Topic 1 Discussion 2

Consider an array of integers. Write the pseudocode for either the selection sort, insertion sort, or bubble sort algorithm. Include loop invariants in your pseudocode. Create a Loom video in which you present your algorithm. Paste the link to your video here.

public class wk1dq2 {

//function to sort array with insertion sort

void sort(int array[]) {

int p = array.length;

for (int i = 1; i < p; ++i) {

int run = array[i];

int j = i - 1;

/\*

\* Move elements of array, that are greater than run, to one position

\* ahead of their current position

\*/

while (j >= 0 && array[j] > run) {

array[j + 1] = array[j];

j = j - 1;

}

array[j + 1] = run;

}

}

/\* A utility function to print array of size n \*/

static void printArray(int array[]) {

int p = array.length;

for (int i = 0; i < p; ++i)

System.out.print(array[i] + " ");

System.out.println();

}

// Driver

public static void main(String args[]) {

int array[] = { 62, 15, 1, 22, 10, 54, 85, 6 };

System.out.println("Unsorted array");

printArray(array);

wk1dq2 ob = new wk1dq2();

ob.sort(array);

System.out.println("Sorted array using Insertion sort.");

printArray(array);

}

}

Insertion sort was really easy to understand especially if you look at it like a hand of cards. Insertion sort is used when number of elements is small. It can also be useful when input array is almost sorted, only few elements are misplaced in complete big array.

https://www.loom.com/share/1bab5d73d3e640ba8d2a41ddc87759f2