Ex No 13 COLLECTIONS

Date :

**AIM:**

To use the concept of collections in java and perform the operations

1 a.

Write a method intersect that accepts two sorted array lists of integers as parameters and

returns a new list that contains only the elements that are found in both lists.

**ALGORITHM:**

STEP 1: Create an empty ArrayList called result to store the common elements.

STEP 2: Initialize two pointers, i and j, to 0. These pointers represent the current position in list1 and list2, respectively.

STEP 3: While i is less than the size of list1 and j is less than the size of list2, do the following:

a. If list1.get(i) is equal to list2.get(j), add list1.get(i) to the result list and increment both i and j.

b. If list1.get(i) is less than list2.get(j), increment i.

c. If list1.get(i) is greater than list2.get(j), increment j.

STEP 4: Return the result list containing the common elements.

**PROGRAM:**

import java.util.ArrayList;

import java.util.List;

public class IntersectArrays {

public static List<Integer> intersect(List<Integer> list1, List<Integer> list2) {

List<Integer> result = new ArrayList<>();

int i = 0, j = 0;

while (i < list1.size() && j < list2.size()) {

int num1 = list1.get(i);

int num2 = list2.get(j);

if (num1 == num2) {

result.add(num1);

i++;

j++;

} else if (num1 < num2) {

i++;

} else {

j++;

}

}

return result;

}

public static void main(String[] args) {

List<Integer> list1 = List.of(1, 4, 8, 9, 11, 15, 17, 28, 41, 59);

List<Integer> list2 = List.of(4, 7, 11, 17, 19, 20, 23, 28, 37, 59, 81);

List<Integer> result = intersect(list1, list2);

System.out.println(result);

}

}

Output:

[4, 11, 17, 28, 59]

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| **Code/output(15)** |  |
| **Quiz(5)** |  |
| **Record(5)** |  |
| **Total(25)** |  |
| **Initial** |  |

Result :

Thus the program I executed sucessfully