

```
package root;

import java.util.HashMap;
import java.util.Map;

public class mapverifier {

    public static void main(String[] args) {

        // Create a new map
        Map<String, Integer> map = new HashMap<>();

        // Add some key-value pairs to the map
        map.put("apple", 1);
        map.put("banana", 2);
        map.put("cherry", 3);

        // Verify that the map contains the expected keys
        if (!map.containsKey("apple") || !map.containsKey("banana") ||
!map.containsKey("cherry")) {
            System.out.println("Error: map does not contain expected keys");
            return;
        }

        // Verify that the map has the expected size
        if (map.size() != 3) {
            System.out.println("Error: map size is not as expected");
            return;
        }

        // Verify that the map returns the expected values for the keys
```

```
if (map.get("apple") != 1 || map.get("banana") != 2 || map.get("cherry") != 3) {  
    System.out.println("Error: map returns unexpected values for keys");  
    return;  
}  
  
// Remove a key-value pair from the map  
map.remove("banana");  
  
// Verify that the map no longer contains the removed key  
if (map.containsKey("banana")) {  
    System.out.println("Error: map still contains removed key");  
    return;  
}  
  
// Verify that the map size has been updated accordingly  
if (map.size() != 2) {  
    System.out.println("Error: map size is not as expected after removal");  
    return;  
}  
  
// Print a message indicating that the map is valid  
System.out.println("Map is valid");  
}
```

