

HASH MAPS

* Most imp
* Mostly used

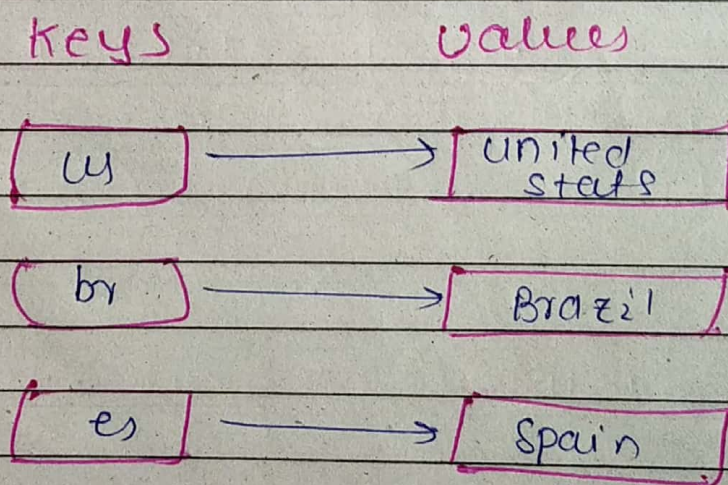
⇒ MAP interface.

In Java, elements of Map are stored in key/value pairs. Keys are unique values associated with individual values. A map cannot contain duplicate keys. And, each key is associated with a single value.

We can access & modify values using the keys associated with them.

In the above diagram, we have values: United States, Brazil and Spain.

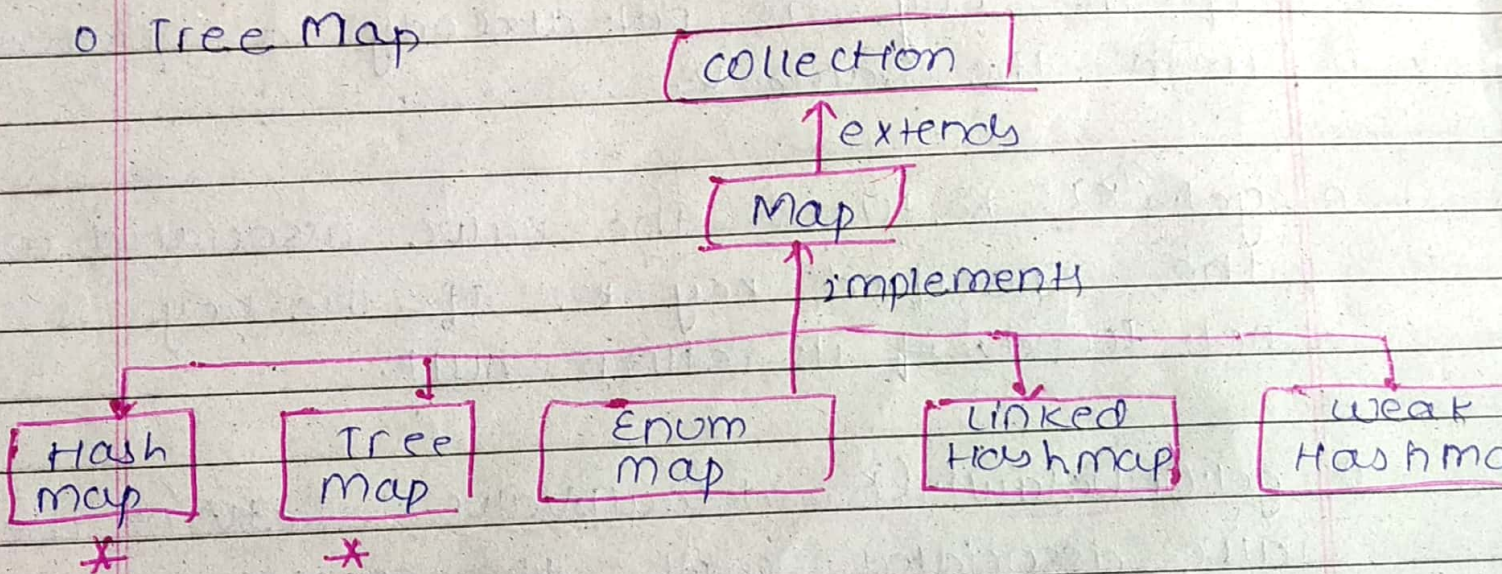
And we have corresponding keys: us, br and es. Now we can access those values using their corresponding keys.



⇒ Map implementation.

Since Map is an interface, we cannot create objects from it. In order to use functionalities of the Map interface, we can use these classes,

- o HashMap
- o Enum Map
- o LinkedHashMap
- o Weak HashMap
- o TreeMap



all the operations are done in constant time.

⇒ Methods of map

- o put(k, v): Inserts the association of a key k and a value v into the map. If the key is already present, the new value replaces the old value.
- o putAll(): Inserts all the entries from the specified map to this map.
- o putIfAbsent(k, v): Inserts the association if the key is not already associated with the value v .
- o get(k): Returns the value associated with the specified key k . If the key is not found, it returns null.
- o getOrDefault(k, defaultValue): Returns the value associated with the specified key k . If the key is not found, it returns `defaultValue`.
- o containsKey(k): Checks if the specified key k is present in the map or not.
- o containsValue(v): Checks if the value v is present or not.
- o replace(k, v): Replace the value of the key k with the new specified value v .

o replace(k, oldValue, newValue): Replaces the value of the key k with the new value newValue only if the key k is associated with the value oldValue.

o remove(k): Removes the entry from the map represented by the key k.

o remove(k, v): Removes the entry from the map that has key k associated with value v.

o keySet(): Returns a set of all the keys present in a map.

o values(): Returns a set of all the values present in a map.

o entrySet(): Returns a set of all the key value mapping present in a map.