**LAB # 02**

**Array List and Vector in JAVA**

**OBJECTIVE:** To implement Array List and Vector.

## Lab Tasks

1. Write a program that initializes Vector with 10 integers in it. Display all the integers and sum of these integers.

CODE:

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OUTPUT:

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1. Create a ArrayList of string. Write a menu driven program which:
   * 1. Displays all the elements
     2. Displays the largest String

CODE:

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OUTPUT:

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1. Create a Arraylist storing Employee details including Emp\_id, Emp\_Name, Emp\_gender, Year\_of\_Joining (you can also add more attributes including these). Then sort the employees according to their joining year using Comparator and Comparable interfaces.

CODE:

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OUTPUT:

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1. Write a program that initializes Vector with 10 integers in it.

* + Display all the integers 
  + Sum of these integers.
  + Find Maximum Element in Vector

CODE:

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OUTPUT:

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1. Find the k-th smallest element in a sorted ArrayList

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OUTPUT:

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1. Write a program to merge two ArrayLists into one.

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OUTPUT:

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## Home Tasks

1. Create a Vector storing integer objects as an input.
   1. Sort the vector
   2. Display largest number
   3. Display smallest number

CODE:

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OUTPUT:

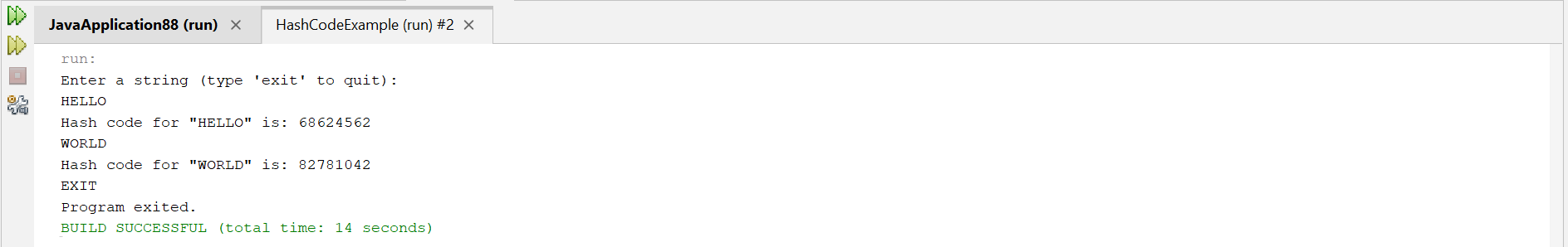
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1. Write a java program which takes user input and gives hashcode value of those inputs using hashCode () method.

CODE:

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OUTPUT:



## 3. Scenario based

Create a java project, suppose you work for a company that needs to manage a list of employees. Each employee has a unique combination of a name and an ID. Your goal is to ensure that you can track employees effectively and avoid duplicate entries in your system.

Requirements

a. Employee Class: You need to create an Employee class that includes:

* name: The employee's name (String).
* id: The employee's unique identifier (int).
* Override the hashCode() and equals() methods to ensure that two employees are considered equal if they have the same name and id.

1. Employee Management: You will use a HashSet to store employee records. This will help you avoid duplicate entries.
2. Operations: Implement operations to:

* Add new employees to the record.
* Check if an employee already exists in the records.  Display all employees.

CODE:

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OUTPUT:

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4.Create a Color class that has red, green, and blue values. Two colors are considered equal if their RGB values are the same

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OUTPUT:

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