**Recording**

**Date :** 06/07/2025

**Problem Specification :** Write a program to check if two arrays are equal (having the same elements in the same order).

**Assumption :** Both arrays are of the same type (e.g., int).

Arrays can be of any valid length ≥ 0.

Arrays may contain positive, negative, or zero values.

**Limitation :** Arrays must be compared element by element and in order.

If either array is null, it should be handled separately (not covered in basic version).

**Input :** Two arrays arr1and arr2.

**Processing :** Compare the lengths of the arrays.

If lengths differ → arrays are not equal.

If lengths are equal:

* Compare each pair of elements at the same index.
* If any element differs → arrays are not equal.
* If all elements match → arrays are equal.

**Output :** A message indicating whether the arrays are equal or not equal.

**Algorithm :** Step 1: Define two arrays arr1 and arr2.

Step 2: If lengths of arr1 and arr2 are different → return false.

Step 3: Loop from i = 0 to arr1.length - 1:

- If arr1[i] != arr2[i], return false.

Step 4: If loop completes without mismatch, return true.

Step 5: Display result.

**Programme listing :** Programme file attached

**Test data and expected output :** 1.Test data: arr1[]={1, 2, 3, 4}

arr2[]={1, 2, 3, 4}

Expected output: Equal

2.Test data: arr1[]={1, 2, 3, 4}

arr2[]={{1, 2, 4, 3} Expected output: Not Equal

**Output obtained for test data :** 1.Test data: arr1[]={1, 2, 3, 4}

arr2[]={1, 2, 3, 4}

Expected output: Equal

2.Test data: arr1[]={1, 2, 3, 4}

arr2[]={1, 2, 3}

Expected output: Not Equal

**Analysis :** The numbers of operation required in performing the algorithm.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | +,- | /,\* | % | </>/<=/>= |
| For calculation | - | - | - | - |
| For loop | - | - | - | *N* times |
| Comparison | - | - | - | *N times* |

**Conclusion** : This program efficiently checks whether two arrays are equal insize and content order using a simple linear loop. It works for any integer array and supports empty arrays.

**Discussion :** This approach runs in Θ(N) time and uses no extra space.

For more complex types (e.g., objects), .equals() should be used instead of ==.