Java Collection Framework

Java collection framework represents a hierarchy of set of interfaces and classes that are used to manipulate group of objects.

Collections framework was added to Java 1.2 version. Prior to Java 2, Java provided ad hoc classes such as Dictionary, Vector, Stack and Properties to store and manipulate groups of objects.

Java collections framework is contained in java.util package. It provides many important classes and interfaces to collect and organize group of objects.

- **What is collection?**

Collection in java can be referred to an object that collects multiple elements into a single unit. It is used to store, fetch and manipulate data. For example, list is used to collect elements and referred by a list object.

- **Components of Collection Framework**

The collections framework consists of:

Collection interfaces such as sets, lists, and maps. These are used to collect different types of objects.

Collection classes such as ArrayList, HashSet etc that are implementations of collection interfaces.

Concurrent implementation classes that are designed for highly concurrent use.

Algorithms that provide static methods to perform useful functions on collections, such as sorting a list.

- **Advantage of Collection Framework**

It reduces programming effort by providing built-in set of data structures and algorithms.

Increases performance by providing high-performance implementations of data structures and algorithms.

Increase Productivity

Reduce operational time

Versatility to work with current collection as well

- **Important Interfaces of Collection API (Application programming interface)**

Interface	Description
Collection	Enables you to work with groups of object; it is at the top of Collection hierarchy
Deque	Extends Queue to handle double ended queue.
List	Extends Collection to handle sequences list of object.
Queue	Extends Collection to handle special kind of list in which element are removed only from the head.
Set	Extends Collection to handle sets, which must contain unique element.
SortedSet	Extends Set to handle sorted set.

Java Collection Framework Hierarchy