**ArrayList**

**Q- How will you remove a duplicate elements from an ArrayList ?**

* There are two ways to remove a duplicate elements from an ArrayList.

1. linkedhash set and
2. java 8 stream APIs

* if you really want to you remove the duplicate elements in your framework also or if in your program, you can use/

1. **Using Linked hash set.**

**L**inkedHashset is coming from Set interface. So linked Hash set is a class which is implementing set.

LinkedHash set does not maintain any order and indexing. That’s why ramdom access is not possible and duplicate elements are not possible.

Steps to be considered – to remove duplicate ele from ArrayList

1. Create the object of linkedHashSet and then
2. pass the ArrayList reference name inside the linked headset constructor

like this – [>(arrlistnum);- This is constructor of the list]

LinkedHashSet <Integer> linkedhashSet= **new** LinkedHashSet<Integer>(arrlistnum);

1. Create a list without duplicate list . So create one ArrayList and inside the constructor pass this linked hash set. Like this

**ArrayList <Integer> numberListWithoutDuplicate = new ArrayList<Integer>(linkedhashSet);**

1. **Print using Syso.** then
2. Give the final list after removing . it means we will be getting the distinct value. Not the duplicate value.

B – Using jdk8 –stream. Use Stream()

1. Create an ArrayList With duplicate element like this –

ArrayList <Integer> arrlistnums = **new** ArrayList<Integer>(Arrays.*asList*(1,2,3,3,4,1,5,5,6,7,8,9,10));

1. Using this ref [arrlistnums] called Stream() and Distinct(). Here Distinct🡪 means unique value not duplicate .
2. Then call -🡪 dot collect and this collect in the form of **collectors** dot then toList().
3. Print the final without duplicate ArrayLsit

Here—

1) stream is a method which will return one stream class object.

2) distinct method -it will return a new stream which is having the unique element and

3) then from this stream what I want to collect asList. So simple collect as a list store in this particular list and then

4) print it.

==========================x======================================

**package** com.linkedlist;

**import** java.util.ArrayList;

**import** java.util.Arrays;

**import** java.util.LinkedHashSet;

**import** java.util.LinkedList;

**import** java.util.List;

**import** java.util.stream.Collectors;

**import** org.testng.annotations.Test;

**public** **class** {

@Test

**public** **void** removeDuplicateele() {

ArrayList <Integer> arrlistnum = **new** ArrayList<Integer>(Arrays.*asList*(1,2,2,3,4,1,5,6,3,7,8,9,10));

//Step 1 -create object of LinkedHashSet and Pass the ArrayList reference name.

LinkedHashSet <Integer> linkedhashSet= **new** LinkedHashSet<Integer>(arrlistnum);

//(linkedhashSet)- this is construtor of the ArrayList

ArrayList <Integer> numberListWithoutDuplicate = **new** ArrayList<Integer>(linkedhashSet);

System.***out***.println(numberListWithoutDuplicate);

System.***out***.println("==================================");

// use Java -8-Stream()

ArrayList <Integer> arrlistnums = **new** ArrayList<Integer>(Arrays.*asList*(1,2,3,3,4,1,5,5,6,7,8,9,10));

List<Integer> listwithoutduplicate=arrlistnums.stream().distinct().collect(Collectors.*toList*());

System.***out***.println(listwithoutduplicate);

}}

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