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.

```java
package com.wipro.model;
import java.util.Arrays;
public class ArrayUtils {
public static <T> void swap(T[] array, int index1, int index2) {
if (index1 < 0 || index1 >= array.length || index2 < 0 || index2 >= array.length) {
throw new IllegalArgumentException("Invalid indices: " + index1 + ", " + index2);
}
T temp = array[index1];
array[index1] = array[index2];
array[index2] = temp;
}
public static void main(String[] args) {
Integer[] intArray = {1, 2, 3, 4, 5};
System.out.println("Original Integer Array: " + Arrays.toString(intArray));
swap(intArray, 1, 3);
System.out.println("After swap: " + Arrays.toString(intArray));
String[] strArray = {"apple", "banana", "cherry", "date"};
System.out.println("\nOriginal String Array: " + Arrays.toString(strArray));
swap(strArray, 0, 2);
System.out.println("After swap: " + Arrays.toString(strArray));
Double[] doubleArray = {1.5, 2.5, 3.5, 4.5};
System.out.println("\nOriginal Double Array: " + Arrays.toString(doubleArray));
swap(doubleArray, 1, 3);
System.out.println("After swap: " + Arrays.toString(doubleArray));
}
}
```