1. **Map Interface**

A Map in Java is an [object](https://www.edureka.co/blog/java-object/) that maps keys to values and is designed for the faster lookups. Data is stored in key-value pairs and every key is unique.  Each key maps to a value hence the name map.  These key-value pairs are called map entries.

In the [JDK](https://www.edureka.co/blog/what-is-java/#ComponentsinJava), [java.util.Map](https://docs.oracle.com/javase/8/docs/api/java/util/Map.html) is an [interface](https://www.edureka.co/blog/java-collections/#interface) that includes method signatures for insertion, removal, and retrieval of elements based on a key. With such methods, it’s a perfect tool to use for key-value association mapping such as dictionaries.

**Map Hierarchy**

There are two interfaces that implement the Map in java: Map and Sorted Map. And popular implementation classes of Map in Java are Hash Map, Tree Map, and Linked Hash Map.

1. **Why hasMap does not belong to Collection?**

Maps work with key/value pairs, while the other collections work with just values. Collections have, for example, add(myValue) methods, where Maps have put(myKey,myValue) methods. The Interface Map doesn't extend the Interface Collection because it has a different interface.

Collection has subinterfaces such as Set, List and Queue. But Map is altogether a separate Interface.

1. **IdentityHashMap, WeakHashMap:-**

The IdentityHashMap, WeakHashMap, and EnumMap all are the classes in java collection that implements the Map interface. But there are few differences exists between them.

**IdentityHashMap:-**

## The IdentityHashMap implements the Map interface. It follows reference-equality in place of object-equality when comparing keys (and values). This class is used when the user requires the objects to be compared via reference. It is not synchronized and must be synchronized externally. The iterators in this class are fail-fast, throw Concurrent Modification Exception in an attempt to modify while iterating.

**WeakHashMap:-**

## Weak Hash Map is the implementation of the Map interface that stores only weak keys. In Weak Hash Map, we can store only weak references of its key that allows a key-value pairs to be garbage collected when its key is no longer in ordinary use. Weak Hash Map is the Hash Table based implementation, nut it is not synchronized. It allows you to store both null key and null values.

1. **Methods in Java Map Interface**

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| **Methods** | **Description** |
| public put(Object key, Object value) | This method inserts an entry in the map |
| public void putAll(Map map) | This method inserts the specified map in this map |
| public Object remove(Object key) | It is used to delete an entry for the specified key |
| public Set keySet() | It returns the Set view containing all the keys |
| public Set entrySet() | It returns the Set view containing all the keys and values |
| void clear() | It is used to reset the map |
| public void putIfAbsent(K key, V value) | It inserts the specified value with the specified key in the map only if it is not already specified |
| public Object get(Object key) | It returns the value for the specified key |
| public boolean containsKey(Object key) | It is used to search the specified key from this map |