Array

- **Program for declare, initialize, and display array**

```
package com.javabykiran;

public class TestArray {
	public static void main(String args[]) {
		int a[] = new int[5];// declaration and instantiation
		a[0] = 10;// initialization
		a[1] = 20;
		a[2] = 70;
		a[3] = 40;
		a[4] = 50;
		// printing array
		for (int i = 0; i < a.length; i++)// length is the property of array
			System.out.println(a[i]);
	}
}
```

- **Java program that uses array**

```
package com.javabykiran;

public class Value {
	public static void main(String[] args) {
		// Create int array.
		int[] array = new int[5];
		// Assign first three elements.
		array[0] = 1;
		array[1] = 10;
		array[2] = 100;
		// Loop over elements.
		for (int i = 0; i < array.length; i++) {
			// Get value.
			int value = array[i];
			// Print value.
			System.out.println(value);
		}
	}
}
```


- **Java program that uses char array, loop**

```
package com.javabykiran;

public class CharValue {
	public static void main(String[] args) {
		// Create an array of four chars.
		char[] values = new char[4];
		values[0] = 'j';
		values[1] = 'a';
		values[2] = 'v';
		values[3] = 'a';
		// Loop over array with for-loop.
		for (char value : values) {
			System.out.println(value);
		}
	}
}
```

- **Program for display declared array**

```
package com.javabykiran;

class Declared {

	public static void main(String args[]) {

// declaration, instantiation and// initialization
		int a[] = { 33, 3, 4, 5 };

		// printing array
		for (int i = 0; i < a.length; i++)
// length is the property of array
			System.out.println(a[i]);

	}
}
```



```
package com.javabykiran;

class EqualTest {

	public static void main(String[] args) {
		int arr1[] = { 1, 2, 3 };
		int arr2[] = { 1, 2, 3 };
		if (arr1 == arr2) { // Same as arr1.equals(arr2)
			System.out.println("Same");
		} else {
			System.out.println("Not same");
		}
	}
}
```

- **Java program that initializes arrays**

```
package com.javabykiran;

public class Initialize {
	public static void main(String[] args) {
		// Two input arrays.
		int[] array1 = { 1, 3, 5 };
		String[] array2 = { "frog", "toad", "squirrel" };
		// Array lengths.
		System.out.println(array1.length);
		System.out.println(array2.length);
		// First elements in each array.
		System.out.println(array1[0]);
		System.out.println(array2[0]);
	}
}
```


- **Java program that loops over array in reverse**

```
package com.javabykiran;

public class Reverse {
	public static void main(String[] args) {

		boolean[] values = { false, true, true, true };
		// Loop over array elements in reverse order.
		for (int i = values.length - 1; i >= 0; i--) {
			System.out.println(values[i]);
		}
	}
}
```

- **Java that merges two arrays**

```
package com.javabykiran;

import java.util.Arrays;

public class Merge {

	public static void main(String[] args) {
		int[] values = { 10, 20, 30 };
		int[] values2 = { 100, 200, 300 };
		// Merge the two arrays with for-loops.
		int[] merge = new int[values.length + values2.length];
		for (int i = 0; i < values.length; i++) {
			merge[i] = values[i];
		}
		for (int i = 0; i < values2.length; i++) {
			merge[i + values.length] = values2[i];
		}
		// Display the merged array.
		System.out.println(Arrays.toString(merge));
	}
}
```


- **Program for display addition of two array**

```
package com.javabykiran;

class AddArray {

	public static void main(String args[]) {
		// creating two matrices
		int a[][] = { { 1, 3, 4 }, { 3, 4, 5 } };

		int b[][] = { { 1, 3, 4 }, { 3, 4, 5 } };

		// creating another matrix to store the sum of two matrices
```

```
                int c[][] = new int[2][3];

                // adding and printing addition of 2 matrices
                for (int i = 0; i < 2; i++) {
                        for (int j = 0; j < 3; j++) {
                                c[i][j] = a[i][j] + b[i][j];
                                System.out.print(c[i][j] + " ");
                        }
                        System.out.println();// new line
                }
        }
}
```

