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Write a program that finds the largest element in an array.

Program In C

C

```c
#include <stdio.h>

int findLargestElement(int arr[], int size) {
    int largest = arr[0]; // Assume the first element is the largest

    for (int i = 1; i < size; i++) {
        if (arr[i] > largest) {
            largest = arr[i];
        }
    }

    return largest;
}

int main() {
    int arr[] = {5, 2, 9, 1, 7};
    int size = sizeof(arr) / sizeof(arr[0]);

    int largest = findLargestElement(arr, size);
    printf("The largest element in the array is: %d\n", largest);

    return 0;
```

```
}
```

Explanation:

- In this program, the findLargestElement function takes an array arr and its size size as parameters.
- It assumes the first element of the array is the largest and then iterates through the remaining elements, updating the largest variable whenever a larger element is found. Finally, it returns the largest element.
- In the main function, an array arr is declared with some example values.
- The size of the array is calculated using sizeof operator.
- Then, the findLargestElement function is called with the array and its size, and the largest element returned is printed to the console.

Output:

C

```
The largest element in the array is: 9
```

Program In Java

Java

```
public class LargestElementInArray {
    public static int findLargestElement(int[] arr, int size) {
        int largest = arr[0]; // Assume the first element is the
largest

        for (int i = 1; i < size; i++) {
            if (arr[i] > largest) {
                largest = arr[i];
            }
        }

        return largest;
    }

    public static void main(String[] args) {
        int[] arr = {5, 2, 9, 1, 7};
        int size = arr.length;

        int largest = findLargestElement(arr, size);
        System.out.printf("The largest element in the array is: %d\n",
largest);
    }
}
```

Explanation:

1. The program starts by defining a public class named LargestElementInArray.
2. Inside the class, the program declares a static method called findLargestElement that takes two parameters: an integer array arr and the size of the array size.
3. Within the findLargestElement method, a variable largest is initialized with the value of the first element in the array arr[0]. This assumes that the first element is the largest element.

4. The method then iterates over the array from the second element (i = 1) to the last element (i < size).
5. Inside the loop, each element of the array arr[i] is compared to the current largest value. If arr[i] is greater than largest, the largest value is updated to arr[i].
6. After the loop finishes, the largest value is returned as the result of the method.
7. The program also defines a main method, which is the entry point of the program.
8. Inside the main method, an integer array arr is declared and initialized with values {5, 2, 9, 1, 7}.
9. The size of the array is determined using the length property of the array (int size = arr.length).
10. The findLargestElement method is called with the arr array and its size as arguments, and the result is stored in the largest variable.
11. Finally, the program uses System.out.printf() to print the result to the console, displaying the message “The largest element in the array is: ” followed by the value of largest.

Output

```
The largest element in the array is: 9
```

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