

ArrayList

FEATURE OF ARRAYLIST

- **ArrayList can change size at runtime if needed.**
- **ArrayList is an ordered sequence.**
- **ArrayList allows the store duplicate element.**
- **It is coming from the java util package.**
- **ArrayList requires an import.**

IMPORT STATEMENT

- `java.util.*`
- `java.util.ArrayList`

How to Create the ArrayList

WHAT THE APP DID.

```
ArrayList list=new ArrayList();
```

```
ArrayList list1=new ArrayList(10);
```

```
ArrayList list2=new ArrayList(list1);
```

```
ArrayList <Integer> list3=new ArrayList<>();
```

```
ArrayList <Integer> list4=new ArrayList<Integer>();
```

WHAT THE APP DID.

ArrayList also implements the **List**.

Since it implements the **List** we can create **ArrayList** with following syntax:

```
List <String> list1=new ArrayList<>();
```

NOTE: However reverse syntax will not work.

```
ArrayList<String> list2=new List<>();
```

WHAT THE APP DID.

Methods in ArrayList

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ADD METHOD

- This method insert the value to the ArrayList
- This method can take directly the element as a parameter or it can take the index number and element.

METHOD SIGNATURE

- `add(E element);`
- `add(int index, E element);`

EXAMPLE

- `ArrayList items=new ArrayList();`
- `items.add("apple");`
- `items.add("banana");`
- `items.add(Boolean.true);`

QUESTION

- `ArrayList <String>items=new ArrayList<>();`
- `items.add("apple");`
- `items.add("banana");`
- `items.add(Boolean.true);`
- Does this code compile and run? Why?

EXAMPLE

- **List items=new ArrayList<>();**
- **items.add("apple");**
- **items.add(1, "banana");**
- **items.add(0, "orange");**
- **items.add(1, "strawberry");**

QUESTION

- **List items=new ArrayList<>();**
- **items.add("apple");**
- **items.add(1, "banana");**
- **items.add(1, "strawberry");**
- **items.add(5, "strawberry");**
- **Does this code compile and run? Why?**

WHAT THE APP DID.

GET() METHOD IN ARRAYLIST

- It help us the get the element from the **ArrayList**
- If the given index is bigger than the size of array it will **throws an exception.**

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REMOVE() METHOD

- **Remove method removes the first matching value in the ArrayList or remove the element at a specified index.**

METHOD SIGNATURE

- **boolean remove(Object object);**
- **E remove(int index);**

EXAMPLE

- **List animal=new ArrayList ();**
- **animal.add("lion");**
- **animal.add("dog");**
- **animal.add("cat");**
- **animal.remove("dog");**
- **animal.remove("dog");**
- **animal.remove(0);**
- **animal.remove(4);**

SET() METHOD

- Set method changes one of the elements of the ArrayList on specific location. It will not change the size of the ArrayList.
- **List animal=new ArrayList<>();**
- **animal.add("lion");**
- **animal.add("cat");**
- **animal.set(0, "dog");**
- **System.out.println(animal.get(0));**
- **items.set(3,"lion");**

ISEMPTY() AND SIZE() METHOD

- **isEmpty()** method check the ArrayList is empty or not.
Return true or false;
- **size()** method returns the size of ArrayList as a int value.

CONTAINS() METHOD

- **contains()** method check whether a specified value is in the **ArrayList** or not. This method returns **boolean** value.
- **List drinks=new ArrayList<>();**
- **drinks.add("Pepsi");**
- **drinks.add("Tea");**
- **drinks.add("Coffee");**
- **System.out.println(drinks.contains("Coffee"));**
- **System.out.println(drinks.contains("Green Tea"));**

CLEAR() METHOD

- **clear() method delete all the element of ArrayList.**

WHAT THE APP DID.

CONVERTING FROM ARRAYLIST TO ARRAY

- **To be able to convert ArrayList to array we can use the `toArray` method.**

EXAMPLE

- **List meal=new ArrayList<>(19);**
- **System.out.println(ls9.size());**
- **meal.add("Beef Bowl");**
- **meal.add(1,"Chicken");**
- **System.out.println(meal.get(0));**
- **Object [] restaurant=meal.toArray();**

CONVERTING FROM ARRAY TO ARRAYLIST

- **To be able to convert Array to ArrayList we can use the `asList()` method.**

EXAMPLE

- **String [] city={"town", "Street"};**
- **List <String> city1= Arrays.asList(city);**
- **System.out.println(city1.size());**
- **city1.add("suburb");**
- **city1.remove(0);**
- **city1.set(0, "suburb");**
- **Does this code compile and run? Why?**