

Java Collections class

Java collection class is used exclusively with static methods that operate on or return collections. It inherits Object class.

The important points about Java Collections class are:

- Java Collection class supports the **polymorphic algorithms** that operate on collections.
- Java Collection class throws a **NullPointerException** if the collections or class objects provided to them are null.

Collections class declaration

Let's see the declaration for Java.util.Collections class.

```
public class Collections extends Object
```

Methods of Java Collections class

| Method | Description |
|---|---|
| static <T> boolean addAll(Collection<? super T> c, T... elements) | It is used to add all of the specified elements to the specified collection. |
| static <T> Queue<T> asLifoQueue(Deque<T> deque) | It is used to return a view of a Deque as a Last-In-First-Out (LIFO) Queue. |
| static <T> int binarySearch(List<? extends T> list, T key, Comparator<? super T> c) | It is used to search the specified list for the specified object using the binary search algorithm. |
| static <E> List<E> checkedList(List<E> list, Class<E> type) | It is used to return a dynamically typesafe view of the specified list. |
| static <E> Set<E> checkedSet(Set<E> s, Class<E> type) | It is used to return a dynamically typesafe view of the specified set. |

| | |
|--|---|
| static <E> SortedSet<E> checkedSortedSet(SortedSet<E> s, Class<E> type) | It is used to return a dynamically typesafe view of the specified sorted set |
| static void reverse(List<?> list) | It is used to reverse the order of the elements in the specified list. |
| static <T> T max(Collection<? extends T> coll, Comparator<? super T> comp) | It is used to return the maximum element of the given collection, according to the order induced by the specified comparator. |
| static <T extends Object & Comparable<? super T>>T min(Collection<? extends T> coll) | It is used to return the minimum element of the given collection, according to the natural ordering of its elements. |
| static boolean replaceAll(List list, T oldVal, T newVal) | It is used to replace all occurrences of one specified value in a list with another. |

Java Collections Example

```
import java.util.*;

public class CollectionsExample {

    public static void main(String a[]){

        List<String> list = new ArrayList<String>();

        list.add("C");

        list.add("Core Java");

        list.add("Advance Java");

        System.out.println("Initial collection value:"+list);

        Collections.addAll(list, "Servlet","JSP");

        System.out.println("After adding elements collection value:"+list);

        String[] strArr = {"C#", ".Net"};

        Collections.addAll(list, strArr);

        System.out.println("After adding array collection value:"+list);

    }

}
```

Output:

```
Initial collection value:[C, Core Java, Advance Java]
After adding elements collection value:[C, Core Java, Advance Java, Servlet, JSP]
```

After adding array collection value:[C, Core Java, Advance Java, Servlet, JSP, C#, .Net]

Java Collections Example: max()

```
import java.util.*;

public class CollectionsExample {

    public static void main(String a[]){

        List<Integer> list = new ArrayList<Integer>();

        list.add(46);
        list.add(67);
        list.add(24);
        list.add(16);
        list.add(8);
        list.add(12);

        System.out.println("Value of maximum element from the collection: "+Collections.max(list));

    }

}
```

Output:

Value of maximum element from the collection: 67

Java Collections Example: min()

```
import java.util.*;

public class CollectionsExample {

    public static void main(String a[]){

        List<Integer> list = new ArrayList<Integer>();

        list.add(46);
        list.add(67);
        list.add(24);
        list.add(16);
        list.add(8);
        list.add(12);

        System.out.println("Value of minimum element from the collection: "+Collections.min(list));

    }

}
```

```
}  
}
```

Output:

```
Value of minimum element from the collection: 8
```

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