If n = 8, then array ‘a’ will have 7 elements in the range from 1 to 8. For example  {1, 4, 5, 3, 7, 8, 6}. One number will be missing in ‘a’ (2 in this case). Write a source code to find out that missing number

CODE:

import java.util.Scanner;

public class MissingNumber1 {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.print("Enter the value of n: ");

int n = scanner.nextInt();

// Create an array of size n-1

int[] arr = new int[n - 1];

// Input the elements of the array

System.out.println("Enter " + (n - 1) + " numbers:");

for (int i = 0; i < n - 1; i++) {

arr[i] = scanner.nextInt();

}

// Find the missing number

int missingNumber = findMissingNumber(arr, n);

System.out.println("The missing number is: " + missingNumber);

scanner.close(); // Closing the scanner object

}

// Function to find the missing number

public static int findMissingNumber(int[] arr, int n) {

int total = n \* (n + 1) / 2; // Sum of natural numbers from 1 to n

int sum = 0;

for (int num : arr) {

sum += num;

}

return total - sum;

}

}

OUTPUT:

C:\javap>javac MissingNumber1.java

C:\javap>java MissingNumber1

Enter the value of n: 9

Enter 8 numbers:

0 2 4 6 8 1 3 5

The missing number is: 16

