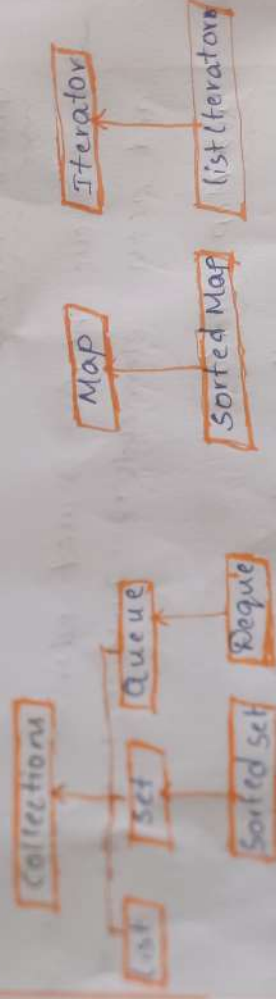


Java Collections Framework

* The Java collections framework provides a set of interface and classes to implement various data structures and algorithms.

* is Linked list

Interfaces of collections Framework:-Java Collection Interface:

- * The Collection interface is the root interface of the Collections framework hierarchy.
- * Java does not provide direct implementations of the Collections interface. It provides implementations of sub-interfaces like List, Set, and Queue.
- * Where all methods of Collection interface are also present in its subinterfaces.

List Interface

- * The list interface is an ordered collection that allows us to add and remove elements like an array.

Set Interface

- * The set interface allows us to store elements in different sets similar to the set in mathematics.
- * It can't have duplicate elements.

Queue Interface

- * The Queue interface is used when we want to store and access elements in First in, First out manner.

Java Map Interface

- * The Map interface allows elements to be stored in Key/Value pair.

Java Iterator Interface

- * The Iterator interface provides methods that can be used to access elements of collections.

ArrayList Class of Collections

- * ArrayList class allows us to create resizable arrays.
- * The class implements the List interface.

Methods of collection:

* The collection Interface includes various methods that can be used to perform different operations on objects. These methods are available in all its subinterfaces.

- * `add()` - insert a specified element.
- * `size()` - returns size of collection.
- * `remove()` - removes a specified element.
- * `iterator()` - returns an iterator to access elements of collection.
- * `addAll()` - add all elements of a specified collection to the collection.
- * `removeAll()` - remove all elements of the specified collection from the collection.
- * `clear()` - remove all elements of collection.

Java List:

* It has four types -

① Array list

② Linked list

③ Stack

④ Vector.

Methods of list

- add()
- addAll()
- get()
- iterator()
- set()
- remove()
- removeAll()
- clear()
- Size()
- toArray()
- contains()

Array List:-

Methods:-

- Size()
- Sort()
- clone()
- contains()
- ensureCapacity()
- isEmpty()
- indexOf()

Vector:

Creating Vector — `Vector<Type> vector = new Vector<>();`

• Methods of vector are similar to list-type Arraylist.

• Other vector methods are —

• `set()`

• `size()`

• `toArray()`

• `toString()`

• `contains()`

• Add Elements, Access Elements, Remove elements are methods of vector.

Java Stack Class

• Having — `push()` Method

• `pop()` Method

• `peek()` Method

• `search()` Method

• `empty()` Method.

Java Queue Interface

* ArrayDeque, Linked list, Priority Queue implements the Queue.

* Deque, BlockingQueue, BlockingDeque will extends Queue.

Methods

- add()
- offer()
- element()
- peek()
- remove()
- poll()

Java PriorityQueue

Methods

- * Insert elements
- * Access elements
- * Remove Priority Queue elements
- * Iterating Over a Priority Queue.
- * contain(element) } other Methods.
- * size()
- * toArray()

Java Set Interface

* Classes —

- HashSet
 - LinkedHashSet
 - EnumSet
 - TreeSet
- ### * Extends —
- SortedSet

* Navigable set:

Methods of Set:

- add()
- addAll()
- iterator()
- remove()
- removeAll()
- retainAll()
- clear()
- size()
- toArray()
- contains()
- containsAll()
- hashCode()

Operations of set

- Union
- Intersection
- subset.