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/*
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 * Click nbfs://nbhost/SystemFileSystem/Templates/Project/Maven2/JavaApp/src/main
 */

package com.mycompany.heapsort;

/**
 *
 * @author user
 */
public class HeapSort
{
    // i: index of root node in array a[],
    // size: size of heap.

    public static void heapify(int arr[], int size, int i)
    {
        int largest = i;
        int leftChild = 2 * i + 1;
        int rightChild = 2 * i + 2;

        // if leftChild > root
        if (leftChild < size && arr[leftChild] > arr[largest])
            largest = leftChild;
        // if rightChild > root
        if (rightChild < size && arr[rightChild] > arr[largest])
            largest = rightChild;

        // if root is not largest
        if (largest != i) {
            // swap a[i] with a[largest]
            int temp = arr[i];
            arr[i] = arr[largest];
            arr[largest] = temp;

            heapify(arr, size, largest);
        }
    }
}
```

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```
public static void heapSort(int arr[], int size)
{
    for (int i = size / 2 - 1; i >= 0; i--)
        heapify(arr, size, i);

    // One by one extract an element from heap
    for (int i = size - 1; i >= 0; i--) {
        /* Move current root element to end*/
        // swap a[0] with a[i]
        int temp = arr[0];
        arr[0] = arr[i];
        arr[i] = temp;

        heapify(arr, i, 0);
    }
}

public static void printArr(int arr[], int size)
{
    for (int i = 0; i < size; i++)
        System.out.print(arr[i] + " ");
}

public static void main(String args[])
{
    int arr[] = {1, 10, 20, 35, 4, 6, 14};
    int size = arr.length;
    System.out.println("Unsorted Array: ");
    printArr(arr, size);
    System.out.println(" ");

    heapSort(arr, size);

    System.out.println("Sorted Array: ");
    printArr(arr, size);
}
}
```

