

## 0-1 Sort

$[0, 0, 0, 0, 1, 1, 1, 1, 1]$  assume all the elements before 'j' are sorted

$i = 0 + 2$   
 $j = 0$

$[0, 0, 0, 1, 1, 1, 1, 1, 1]$

$i$   $j$

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

Swap { temp = arr[i];  
        arr[i] = arr[j];  
        arr[j] = temp;

$[0, 0, 0, 1, 1]$   $i = 0 + 1$   
 $j = 0$

Prime Number :-

n = size of array

$2 \text{ sec} < n = \text{TLE}$

$10^6$

50

n = 1 2 8 9 5 1 3 1

$n/2$

$n = 10000$

$n = 1000000$

$\leq n/2$

$n = 119$

50

$$\sqrt{100} = 10$$

1 2 3 4 5 6 7 8 9 10

1	50
2	25
5	10
10	5
25	2
50	1

$$\sqrt{49} = 7$$

$$\sqrt{81} = 9$$

$$\begin{array}{r} 3 \\ 9 \\ 27 \end{array}$$

$$\frac{2 \text{ to } \sqrt{n}}$$

72	21	
1	36	$n/2$
2	24	
3	18	
4	12	
6	9	
8	8	
9	6	
12	4	
18	3	
24	2	
36	1	
72		

Set of divisors:-

$$\sqrt{50} = 7$$

2 ... 7

$$\frac{50}{2} = 25$$

$$\frac{50}{25} = 2$$

$$\frac{4}{2} = 2$$

$$\frac{100}{10} = 10$$

$$\frac{100}{20} = 50$$

if (n==21) return 1

count = 2

if (n%i == 0) {

count++;

if (n/i != i) {

count++;

}

return count

2

$$n = 50$$

$$\sqrt{n} = 7$$

for (i=2 to 7)

$$n \% i = -10$$

$$\frac{50}{2} = 25 \quad n$$

$$\frac{100}{10} = 10$$

$$n/i = i$$

Cons

Reverse A Number :-

$$9812 = 21829$$

$$res = 0 \rightarrow 21829$$

$$15/10 = 1$$

$$15 \% 10 = 5$$

$$n = 9812$$

while (n > 0) {

$$int \text{ last} = \frac{n}{10} \% 10 \quad // 9$$

$$res = res \times 10 + \text{last} \quad ; \quad 218 \times 10 + 9$$

$$\} \quad \underline{n = n / 10} \quad . \quad 0$$

$$\begin{array}{r} 9812 \\ \times 10 \\ \hline 98120 \end{array}$$

Sum of two Arrays :-

$$A = [3, 5, 8]$$

$$B = [8, 2, 3]$$

$$\begin{array}{r} 1181 \\ \hline \end{array}$$

$$A = [9, 9, 9]$$

$$B = [1]$$

$$\begin{array}{r} 1000 \\ \hline \end{array}$$

$$\begin{array}{r} 0-9 \\ \hline \end{array}$$

$$\begin{array}{r} 123 \\ \hline 33 \\ \hline \end{array}$$

$$\begin{array}{r} 156 \\ \hline \end{array}$$

<https://practice.geeksforgeeks.org/problems/add-two-numbers-represented-by-two-arrays2408/1/>

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