Task 21: Home Task

**Example:** This example demonstrates how to initialize an array and traverse it using a for loop to print each element.

public class Main {

   public static void main(String[] args)

   {

​

       // initializing array

       int[] arr = { 1, 2, 3, 4, 5 };

​

       // size of array

       int n = arr.length;

​

       // traversing array

       for (int i = 0; i < n; i++)

           System.out.print(arr[i] + " ");

   }

}

**Output**

1 2 3 4 5

*Task 022 - home task*

**Implementation:**

​

class GFG {

   public static void main(String[] args)

   {

       int[] arr;

​

       arr = new int[5];

​

      arr[0] = 10;

      arr[1] = 20;

       arr[2] = 30;

       arr[3] = 40;

       arr[4] = 50;

​

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

           System.out.println("Element at index "

                              + i + " : " + arr[i]);

   }

}

**Output**

Element at index 0 : 10

Element at index 1 : 20

Element at index 2 : 30

Element at index 3 : 40

Element at index 4 : 50

Task 023 - home task

**Example:** Here we are taking a student class and creating an array of Student with five Student objects stored in the array. The Student objects have to be instantiated using the constructor of the Student class, and their references should be assigned to the array elements.

class Student {

   public int roll\_no;

   public String name;

    Student(int Roll\_no, String Name){

       this.roll\_no = Roll\_no;

       this.name = Name;

   }

~Student(){

roll \_no =0;

name = “”;

}

}

​

public class Main {

   public static void main(String[] args){

Student sobj1 = new Student(); // **default** constructor is called automatically when object is initialised.

Student sobj2 = new Student();

Student sobj3 = new Student();

       Student[] arr;

​       arr = new Student[5];

​

       arr[0] = new Student(1, "aman");

       arr[1] = new Student(2, "vaibhav");

       arr[2] = new Student(3, "shikar");

       arr[3] = new Student(4, "dharmesh");

       arr[4] = new Student(5, "mohit");

​

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

           System.out.println("Element at " + i + " : { "

                              + arr[i].roll\_no + " "

                              + arr[i].name+" }");

   }

}

**Output**

Element at 0 : { 1 aman }

Element at 1 : { 2 vaibhav }

Element at 2 : { 3 shikar }

Element at 3 : { 4 dharmesh }

Element at 4 : { 5 mohit }

Task 024 Home task

class Student{

   public String name;

    Student(String name){

       this.name = name;

   }

  @Override

   public String toString(){

       return name;

   }

}

 ​

public class Main{

   public static void main (String[] args){

       Student[] myStudents = new Student[]{

         new Student("Dharma"),new Student("sanvi"),

         new Student("Rupa"),new Student("Ajay")

       };

       for(Student m:myStudents){

           System.out.println(m);

       }

   }

}

**Output**

Dharma

sanvi

Rupa

Ajay

**Task 025 - home Task**

​

public class GFG {

   public static void main(String[] args)

   {

       int[] arr = new int[4];

       arr[0] = 10;

       arr[1] = 20;

       arr[2] = 30;

       arr[3] = 40;

​

       System.out.println(

           "Trying to access element outside the size of array");

       System.out.println(arr[5]);

   }

}

**Output**

Trying to access element outside the size of array

Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: Index 5 out of bounds for length 4

at GFG.main(GFG.java:13)

Task 025  - home task

**Example:** Let us start with basic two dimensional Array declared and initialized.

// Java Program to demonstrate

// Multidimensional Array

import java.io.\*;

​

class GFG {

   public static void main(String[] args){

          int[][] arr = new int[3][3];

​       System.out.println("Rows : " + arr.length);

     System.out.println("Columns : " + arr[0].length);

   }

}

**Output**

Rows:3

Columns:3

Task 026 - Home Task

public class multiDimensional {

   public static void main(String args[])

   {

      int arr[][] = { { 2, 7, 9 }, { 3, 6, 1 }, { 7, 4, 2 } };

​

       for (int i = 0; i < 3; i++) { // rows

           for (int j = 0; j < 3; j++) // columns

               System.out.print(arr[i][j] + " ");

​

           System.out.println();

       }

   }

}

**Output**

2 7 9

3 6 1

7 4 2

Task 27 - Home task

​

public class Test {

   public static void main(String args[])

   {

       int arr[] = { 3, 1, 2, 5, 4 };

​       sum(arr);

   }

​

   public static void sum(int[] arr)

   {

       int sum = 0;

​

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

           sum += arr[i];

​

       System.out.println("sum of array values : " + sum);

   }

}

**Output**

sum of array values : 15

Task 28 - Home Task

class Test {

   public static void main(String args[])

   {

       int arr[] = m1();

​

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

           System.out.print(arr[i] + " ");

   }

​

   public static int[] m1()

   {

       return new int[] { 1, 2, 3 };

   }

}

**Output**

1 2 3

Task 029 home Task

class Test {

   public static void main(String args[])

   {

       int intArray[] = { 1, 2, 3 };

​

       int cloneArray[] = intArray.clone();

​              System.out.println(intArray == cloneArray);

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

           System.out.print(cloneArray[i] + " ");

       }

   }

}

**Output**

false

1 2 3

Task 030 Home Task

​

class Test {

   public static void main(String args[])

   {

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

​

       int cloneArray[][] = intArray.clone();

​

       // will print false

       System.out.println(intArray == cloneArray);

​

       System.out.println(intArray[0] == cloneArray[0]);

       System.out.println(intArray[1] == cloneArray[1]);

   }

}

**Output**

false

true

true