

Array

arr = [10, 100, 200, 15, 108]
 0 1 2 3 4

$$\text{arr}[0] = 10$$

$$\text{arr}[1] = 100$$

$$\text{arr}[2] = 200$$

```
for(int i=0; i<arr.length; i++) {
    System.out.println(arr[i]);
}
```

```
for(int i=arr.length-1; i>=0; i--) {
    System.out.println(arr[i]);
}
```

```
for(int i=0; i<arr.length; i+=2) {
```

```
for(int i=0; i<arr.length, i++)  
    System.out.println(arr[i]);  
}
```

Checking two arrays are identical

$\text{arr1}[] = [\underline{10}, \underline{25}, 10, 90]$

$\text{arr2}[] = [\underline{40}, \underline{60}, 80]$

```
int n1 = arr1.length;
```

```
int n2 = arr2.length;
```

```
boolean identical = true;
```

```
if (n1 != n2) {
```

```
    System.out.println("false");
```

```
} else {
```

```
for (int i = 0; i < n1; i++) {
```

```
    if (arr1[i] != arr2[i]) {
```

```
        identical = false;
```

```
        break;
```

```
}
```

```
    if (identical == false) {
```

```
        System.out.println("false");
```

```
} else {
```

```
    ... , ... );
```

(4)

$\text{arr1}[] = [\underline{10}, \underline{50}, 60, 80]$	$^0 \quad 1 \quad 2 \quad 3$
$\text{arr2}[] = [\underline{10}, \underline{20}, 60, 80]$	$^0 \quad 1 \quad 2 \quad 3$

$\text{arr1}[1] = 50$

$\text{arr2}[1] = 20$

$\text{arr1}[0] = 10$

$\text{arr2}[0] = 10$

$10 \neq 10 \rightarrow \text{false}$

$\text{arr1}[1] = 50$

$\text{arr2}[1] = 20$

$50 \neq 20 \rightarrow \text{true}$

$^0 \quad 1 \quad 2 \quad 3$

$10, 20, 30, 40$

$10, 20, 30, 40$

else
s.o.println("true"),
}

10, 20, 30, 40

Find the sum of elements of an array

$$\text{arr} = [100, 5, 60, 800]$$

$$\text{sum} \rightarrow 100 + 5 + 60 + 800 = \underline{965}$$

$$n=5 \quad \begin{matrix} 0 & 1 & 2 & 3 & 4 \\ \text{arry1} = [100, 50, 1, 6, 8] \end{matrix}$$

$$\begin{matrix} 0 & 1 & 2 & 3 & 4 \\ \text{arry2} = [20, 40, 1, 4, 30] \end{matrix}$$

arry1[0], arr2[1], arr1[2], arr2[3], arr1[4]

for (int i = 0; i < n; i++) {

 if (i % 2 == 0) {

 S.o.Pln(arry1[i]);

 } else {

 S.o.Pln(arry2[i]);

}

i : 7..
arry1[7]
i : 8 arr1[8]

n=5 *

$$\begin{matrix} 0 & 1 & 2 & 3 & 4 \\ \text{arry1} = [10, 50, 60, 8, 9] \end{matrix}$$

$$\begin{matrix} 0 & 1 & 2 & 3 & 4 \\ \text{arry2} = [100, 1, 2, 4, 19] \end{matrix}$$

arry1[0], arr2[1], arr1[2], arr2[3], arr1[4],

0, 2, 4 → arr1
1, 3 → arr2

0, 2, 4 → arr1
1, 3 → arr2

```
for(int i=0; i<n; i++) {  
    if(i%2 == 0) {  
        s.0.println(arr1[i]);  
    } else {  
        s.0.println(arr2[i]);  
    }  
}
```

