Task 2: Generic Classes and Methods

Implement a generic method that swaps the positions of two elements in an array, regardless of their type, and demonstrate its usage with different object types.

```
package Day19;
import java.util.Arrays;
public class Task2 {
    // Generic method to swap the positions of two elements in an array
    public static <T> void swap(T[] array, int index1, int index2) {
        T temp = array[index1];
        array[index1] = array[index2];
        array[index2] = temp;
    }
    public static void main(String[] args) {
        // Test with Integer array
        Integer[] intArray = {1, 2, 3, 4, 5};
        System.out.println("Original Integer array: " + Arrays.toString(intArray));
        swap(intArray, 1, 3);
        System.out.println("Swapped Integer array: " + Arrays.toString(intArray));
        // Test with String array
        String[] stringArray = {"one", "two", "three", "four"};
        System.out.println("Original String array: " + Arrays.toString(stringArray));
        swap(stringArray, 0, 2);
        System.out.println("Swapped String array: " + Arrays.toString(stringArray));
        // Test with Double array
        Double[] doubleArray = {1.1, 2.2, 3.3, 4.4};
        System.out.println("Original Double array: " + Arrays.toString(doubleArray));
        swap(doubleArray, 1, 2);
        System.out.println("Swapped Double array: " + Arrays.toString(doubleArray));
    }
}
```

```
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            1 package Day19;
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    ∇ Task2
    S swap(T[], int, int) <T>: void

            3 import java.util.Arrays;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 • s main(String[]): void
           5 public class Task2 {
                                     lic class Task2 {
   // Generic method to swap the positions of two elements in an array
public static <T> void swap(T[] array, int index1, int index2) {
   T temp = array[index1];
   array[index1] = array[index2];
   array[index2] = temp;
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                                  public static void main(String[] args) {
    // Test with Integer array
    Integer[] intArray = {1, 2, 3, 4, 5};
    System.out.println("Original Integer array: " + Arrays.toString(intArray));
    swap(intArray, 1, 3);
    System.out.println("Swapped Integer array: " + Arrays.toString(intArray));
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                                                      // Test with String array
String[] stringArray = {"one", "two", "three", "four"};
System.out.println("Original String array: " + Arrays.toString(stringArray));
swop(stringArray, 0, 2);
System.out.println("Swapped String array: " + Arrays.toString(stringArray));
                                                     // Test with Double array
Double[] doubleArray = {1.1, 2.2, 3.3, 4.4};
System.out.println("Original Double array: " + Arrays.toString(doubleArray));
swap(doubleArray, 1, 2);

    Markers □ Properties 
    Properties □ Terminal □ Console 
    □ Coverage

   <terminated> Task2 [Java Application] C:\Users\Nikita\,p2\poo\\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210721-1149\jre\bin\javaw.exe (Jun 5, 2024, 10:28:15 AM – 10:28:17 AM)
Original Integer array: [1, 2, 3, 4, 5]
Swapped Integer array: [n, 2, 3, 4, 5]
Original String array: [one, two, three, four]
Swapped String array: [three, two, one, four]
Original Double array: [1.1, 2.2, 3.3, 4.4]
Swapped Double array: [1.1, 3.3, 2.2, 4.4]
```