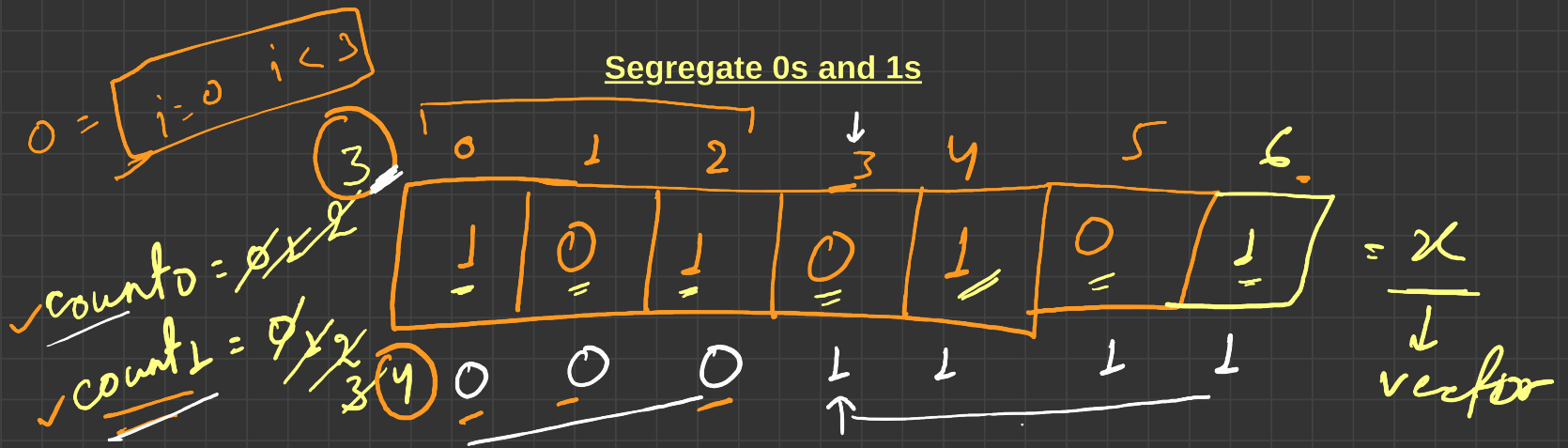
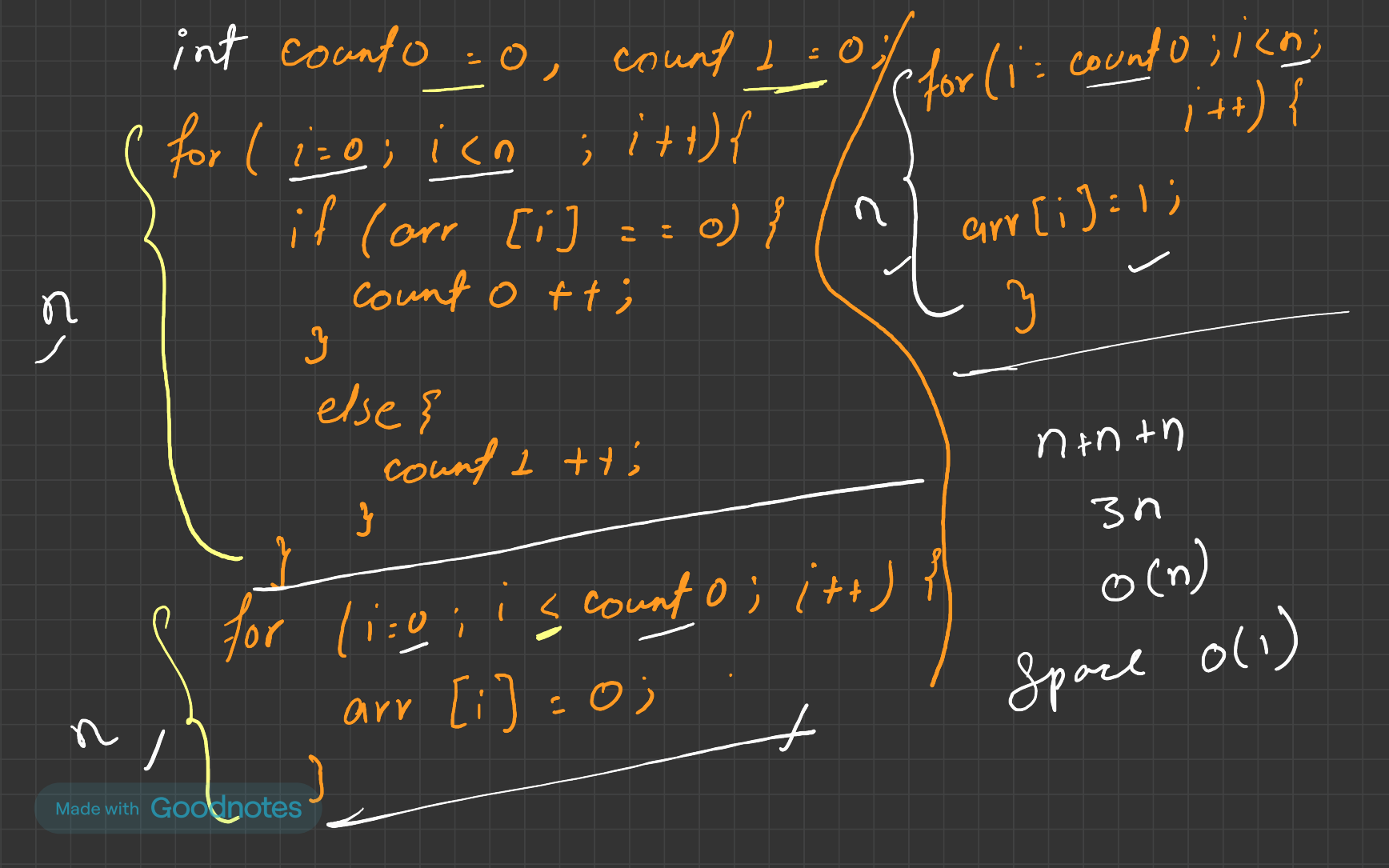
Segregate 0s and 1s

