**FrameWork(ref oracle)**

* Framework provides a re-usable set of classes and interfaces.
* Collection Framework is simply an object that groups multiple elements into a single unit.
* Collections are used to store, retrieve, manipulate, and communicate aggregate data.
* **collection** **(lowercase c)**, which represents any of the data structures in which objects are stored and iterated over.
* **Collection (capital C)**, which is actually the java.util.Collection interface from which Set, List, and Queue extend. (That's right, extend, not implement. There are no direct implementations of Collection.)
* **Collections (capital C and ends with s)** is the java.util.Collections class that holds a pile of static utility methods for use with collections.

**Contract Of HashCode(Ref.Oracle Docs)**

* Whenever it is invoked on the same object more than once during an execution of a Java application, the hashCode method must consistently return the same integer, provided no information used in equals comparisons on the object is modified. This integer need not remain consistent from one execution of an application to another execution of the same application.
* If two objects are equal according to the equals(Object) method, then calling the hashCode method on each of the two objects must produce the same integer result.
* It is *not* required that if two objects are unequal according to the [equals(java.lang.Object)](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html#equals(java.lang.Object)) method, then calling the hashCode method on each of the two objects must produce distinct integer results. However, the programmer should be aware that producing distinct integer results for unequal objects may improve the performance of hash tables.

**Difference Between hash Table and hashmap**

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| --- | --- |
| **HashTable** | **HashMap** |
| Hashtable is thread safe and synchronized.    Hashtable do not allow null keys and null values  Hashtable is the only class other than vector which uses enumerator to iterate | HashMap is non synchronized and not thread safe  HashMap allows one null key and null values  HashMap object values are iterated by using iterator |

**Difference Between List And Set**

|  |  |
| --- | --- |
| **List** | **Set** |
| It is ordered list  Duplicate values are allowed  We can get the element of a specified index from the list using the get() method.  It is used when we want to frequently access the elements by using the index. | It is a un-ordered list  Duplicate values are not allowed  We cannot find the element from the Set based on the index because it doesn't provide any get method().  It is used when we want to design a collection of distinct elements. |