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.

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For calculation	-	-	-	-
For loop	-	-	-	*N* times
Comparison	-	-	-	*N times*

Conclusion   :   This program efficiently checks whether two arrays are equal in size 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 ==.