6.Writing a program in Java to verify implementations of maps

import java.util.HashMap;

import java.util.Map;

public class MapDemo {

public static void main(String[] args) {

// Creating a HashMap

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

// Adding some key-value pairs to the map

map.put("john", 25);

map.put("mary", 30);

map.put("Charlie", 35);

// Printing the map

System.out.println("Map: " + map);

// Checking if the map contains a particular key

String key = "mary";

if (map.containsKey(key)) {

System.out.println(key + " is present with value " + map.get(key));

} else {

System.out.println(key + " is not present in the map.");

}

// Removing a key-value pair from the map

String removeKey = "Charlie";

int removedValue = map.remove(removeKey);

System.out.println(removeKey + " was removed with value " + removedValue);

// Printing the map again

System.out.println("Map after removal: " + map);

// Iterating over the keys of the map

System.out.println("Keys:");

for (String k : map.keySet()) {

System.out.println(k);

}

// Iterating over the values of the map

System.out.println("Values:");

for (int v : map.values()) {

System.out.println(v);

}

// Iterating over the entries of the map

System.out.println("Entries:");

for (Map.Entry<String, Integer> entry : map.entrySet()) {

System.out.println(entry.getKey() + " - " + entry.getValue());

}

}

OUTPUT:

Map: {Charlie=35, mary=30, john=25}mary is present with value 30Charlie was removed with value 35Map after removal: {mary=30, john=25}Keys:maryjohnValues:3025Entries:mary - 30john - 25