- **Program for display average of array elements**


```
package com.javabykiran;

class Average {

        public static void main(String args[]) {

                double nums[] = { 10.1, 11.2, 12.3, 13.4, 14.5 };// Here We Define
Array
                double result = 0; // Result variable to Store the sum of array of
                                                        // values
                int i;
                for (i = 0; i < 5; i++)
                        result = result + nums[i]; // addition of Values
                System.out.println("Average is " + result / 5);
        }
}
```

- **Program for find length of array**

```
package com.javabykiran;

class Length {

	public static void main(String args[]) {
		int a1[] = new int[10];
		int a2[] = { 3, 5, 7, 1, 8, 99, 44, -10 };
		int a3[] = { 4, 3, 2, 1 };
		System.out.println("length of a1 is " + a1.length);
		System.out.println("length of a2 is " + a2.length);
		System.out.println("length of a3 is " + a3.length);
	}
}
```



```
package com.javabykiran;

public class ArrayValue {
	public static void main(String[] args) {
		// Use initialize syntax.
		int[][] values = { { 1, 2 }, { 3, 4 } };
		System.out.println(values[0][0]);
		System.out.println(values[1][0]);
		System.out.println(values[0][1]);
		System.out.println(values[1][1]);
	}
}
```

- **Java program that creates 3D array**

```
package com.javabykiran;

public class Array3D {
	public static void main(String[] args) {
		// Create space cube with 9 points.
		byte[][][] space = new byte[3][3][3];
		space[0][0][0] = 10;
		space[1][1][1] = 20; // Middle of the cube.
		space[2][2][2] = 30;
		// Display points in our space-cube.
		System.out.println(space[0][0][0]);
		System.out.println(space[1][1][1]);
		System.out.println(space[2][2][2]);
	}
}
```

- **Program for Copying an array to another**

```
package com.javabykiran;

public class CopyArray {
	public static void main(String[] args) {
		int array1[] = { 2, 3, 4, 5, 8, 9 };
		int array2[] = new int[6];
		System.out.println("array:");
		System.out.print("[");
		for (int i = 0; i < array1.length; i++) {
			System.out.print(" " + array1[i]);
		}
		System.out.print("]");
		System.out.println("\narray1:");
		System.out.print("[");
		for (int j = 0; j < array1.length; j++) {
			array2[j] = array1[j];
			System.out.print(" " + array2[j]);
		}
		System.out.print("]");
	}
}
```

- **Program for sort integer array**

```
package com.javabykiran;

import java.util.Arrays;

public class SortIntArray {
	public static void bubbleSort(int[] arr) {
		int j = 0;
		int tmp;
		boolean sorted = false;
		while (!sorted) {
			sorted = true;
			j++;
			for (int i = 0; i < arr.length - j; i++) {
				if (arr[i] > arr[i + 1]) {
					tmp = arr[i];
					arr[i] = arr[i + 1];
					arr[i + 1] = tmp;
					sorted = false;
				}
			}
		}
	}

	public static void main(String[] args) {
		int[] thisIsAnIntArray = { 5, 1, 100, 50, 75, 12, 89, 51, 11, 28, 99 };
		bubbleSort(thisIsAnIntArray);

		System.out.println(Arrays.toString(thisIsAnIntArray));
	}
}
```

- **Program for accept array from user and display it**

```
package com.javabykiran;

import java.util.*;

public class UserArray {
	public static void main(String[] args) {
		int[] z = new int[10];
		Scanner s = new Scanner(System.in);
		System.out.println("Enter 10 integers of array");
		for (int i = 0; i < 10; i++) {
			System.out.println("Enter array element");
			z[i] = s.nextInt();
		}
		System.out.println("You have entered");
		for (int i = 0; i < 10; i++) {
			System.out.println(z[i]);
		}
	}
}
```

Homework

- **Find highest number in array?**
- **Find second highest number in array?**
- **Find sum of all even numbers and odd numbers separately.**

Download – Not Recommended

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