# string 배열 bubble sort

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| package net.skhu.sort.bubble;  import java.util.Arrays;  public class Example3 {  // 배열 a에서 i 위치와 j 위치의 값을 서로 바꾼다  static void swap(String[] a, int i, int j) {  String temp = a[i];  a[i] = a[j];  a[j] = temp;  }  // bubble sort  static void bubbleSort(String[] a) {  for (int i = a.length - 1; i >= 1; --i) {  boolean 완료 = true;  for (int j = 0; j < i; ++j) {  if (a[j].compareTo(a[j + 1]) > 0) {  swap(a, j, j + 1);  완료 = false;  }  }  if (완료) break;  }  }  public static void main(String[] args) {  String[] a = { "zero", "one", "two", "three", "four", "five", "six", "seven" };  bubbleSort(a);  System.out.println(Arrays.toString(a));  }  } |

# List<Comparable> bubble sort 구현 실습

## 힌트

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| static void sort(List<Comparable> list) {  List<Comparable> 객체의 메소드  Comparable get(int index);  void set(int index, Comparable obj);  int size();  Comparable obj1 = list.get(index1);  Comparable obj2 = list.get(index2);  if (obj1.compareTo(obj2) > 0) { .... }  }  static void add(List<Comparable> list, String[] a) {  ...  }  static void print(List<Comparable> list) {  ...  }  static void main() {  String[] a = new String[] { "one", "two", "three", "four", "five", "size", "seven", "eight", "nine", "ten" };  List<Comparable> list1 = new ArrayList<Comparable>();  List<Comparable> list2 = new LinkedList<Comparable>();  add(list1, a); sort(list1); print(list1);  add(list2, a); sort(list2); print(list2);  } |

## 답

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| package net.skhu.sort.bubble;  import java.util.ArrayList;  import java.util.LinkedList;  import java.util.List;  public class Example5 {  // list 에서 i 위치와 j 위치의 값을 서로 바꾼다  static void swap(List<Comparable> list, int i, int j) {  Comparable temp = list.get(i);  list.set(i, list.get(j));  list.set(j, temp);  }  // bubble sort  static void bubbleSort(List<Comparable> list) {  for (int i = list.size() - 1; i >= 1; --i) {  boolean 완료 = true;  for (int j = 0; j < i; ++j) {  if (list.get(j).compareTo(list.get(j + 1)) > 0) {  swap(list, j, j + 1);  완료 = false;  }  }  if (완료) break;  }  }  static void add(List<Comparable> list, Comparable[] a) {  for (Comparable s : a)  list.add(s);  }  static void print(List<Comparable> list) {  for (Comparable obj : list)  System.out.printf("%s ", obj.toString());  System.out.println();  }  public static void main(String[] args) {  String[] a1 = new String[] { "one", "two", "three", "four", "five", "size",  "seven", "eight", "nine", "ten" };  Integer[] a2 = new Integer[] { 8, 1, 7, 4, 3, 6, 2, 9, 5, 0 };  List<Comparable> list1 = new ArrayList<Comparable>();  List<Comparable> list2 = new LinkedList<Comparable>();  List<Comparable> list3 = new ArrayList<Comparable>();  List<Comparable> list4 = new LinkedList<Comparable>();  add(list1, a1); bubbleSort(list1); print(list1);  add(list2, a1); bubbleSort(list2); print(list2);  add(list3, a2); bubbleSort(list3); print(list3);  add(list4, a2); bubbleSort(list4); print(list4);  }  } |