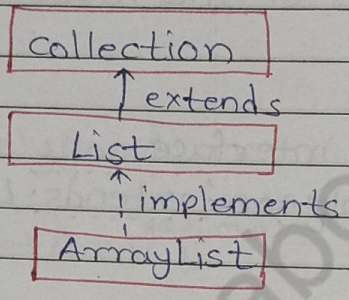
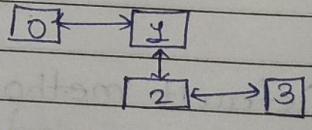
Arraylist (dynamic array)

(This ment to be after Array part.)

- This is modified version of array.
- The Arraylist class of Java collections framework provides the functionality of resizable-arrays.
- It implements List interface.



Array	ArrayList
- continuous memory - fixed size	- Non continuous memory - variable in size
- array [0 | 1 | 2 | 3]	- Arraylist 
- primitive data and objects can be stored	- we can only store objects - ~~Created~~ in heap.

Creating Arraylist

- import ArrayList package java.util.ArrayList
- Syntax: ArrayList<type> = new ArrayList<>();

Type indicates type of an arraylist

e.g.

```
// Create Integer type arraylist
Arraylist<Integer> AL = new Arraylist<>();
```

Here we can specify initial capacity. def is 10

we can only add integers here.

> Integer is not int

It is bec we can't use primitive types while creating an arraylist. So we use corresponding wrapper classes.

> we can perform various methods on arraylist like add(), remove(), set(), sort(), etc.

> We can create it like

```
Arraylist newlist = new Arraylist();
// Here no type is specified we can add any type
   of element in this like String, Integers, etc.
// "Anand", 19.06f, 196, 19.60, 'A" ....
```

> Default size of Arraylist is 10

> If we want to add 11th element then new LinkedList will be created internally by using formula | old size × 3/2 + 1 |

Here, $10^{5} \times \frac{3}{2_1} + 1 \Rightarrow 15 + 1 \Rightarrow 16$

Arraylist with 16 elements will get created and old arraylist get copied in new and old one get destroyed.