

DATA STRUCTURES & ALGORITHMS

#03

Array ADT

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| Student Name: |
| Roll Number: Section: |
| Work submitted on: |

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| **Maximum Marks** | **Performance** | **Viva** | **Total** |
| **Marks Obtained** |  |  |  |
| **Remarks (if any)** |  | | |
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| **Experiment evaluated by** | | | |
| Instructor Name: | | | |
| Signature: | | | |

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| Array Related Tasks |

Arrays in Java are like a list of elements of the same type i.e. a list of integers, a list of booleans etc.

1. Creating an Array (method 1) - with new keyword

int[] marks = new int[3];

marks[0] = 97;

marks[1] = 98;

marks[2] = 95;

1. Creating an Array (method 2)

**int[] marks = {98, 97, 95};**

1. Taking an array as an input and printing its elements.

import java.util.\*;

public class Arrays {

   public static void main(String args[]) {

       Scanner sc = new Scanner(System.in);

       int size = sc.nextInt();

       int numbers[] = new int[size];

       for(int i=0; i<size; i++) {

           numbers[i] = sc.nextInt();

       }

       //print the numbers in array

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

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

       }

   }

}

**Task 1**

Take an array of names as input from the user and print them on the screen.

**Task 2:**

Find the maximum & minimum number in an array of integers.

**Task 3:**

Take an array of numbers as input and check if it is an array sorted in ascending order.

Eg : { 1, 2, 4, 7 } is sorted in ascending order.

{3, 4, 6, 2} is not sorted in ascending order

**Task 4:**

Print the values 8, 3, 87, and 34 by accessing them from the given two-dimensional array.

**public class Test1**

**{**

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

**{**

**int[][] arr = { {10,39,8},3,{35,87},22,{34} };**

**// ADD CODE HERE //**

**}**

**}**

**Task 5:**

Print the number of rows in the given two-dimensional array, or the length of the outer array. Then print the number of columns, or the length of each inner array.

**Ex.** The array { {“hello”,”there”,”world”},{“how”,”are”,”you”} } should print:

Rows: 2

Columns: 3

public class Test1 {

public static void main(String[] args)

{

String[][] arr = { {"hello","there","world"},

{"how","are","you"} };

System.out.println("Rows:");

// ADD CODE TO PRINT NUMBER OF ROWS HERE //

System.out.println("Columns:");

// ADD CODE TO PRINT NUMBER OF COLUMNS HERE //

}

}