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Advance java

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Collection library of Java

- **Array List**
- **Link List**
- **Queue**
- **Stack**
- **Hash set**
- **Tree set**
- **Vector**
- **Array dequeue**

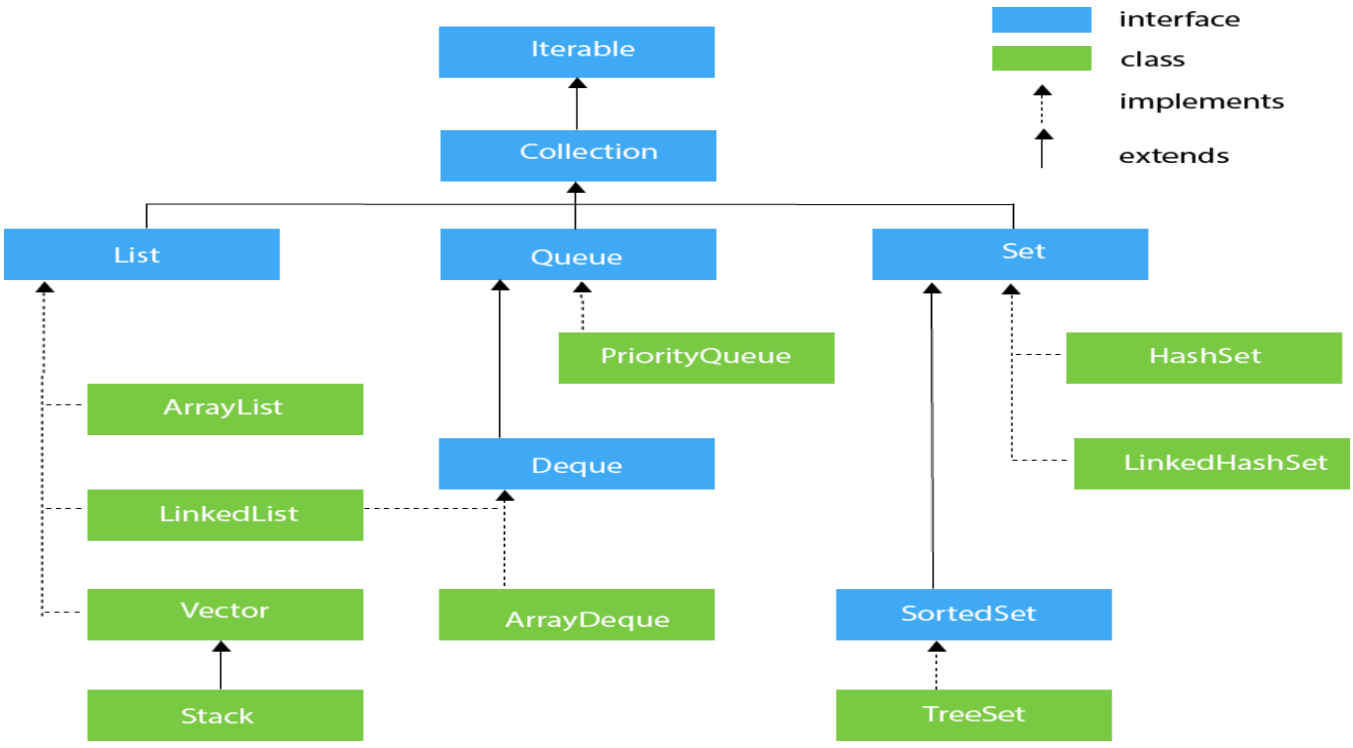
Collections in Java

The Collection in Java is a framework that provides an architecture to store and manipulate the group of objects.

Java Collections can achieve all the operations that you perform on a data such as searching, sorting, insertion, manipulation, and deletion.

Java Collection means a single unit of objects. Java Collection framework provides many interfaces (Set, List, Queue, and Deque) and classes (Array List, Vector, Linked List, Priority Queue, Hash Set, Linked Hash Set, and Tree Set).

Hierarchy of Collection Framework



Array List

The Array List class implements the List interface. It uses a dynamic array to store the duplicate element of different data types. The Array List class maintains the insertion order and is non-synchronized. The elements stored in the Array List class can be randomly accessed.

Linked List

Linked List implements the Collection interface. It uses a doubly linked list internally to store the elements. It can store the duplicate elements. It maintains the insertion order and is not synchronized. In Linked List, the manipulation is fast because no shifting is required.

Vector

Vector uses a dynamic array to store the data elements. It is similar to Array List. However, It is synchronized and contains many methods that are not the part of Collection framework.

Stack

The stack is the subclass of Vector. It implements the last-in-first-out data structure, i.e., Stack. The stack contains all of the methods of Vector class and also provides its methods like Boolean push (), Boolean peek (), Boolean push (object o), which defines its properties.

Priority Queue

The Priority Queue class implements the Queue interface. It holds the elements or objects which are to be processed by their priorities. Priority Queue doesn't allow null values to be stored in the queue.

Array Deque

Array Deque class implements the Deque interface. It facilitates us to use the Deque. Unlike queue, we can add or delete the elements from both the ends. Array Deque is faster than Array List and Stack and has no capacity restrictions.

Hash Set

Hash Set class implements Set Interface. It represents the collection that uses a hash table for storage. Hashing is used to store the elements in the Hash Set. It contains unique items.

Linked Hash Set

Linked Hash Set class represents the Linked List implementation of Set Interface. It extends the Hash Set class and implements Set interface. Like Hash Set, It also contains unique elements. It maintains the insertion order and permits null elements.

Tree Set

Java Tree Set class implements the Set interface that uses a tree for storage. Like Hash Set, Tree Set also contains unique elements. However, the access and retrieval time of Tree Set is quite fast. The elements in Tree Set stored in ascending order.

No	Method	Description
1	public Boolean add(E e)	It is used to insert an element in this collection.
2	public Boolean add All(Collection<? extends E> c)	It is used to insert the specified collection elements in the invoking collection.
3	public Boolean remove(Object element)	It is used to delete an element from the collection.
4	public Boolean remove All(Collection<?> c)	It is used to delete all the elements of the specified collection from the invoking collection.
5	default Boolean remove If(Predicate<? super E> filter)	It is used to delete all the elements of the collection that satisfy the specified predicate.
6	public Boolean retain All(Collection<?> c)	It is used to delete all the elements of invoking collection except the specified collection.
7	public int size()	It returns the total number of elements in the collection.