Source Code:

    a. Sort by Key Value

```java
import java.util.HashMap;
import java.util.Map;
import java.util.TreeMap;

public class MapVerifier {
    public static void main(String[] args) {
        //declare and initialize a map
        Map<String, String> country_map = new HashMap<String, String>();
        country_map.put("I", "India");
        country_map.put("C", "China");
        country_map.put("A", "America");
        country_map.put("D", "Denmark");
        country_map.put("X", "Hongkong");
        country_map.put("NK", "North Korea");
        country_map.put("J", "Japan");
        country_map.put("R", "Russia");
        //print original map
        System.out.println("Original Unsorted Map: ");
        display_map(country_map);

        System.out.println("\nMap sorted by Key: ");
        //convert map to tree map and display it in which keys are auto sorted
        Map<String, String> treecountry = new TreeMap<String, String>(country_map);
        display_map(treecountry);

    }

    public static <K, V> void display_map(Map<K, V> map) {
        //obtain entry iterator and display key value pairs of map
        for (Map.Entry<K, V> entry : map.entrySet()) {
            System.out.println("\t" + entry.getKey() + "\t\t" + entry.getValue());
        }
    }

}
```

b. Using Static Method

```java
import java.util.*;

class MapVerifier {
    //declare a static map variable and initialize it with declaration
    private static final Map<Integer, String> myMap =
            new HashMap<Integer, String>(){
                {
                    put(1, "India");
                    put(2, "China");
                    put(3, "Russia");
                    put(3, "Russia");
                    put(4, "U.S.A");
                    put(5, "U.K");

                }
            };
    public static void main(String[] args) {
        //print the map
        System.out.println("Static map using static map variable:");
        System.out.println(myMap);
    }
}
```

Outputs:

```java
1 package demo;
2
3
4 import java.util.HashMap;
5 import java.util.Map;
6 import java.util.TreeMap;
7
8 public class MapVerifier {
9     public static void main(String[] args) {
10        //declare and initialize a map
11        Map<String, String> country_map = new HashMap<String, String>();
12        country_map.put("I", "India");
13        country_map.put("C", "China");
14        country_map.put("A", "America");
15        country_map.put("D", "Denmark");
16        country_map.put("X", "Hongkong");
17        country_map.put("NK", "North Korea");
18        country_map.put("J", "Japan");
19        country_map.put("R", "Russia");
20        //print original map
21        System.out.println("Original Unsorted Map: ");
22        display_map(country_map);
23
24        System.out.println("\nMap sorted by Key: ");
25        //convert map to tree map and display it in which keys are auto sorted
26        Map<String, String> treecountry = new TreeMap<String, String>(country_map);
27        display_map(treecountry);
28
29    }
30
31    public static <K, V> void display_map(Map<K, V> map) {
32        //obtain entry iterator and display key value pairs of map
33        for (Map.Entry<K, V> entry : map.entrySet()) {
34            System.out.println("\t" + entry.getKey() + "\t\t" + entry.getValue());
35        }
36    }
37
38 }
```

```
<terminated> MapVerifier [Java Application] C:\Users\Administrator\.p2\pool\plugi
Original Unsorted Map:
        A               America
        R               Russia
        C               China
        D               Denmark
        X               Hongkong
        I               India
        J               Japan
        NK              North Korea

Map sorted by Key:
        A               America
        C               China
        D               Denmark
        I               India
        J               Japan
        NK              North Korea
        R               Russia
        X               Hongkong
```

```java
package demo;


import java.util.*;

class MapVerifier {
    //declare a static map variable and initialize it with declaration
    private static final Map<Integer, String> myMap =
            new HashMap<Integer, String>(){
                {
                    put(1, "India");
                    put(2, "China");
                    put(3, "Russia");
                    put(3, "Russia");
                    put(4, "U.S.A");
                    put(5, "U.K");

                }
            };
    public static void main(String[] args) {
        //print the map
        System.out.println("Static map using static map variable:");
        System.out.println(myMap);
    }
}
```

Console

Static map using static map variable:
{1=India, 2=China, 3=Russia, 4=U.S.A, 5=U.K}