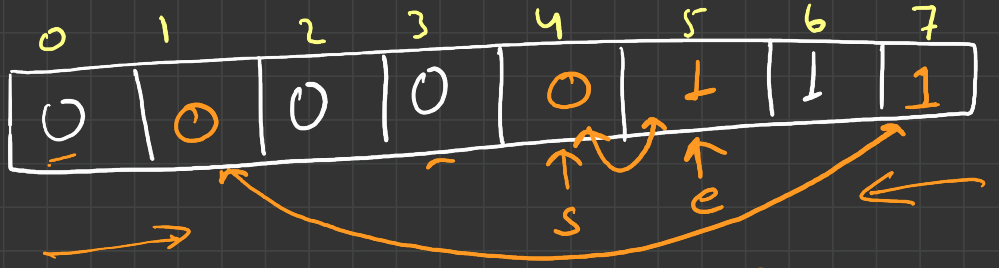


① Sorting ← selection, Bubble, Insertion } $O(n^2)$ Brute

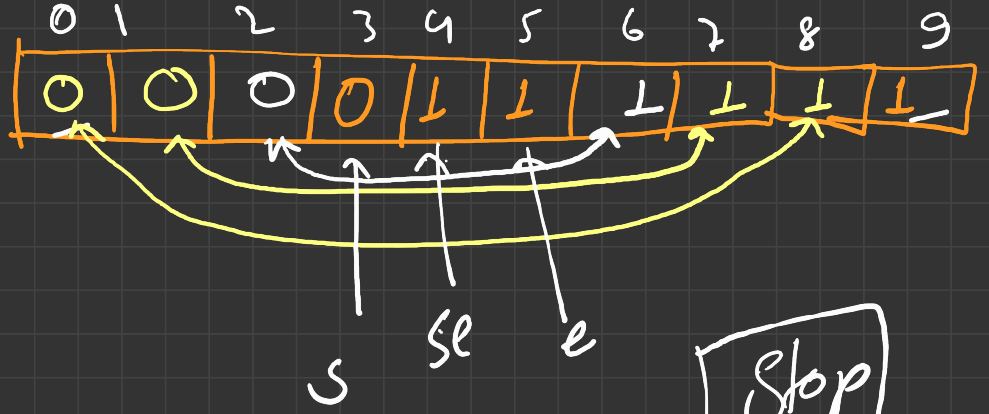
② sort(x.begin(), x.end()); [$O(N \log N)$]

③ $O(n)$



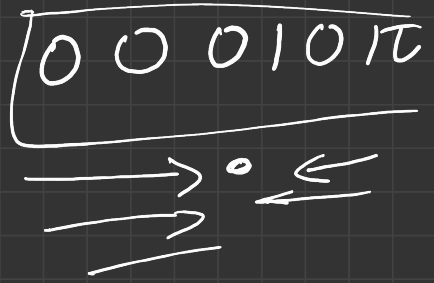


Stop



Stop

```
int start = 0, end = n-1
while (start < end) {
    if (arr[start] == 0)
        start++;
    else {
        if(arr[end] == 0){
            swap(arr[start], arr[end])
            start++, end--; }
        else
            end--;
    }
```



O(N)

Two Sum

Best

Sorted → 

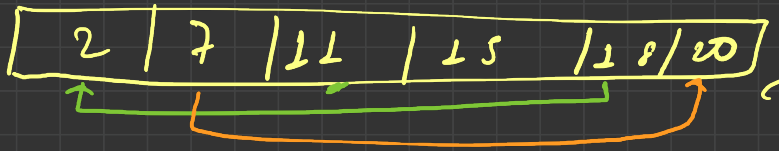
n

Target : 26

```
vector<int>ans
for(i:0 ; i<n-1 ; i++)
    for (j:i+1) ; j<n ; j++)
        if (arr [i] + arr[j] == target)
        {
            ans. push_back (arr[i]);
            ans. push_back [arr[i]);
            break
        }
```

O(N²)

n × n



Target - 26

for (i : 0 ; i < n-1 ; i++) → N

N Log N

(n) : Target - arr [i]

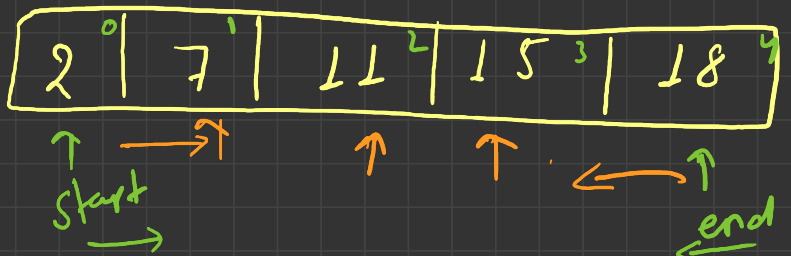
Start = i+1 ; end = n-1 ;

n = {

}

Break

} Log N



Target = 26

```
start = 0 , end = n-1 ;
    while (start < end) {
        if (arr[start] + arr[end] == target)
            return 1 ;
        else if ( arr[start] + arr[end] < target)
                start ++
        else {
                end -- ;
            }
    }   return 0 ;
```