

Hash Map pgms

A HashMap basically designates **unique keys** to corresponding **values** that can be retrieved at any given point.

- The **values** can be stored in a map by forming a **key-value** pair. The value can be retrieved using the key by passing it to the correct method.
- If **no element** exists in the Map, it will throw a '**NoSuchElementException**'.
- HashMap stores only **object references**. That is why, it is impossible to use **primitive data types** like double or int. Use wrapper class (like Integer or Double) instead.

Hash Map Basic Operations

```
public class MyBasicHashMap {  
  
    public static void main(String a[]){  
        HashMap<String, String> hm = new HashMap<String, String>();  
        //add key-value pair to hashmap  
        hm.put("first", "FIRST INSERTED");  
        hm.put("second", "SECOND INSERTED");  
        hm.put("third", "THIRD INSERTED");  
        System.out.println(hm);  
        //getting value for the given key from hashmap  
        System.out.println("Value of second: "+hm.get("second"));  
        System.out.println("Is HashMap empty? "+hm.isEmpty());  
        hm.remove("third");  
        System.out.println(hm);  
        System.out.println("Size of the HashMap: "+hm.size());  
    }  
}
```

```
}  
}
```

Output

```
{second=SECOND INSERTED, third=THIRD INSERTED, first=FIRST INSERTED}  
Value of second: SECOND INSERTED  
Is HashMap empty? false  
{second=SECOND INSERTED, first=FIRST INSERTED}  
Size of the HashMap: 2
```

How to copy Map content to another HashMap?

```
public class MyHashMapCopy {  
  
    public static void main(String a[]){  
        HashMap<String, String> hm = new HashMap<String, String>();  
        //add key-value pair to hashmap  
        hm.put("first", "FIRST INSERTED");  
        hm.put("second", "SECOND INSERTED");  
        hm.put("third", "THIRD INSERTED");  
        System.out.println(hm);  
        HashMap<String, String> subMap = new HashMap<String, String>();  
        subMap.put("s1", "S1 VALUE");  
        subMap.put("s2", "S2 VALUE");  
        hm.putAll(subMap);  
        System.out.println(hm);  
    }  
}
```

```
}
```

```
{second=SECOND INSERTED, third=THIRD INSERTED, first=FIRST INSERTED}  
{s2=S2 VALUE, s1=S1 VALUE, second=SECOND INSERTED, third=THIRD INSERTED, first=FIRST INSERTED}
```

How to search a key in HashMap?

```
public static void main(String a[]){  
    HashMap<String, String> hm = new HashMap<String, String>();  
    //add key-value pair to hashmap  
    hm.put("first", "FIRST INSERTED");  
    hm.put("second", "SECOND INSERTED");  
    hm.put("third", "THIRD INSERTED");  
    System.out.println(hm);  
    if(hm.containsKey("first")){  
        System.out.println("The hashmap contains key first");  
    } else {  
        System.out.println("The hashmap does not contains key first");  
    }  
    if(hm.containsKey("fifth")){  
        System.out.println("The hashmap contains key fifth");  
    } else {  
        System.out.println("The hashmap does not contains key fifth");  
    }  
}
```

```
{second=SECOND INSERTED, third=THIRD INSERTED, first=FIRST INSERTED}
```

The hashmap contains key first

The hashmap does not contains key fifth

How to search a value in HashMap?

```
if(hm.containsValue("SECOND INSERTED")){  
    System.out.println("The hashmap contains value SECOND INSERTED");  
} else {  
    System.out.println("The hashmap does not contains value SECOND INSERTED");  
}
```

How to get all keys from HashMap?

```
public class MyHashMapKeys {  
  
    public static void main(String a[]){  
        HashMap<String, String> hm = new HashMap<String, String>();  
        //add key-value pair to hashmap  
        hm.put("first", "FIRST INSERTED");  
        hm.put("second", "SECOND INSERTED");  
        hm.put("third", "THIRD INSERTED");  
        System.out.println(hm);  
        Set<String> keys = hm.keySet();  
        for(String key: keys){  
            System.out.println(key);  
        }  
    }  
  
    {second=SECOND INSERTED, third=THIRD INSERTED, first=FIRST INSERTED}
```

second
third
first

How to delete all elements from HashMap?

```
hm.clear();
```