

Practical no :4**Programs based Map Interface****Program no :1**

Aim: Write down a JAVA program using Map Interface containing list of items having keys and associated values and perform the following operations:

- a) Add items in the map.
- b) Remove items from the map.
- c) Search specific key from the Map.
- d) Get values of the Sepcified key.
- e) Insert map elements of one map into another map.
- f) Print all keys and values of the map.

Code:

```
import java.util.*;
public class MapOperationsExample {
    public static void main(String[]args) {
        Scanner scanner = new Scanner(System.in);
        // Create a Map to store items
        Map<String, String> itemMap = new HashMap<>();

        //a. Add items in the map
        System.out.println("Adding items to the map.Type 'exit' to stop adding.");
        while(true) {
            System.out.println("Enter key: ");
            String key = scanner.nextLine();
            if(key.equalsIgnoreCase("exit")) {
                break;
            }
            System.out.println("Enter value: ");
            String value = scanner.nextLine();
            itemMap.put(key,value);
        }
        //b. Remove items from the Map
        System.out.print("\nEnter key to remove from the map: ");
        String keyToRemove = scanner.nextLine();
```

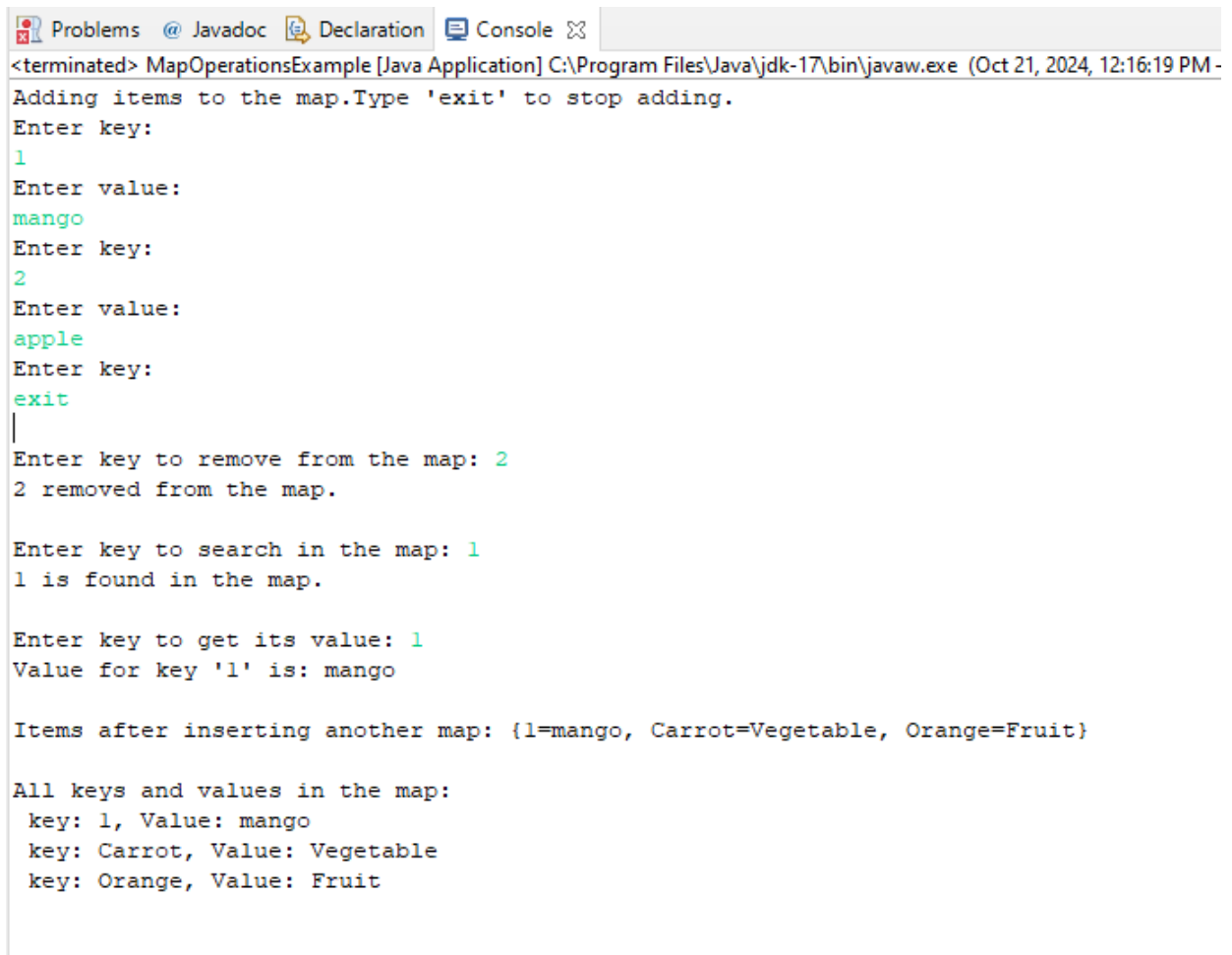
```
if(itemMap.remove(keyToRemove)!=null) {
    System.out.println(keyToRemove + " removed from the map.");
}else {
    System.out.println(keyToRemove + " is not found in the map.");
}

//c. Search specific key from the Map
System.out.print("\nEnter key to search in the map: ");
String keyToSearch = scanner.nextLine();
if(itemMap.containsKey(keyToSearch)) {
    System.out.println(keyToSearch + " is found in the map.");
}else {
    System.out.println(keyToSearch + " is not found in the map.");
}

//d. Get value of the specified key.
System.out.print("\nEnter key to get its value: ");
String keyToGetValue = scanner.nextLine();
String value = itemMap.get(keyToGetValue);
if( value!=null){
    System.out.println("Value for key '"+ keyToGetValue + "' is: "+ value);
}else {
    System.out.println("Key '" + keyToGetValue + "' not found.");
}

//e. Insert map elements of one map into another map.
Map<String, String> anotherMap = new HashMap<>();
anotherMap.put("Orange","Fruit");
anotherMap.put("Carrot","Vegetable");
itemMap.putAll(anotherMap);
System.out.println("\nItems after inserting another map: "+itemMap);

//f. Print all keys and values of the map
System.out.println("\nAll keys and values in the map: ");
for(Map.Entry<String, String>entry : itemMap.entrySet()) {
    System.out.println(" key: "+entry.getKey()+" , Value: "+entry.getValue());
}
//Close the scanner
scanner.close();
}
```

Output:

```
<terminated> MapOperationsExample [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (Oct 21, 2024, 12:16:19 PM -
Adding items to the map.Type 'exit' to stop adding.
Enter key:
1
Enter value:
mango
Enter key:
2
Enter value:
apple
Enter key:
exit
|
Enter key to remove from the map: 2
2 removed from the map.

Enter key to search in the map: 1
1 is found in the map.

Enter key to get its value: 1
Value for key '1' is: mango

Items after inserting another map: {1=mango, Carrot=Vegetable, Orange=Fruit}

All keys and values in the map:
key: 1, Value: mango
key: Carrot, Value: Vegetable
key: Orange, Value: Fruit
```