**Access Array Elements**

class Main {

public static void main(String[] args) {

// create an array

int[] age = {12, 4, 5, 2, 5};

// access each array elements

System.out.println("Accessing Elements of Array:");

System.out.println("First Element: " + age[0]);

System.out.println("Second Element: " + age[1]);

System.out.println("Third Element: " + age[2]);

System.out.println("Fourth Element: " + age[3]);

System.out.println("Fifth Element: " + age[4]);

}

}

**Output**

Accessing Elements of Array:

First Element: 12

Second Element: 4

Third Element: 5

Fourth Element: 2

Fifth Element: 5

## Looping Through Array Elements

### Example: Using For Loop

**class Main {**

**public static void main(String[] args) {**

// create an array

int[] age = {12, 4, 5};

// loop through the array

// using for loop

System.out.println("Using for Loop:");

for(int i = 0; i < age.length; i++) {

System.out.println(age[i]);

}

}

}

**Output**

Using for Loop:

12

4

5

**Example: Using the for-each Loop**

class Main {

public static void main(String[] args) {

// create an array

int[] age = {12, 4, 5};

// loop through the array

// using for loop

System.out.println("Using for-each Loop:");

for(int a : age) {

System.out.println(a);

}

}

}

**Output**

Using for-each Loop:

12

4

5

Example: Compute Sum and Average of Array Elements

class Main {

public static void main(String[] args) {

int[] numbers = {2, -9, 0, 5, 12, -25, 22, 9, 8, 12};

int sum = 0;

Double average;

// access all elements using for each loop

// add each element in sum

for (int number: numbers) {

sum += number;

}

// get the total number of elements

int arrayLength = numbers.length;

// calculate the average

// convert the average from int to double

average = ((double)sum / (double)arrayLength);

System.out.println("Sum = " + sum);

System.out.println("Average = " + average);

}

}

**Output**:

Sum = 36

Average = 3.6

## 1. Copying Arrays Using Assignment Operator

Let's take an example,

class Main {

public static void main(String[] args) {

int [] numbers = {1, 2, 3, 4, 5, 6};

int [] positiveNumbers = numbers; // copying arrays

for (int number: positiveNumbers) {

System.out.print(number + ", ");

}

}

}

**Output**:

1, 2, 3, 4, 5, 6

## 2. Using Looping Construct to Copy Arrays

Let's take an example:

import java.util.Arrays;

class Main {

public static void main(String[] args) {

int [] source = {1, 2, 3, 4, 5, 6};

int [] destination = new int[6];

// iterate and copy elements from source to destination

for (int i = 0; i < source.length; ++i) {

destination[i] = source[i];

}

// converting array to string

System.out.println(Arrays.toString(destination));

}

}

Output [1,2,3,4,5,6]

// To use Arrays.toString() method

import java.util.Arrays;

class Main {

public static void main(String[] args) {

int[] n1 = {2, 3, 12, 4, 12, -2};

int[] n3 = new int[5];

// Creating n2 array of having length of n1 array

int[] n2 = new int[n1.length];

// copying entire n1 array to n2

System.arraycopy(n1, 0, n2, 0, n1.length);

System.out.println("n2 = " + Arrays.toString(n2));

// copying elements from index 2 on n1 array

// copying element to index 1 of n3 array

// 2 elements will be copied

System.arraycopy(n1, 2, n3, 1, 2);

System.out.println("n3 = " + Arrays.toString(n3));

}

}

s

**Output**:

n2 = [2, 3, 12, 4, 12, -2]

n3 = [0, 12, 4, 0, 0]