



Today's agenda

↳ function game

↳ Problems on array

// function game

Pass by value

main() {

int a = 10;

int b = 20;

Swap(¹⁰a, ²⁰b);

System.out.println(a); → 10

System.out.println(b); → 20

}

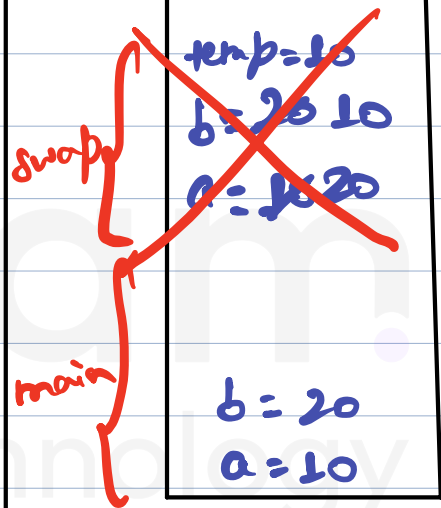
Public static void Swap(int a, int b) {

int temp = a;

a = b;

b = temp;

}



Note: variables across functions are not connected.

Quiz 2

```
main() {
```

```
    int[] arr = {10, 20};
```

```
    swap(arr);
```

```
    System.out.println(arr[0]); → 20
```

```
    System.out.println(arr[1]); → 10
```

```
}
```

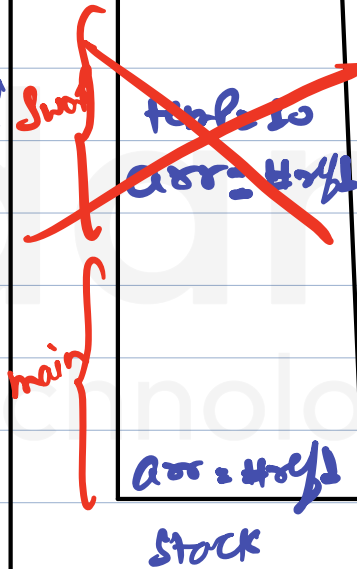
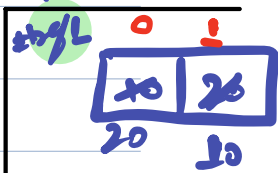
```
public static void swap(int[] arr) {
```

```
    int temp = arr[0];
```

```
    arr[0] = arr[1];
```

```
    arr[1] = temp;
```

```
}
```



Note: Arrays across functions are connected.

Q) Given N array elements, count total no. of elements having at least 1 element greater than itself.

ex: arr[7]: {⁰-4 ¹-3 ²7 ³9 ⁴3 ⁵9 ⁶4}
↳ ans = 5

arr[8]: {3 4 11 8 2 10 9 11}
↳ ans = 6

arr[5]: {7 7 7 7 7}
↳ ans = 0

Obs 1: max element of the array won't be counted.

Obs 2: except for max element, all the elements are valid.

// find the max element.

↳ count the occ. of max element: maxCount

ans = $N - \text{maxCount}$.



11 Psuedo code

```
void main ( ) {  
    Scanner sc = new Scanner(System.in);  
    int n = sc.nextInt();  
    int[] arr = new int[n];  
    for(int i=0; i<n; i++){  
        arr[i] = sc.nextInt();  
    }  
    int ans = greatercount(arr);  
    S.o.p(ans);  
}
```



```
Public static int greaterCount ( int[] arr) {
```

```
    int max = arr[0];
```

```
    for (int i = 1; i < arr.length; i++) {  
        if (arr[i] > max) { max = arr[i]; }
```

```
    }
```

```
    int maxCount = 0;
```

```
    for (int i = 0; i < arr.length; i++) {  
        if (arr[i] == max) { maxCount++; }
```

```
    }
```

```
    return arr.length - maxCount;
```

```
}
```

T.C: $2N-1$
 $\approx O(N)$



Q) Swap indices

↳ Given array of length N and two indices $idx1$ and $idx2$, swap the element of those two indices.

Ex: arr[5] : { ⁰5 ¹15 ²25 ³35 ⁴45 }
 $idx1=1$ $idx2=3$

Q) Reverse array

↳ Given array of length N , Reverse the whole array.

ex: arr[5]: ⁰10 ¹20 ²30 ³40 ⁴50

arr[8]: ⁰10 ¹20 ²30 ³40 ⁴50 ⁵60 ⁶70 ⁷80



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Q) Reverse a Part of array

↳ Given N array element and $[s, e]$, reverse the array from $[s, e]$.

arr[10] = {⁰-3 ¹4 ²2 ³8 ⁴3 ⁵9 ⁶6 ⁷2 ⁸8 ⁹10}