Updating Array

$\text{Arr} = [10, 20, \underline{4}, 5]$
 Index: 0 1 2 3


 $[10, 20, 60, 5]$

$\text{Arr}[2] = 60;$

$\text{Arr}[0] = 100;$

$\text{Arr} = [100, 20, 60, 5]$
 Index: 0 1 2 3

$\text{Arr}[3] = 5;$

$[100, 20, 60, 5]$

Check Characteristic

$$\text{arr}[] = \begin{bmatrix} 0 & 1 & 2 & 3 \\ 100, 20, 0, -5 \end{bmatrix}$$

↓

$$\text{arr}[] = \begin{bmatrix} 0 & 1 & 0 & -1 \\ 0 & 1 & 2 & 3 \end{bmatrix}$$

(: 0 to n-1

$$\text{arr}[0] = 100 > 0 = 1$$

$$\text{arr}[1]$$

$$\text{arr}[2]$$

```
for (int i=0; i<n-1; i++) {
    if (arr[i]>0) {
```

$$\text{arr}[i] = 1;$$

```
    } else if (arr[i]<0) {
```

$$\text{arr}[i] = -1;$$

```
} else {
```

$$\text{arr}[i] = 0;$$

}

}

$$0 \underline{1} 2 3$$

$$\text{arr}[] = 1, 1, 0, -1$$

i : 0 to n-1

c : 0 to n - 1

Solve Array

$\text{int } n = 5$
 $\text{numbers}[] = [12, 13, 14, 15, 16] \rightarrow \underline{\text{length}}$
 $\text{index}[] = [0, 1, 2, 3, 4] \leftarrow \underline{0 \text{ to } 5}$
 $0 \leq \text{input} \leq \text{numbers.length}$

$\text{int target}[] = \text{new int}[n]$

$0 \text{ to } n-1$
 $\text{numbers}[] = [12, 13, 14, 15, 16]$
 $\text{index}[] = [0, 3, 2, 1, 4]$

```

1 import java.io.*;
2 import java.util.*;
3
4 public class Solution {
5
6     public static void main(String[] args) {
7         // Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named
8         Scanner sc = new Scanner(System.in);
9         int n = sc.nextInt();
10        int numbers[] = new int[n];
11        int index[] = new int[n];
12        for(int i=0;i<n;i++){
13            numbers[i] = sc.nextInt();
14        }
15        for(int i=0;i<n;i++){
16            index[i] = sc.nextInt();
17        }
18        int target[] = new int[n];
19        for(int i=0;i<n;i++){
20            int targetIndex = index[i]; // targetIndex = index[i];
21            target[targetIndex] = numbers[i];
22        }
23        for(int i=0;i<n;i++){
24            System.out.print(target[i] + " ");
25        }
26    }
27 }
28 }
```

$i = 0$
 $\text{target}[\text{index}[0]] = \underline{\text{target}[0]} = 12 = \underline{\text{numbers}[0]}$
 $i = 1$
 $\text{target}[\text{index}[1]] = \underline{\text{target}[3]} = \underline{\text{numbers}[1]}$
 $\text{target}[3] = 13$

$i = 2$
 $\text{target}[\text{index}[2]] = \underline{\text{target}[2]}$
 $\text{target}[2] = \underline{\text{numbers}[2]} = 14$
 $i = 3$
 $\text{target}[\text{index}[3]] = \underline{\text{target}[1]} = \underline{\text{numbers}[3]}$
 $\text{target}[1] = 15$

$i = 4$
 $\text{target}[\text{index}[4]] = \underline{\text{target}[4]} = \underline{\text{numbers}[4]}$
 $\text{target}[4] = 16$

```

int target[] = new int[n];
numbers[] = [0, 12, 13, 14, 15, 16]
index[] = [0, 1, 2, 3, 4]
          0 1 2 3 4
0 to 4 (n-1) for (int i=0; i<n; i++) {

```

$i=0$

index[0] $\rightarrow 0$

target[0] \rightarrow numbers[0] = 12

target[0] = 12

target[index[i]] = numbers[i];

index
[4, 1, 2, 3, 0]
0 1 2 3 4

target[index[0]] \rightarrow target[4] = numbers[0] = 12

target[index[1]] \rightarrow target[1] = numbers[1] = 13

target[index[2]] \rightarrow target[2] = numbers[2] = 14

target[index[3]] \rightarrow target[3] = numbers[3] = 15

target[index[4]] \rightarrow target[0] = numbers[4] = 16

0 1 2 3 4
[16 13 14 15 12] \rightarrow target

$i=0 \text{ to } n-1$

target[0] = numbers[0]

index[0] = 0

target[1] = numbers[0]

target[1] = numbers[1]

target[2] = numbers[2]

index

[0 1 2 1 4]
0 1 2 3 4

... r27

~~target[1] = target[2] = numbers[1]~~

~~target[2] = target[3] = numbers[2]~~

~~target[inx+1] = target[1] = numbers[3]~~

~~target[4] = numbers[4]~~