

Java: Hashmaps

Quick summary

- consists of key-value pairs
- HashMaps, TreeMap, and LinkedList
- class name: `HashMap<Integer, String>`

Eclipse example: hashmaps

Example

```
HashMap<Integer, String> map = new HashMap<Integer, String>();  
  
map.put(5, "five");  
  
map.put(6, "six");  
  
map.put(2, "two");  
  
map.put(1, "one");  
  
map.put(9, "nine");
```

Map methods

Here's how you add to the map:

```
map.put(key, value);  
  
e.g.,  
  
map.put(5, "five")
```

Here's how you get a specific value from the map:

```
map.get(5);
```

You pass in the key to the `get` method.

Then you could print out a specific key from the map like this:

```
String gimmesomething = map.get(4);  
  
System.out.println(gimmesomething);
```

Iterate through the map

Here's how you iterate through this same map:

// Here's how you iterate through the map.

```
for (Map.Entry<Integer,String> entry:map.entrySet()) {  
  
    int key = entry.getKey();  
  
    String value = entry.getValue();  
  
    System.out.println(key + ":" + value);  
}
```

You use a for loop here. Then you use the `getKey` method and `getValue` method to pull the specific key and values from the map.

Other types of maps

There are a few other types of maps that are part of the Java Collections Framework. There is a `TreeMap` and a `LinkedHashMap`. Both of these other types of maps give you more control about how the items are sorted and stored in the map. So if it's important for you to retrieve the map's items in a specific order, look into using one of these other types of maps.

Example

Here's an example from *Just Java 2*:

```
import java.util.*;

public class example2 {

    // the Map!

    Map<String, String> phonebook = new HashMap<String, String>();

    // constructor

    public example2(String n[], String nums[]) {

        for(int i=0; i< n.length; i++)

            phonebook.put( n[i], nums[i] );

    }

    public static void main(String[] args) {

        // data

        String [] names = { "Lefty", "Guarav", "Wong", "Rupamay" };

        String [] extns = { "4873", "4810", "3769", "0" };

        // get an instance of this class

        example2 ex = new example2( names, extns );

        // dump out the map

        System.out.println("map: " + ex.phonebook);

        // get the mappings
```

```
Set<Map.Entry<String,String>> s = ex.phonebook.entrySet();
```

```
// iterate over the mappings
```

```
// for (Iterator i = s.iterator(); i.hasNext(); ) {
```

```
for (Map.Entry me : s) {
```

```
    Object ok = me.getKey();
```

```
    Object ov = me.getValue();
```

```
    System.out.print("key=" + ok );
```

```
    System.out.println(", value=" + ov );
```

```
}
```

```
}
```

```
}
```