Exercises on Arrays_Basic

1. Find the Second Largest Element

Description: Write a program to find the second largest element in an array of integers without sorting the array.

Objective: Practice array traversal and comparison logic.

Suggested Approach:

- **Iterate through the array once, keeping track of the largest and second-largest elements.**
- **Use two variables to store the largest and second-largest values, updating them as you traverse.**
- **Handle edge cases (e.g., arrays with fewer than two elements or duplicate values).**

2. Rotate Array Elements by K Positions

Description: Write a program to rotate an array to the right by k positions. For example, {1, 2, 3, 4, 5} rotated by k=2 becomes {4, 5, 1, 2, 3}.

Objective: Practice array manipulation and modular indexing.

Suggested Approach:

- **Use a temporary array to store the rotated elements.**
- **Compute the effective rotation (k % size) to handle cases where k > size.**
- **Copy elements to new positions using modular arithmetic.**

3. Check if Array is a Palindrome

Description: Write a program to check if an array is a palindrome (i.e., reads the same forward and backward, like {1, 2, 3, 2, 1}).

Objective: Practice array indexing and comparison.

Suggested Approach:

- **Compare elements from the start and end of the array, moving inward.**
- **If any pair doesn’t match, the array is not a palindrome.**
- **Use two pointers (one from the start, one from the end).**