Sorting a HashMap according to keys in Java

We are given the details of marks scored by students in form of a [HashMap](https://www.geeksforgeeks.org/java-util-hashmap-in-java/), where name of the student is the Key and marks scored is the Value. Our task is to sort the map according to the key values i.e the names of the students in the alphabetical(lexicographical) order.

Examples:

Input : Key = Jayant, Value = 80

Key = Anushka, Value = 80

Key = Amit, Value = 75

Key = Abhishek, Value = 90

Key = Danish, Value = 40

Output : Sorted Map according to Names:

Key = Abhishek, Value = 90

Key = Amit, Value = 75

Key = Anushka, Value = 80

Key = Danish, Value = 40

Key = Jayant, Value = 80

**Using TreeMap (putAll method)**  
The idea is to put all data of HashMap into a [TreeMap](https://www.geeksforgeeks.org/hashmap-treemap-java/" \t "_blank). The TreeMap follows [Red Black Tree](https://www.geeksforgeeks.org/red-black-tree-set-1-introduction-2/) based implementation. The map is sorted according to the natural ordering of its keys. [Click here for More](https://docs.oracle.com/javase/7/docs/api/java/util/TreeMap.html).

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| // Java Code to sort Map by key value  import java.util.\*;  class sortmapKey {        // This map stores unsorted values      static Map<String, Integer> map = new HashMap<>();        // Function to sort map by Key      public static void sortbykey()      {          // TreeMap to store values of HashMap          TreeMap<String, Integer> sorted = new TreeMap<>();            // Copy all data from hashMap into TreeMap          sorted.putAll(map);            // Display the TreeMap which is naturally sorted          for (Map.Entry<String, Integer> entry : sorted.entrySet())              System.out.println("Key = " + entry.getKey() +                           ", Value = " + entry.getValue());      }        // Driver Code      public static void main(String args[])      {          // putting values in the Map          map.put("Jayant", 80);          map.put("Abhishek", 90);          map.put("Anushka", 80);          map.put("Amit", 75);          map.put("Danish", 40);            // Calling the function to sortbyKey          sortbykey();      }  } |

**Using TreeMap (Constructor)**

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| // Java Code to sort Map by key value  import java.util.\*;  class sortmapKey {        // This map stores unsorted values      static Map<String, Integer> map = new HashMap<>();        // Function to sort map by Key      public static void sortbykey()      {          // TreeMap to store values of HashMap          TreeMap<String, Integer> sorted = new TreeMap<>(map);            // Display the TreeMap which is naturally sorted          for (Map.Entry<String, Integer> entry : sorted.entrySet())              System.out.println("Key = " + entry.getKey() +                           ", Value = " + entry.getValue());      }        // Driver Code      public static void main(String args[])      {          // putting values in the Map          map.put("Jayant", 80);          map.put("Abhishek", 90);          map.put("Anushka", 80);          map.put("Amit", 75);          map.put("Danish", 40);            // Calling the function to sortbyKey          sortbykey();      }  } |

**Using ArrayList**

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| // Java Code to sort Map by key value  import java.util.\*;  class sortmapKey {        // This map stores unsorted values      static Map<String, Integer> map = new HashMap<>();        // Function to sort map by Key      public static void sortbykey()      {          ArrayList<String> sortedKeys =                      new ArrayList<String>(map.keySet());            Collections.sort(sortedKeys);            // Display the TreeMap which is naturally sorted          for (String x : sortedKeys)              System.out.println("Key = " + x +                          ", Value = " + map.get(x));      }        // Driver Code      public static void main(String args[])      {          // putting values in the Map          map.put("Jayant", 80);          map.put("Abhishek", 90);          map.put("Anushka", 80);          map.put("Amit", 75);          map.put("Danish", 40);            // Calling the function to sortbyKey          sortbykey();      }  } |