

# ⇒ ArrayList (dynamic in nature)

Note:- AL can only store objects

array → static  
arraylist → dynamic

Ex:- Integer, Boolean, String, Double, Character etc.  
(Wrapper classes)

Syntax:-

ArrayList < DataType > arr = new ArrayList < > ();

Ex:-

ArrayList<Integer> arr = new ArrayList<>();

↳ arraylist of size zero

Inbuilt function

1) arr.size(); // give size of AL

## 2) add elements in AL

syntax

`arr.add(val);` → add element at the end of arraylist

code

```
public static void main(String[] args) {
```

```
    ArrayList<Integer> arr = new ArrayList<>(); → size = 0
```

```
    arr.add(5); → [ 5 ] size = 1
```

```
    arr.add(2); → [ 5 | 2 ] size = 2
```

```
    arr.add(3); → [ 5 | 2 | 3 ] size = 3
```

```
    arr.add(-10); → [ 5 | 2 | 3 | -10 ] size = 4
```

```
}
```

2) How to access element at index  $i$

syntax

$arr.get(index);$

code

```
public static void main(String[] args) {  
    ArrayList<Integer> arr = new ArrayList<>();  
    arr.add(5);  
    arr.add(2);  
    arr.add(3);  
    arr.add(-10);  
    System.out.println( arr.size() );  
    System.out.println( arr.get(1) );  
}
```

→ print 4  
→ print 2

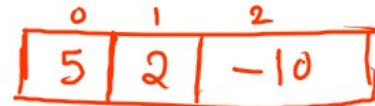
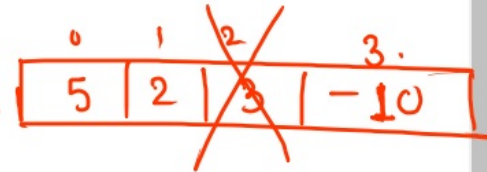
### 3) delete elements from arraylist

syntax

`arr.remove(index);`

code


```
public static void main(String[] args) {  
    ArrayList<Integer> arr = new ArrayList<>();  
    arr.add(5);  
    arr.add(2);  
    arr.add(3);  
    arr.add(-10);  
    System.out.println( arr.size() );  
    System.out.println( arr.get(2) );  
  
    arr.remove(2);  
    System.out.println( arr.size() );  
    System.out.println( arr.get(2) );  
}
```



additionally

arr =

0	1	2	3	4	5
2	5	3	7	2	-4

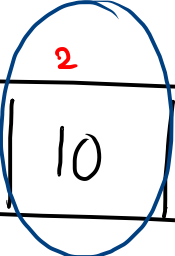


syntax

arr.add(index, val);

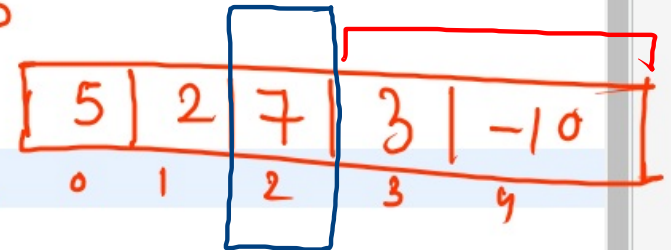
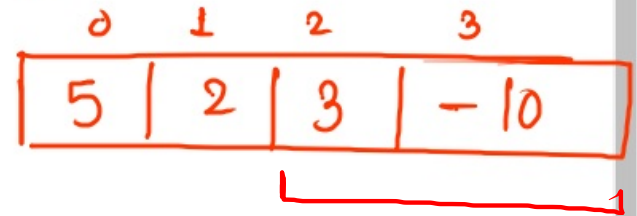
arr.add(2, 10);

0	1	2	3	4	5	6
2	5	10	3	7	2	-4



# code

```
public static void main(String[] args) {  
    ArrayList<Integer> arr = new ArrayList<>();  
    arr.add(5);  
    arr.add(2);  
    arr.add(3);  
    arr.add(-10);  
    System.out.println( arr.get(2) );  
    arr.add(2, 7);  
    System.out.println( arr.get(2) );  
}
```



→ How to print all elements in AL

```
public static void main(String[] args) {  
    ArrayList<Integer> arr = new ArrayList<>();  
    arr.add(5);  
    arr.add(2);  
    arr.add(3);  
    arr.add(-10);  
    arr.add(2, 7);  
    for (int i = 0; i < arr.size(); i++) {  
        System.out.print( arr.get(i) + " " );  
    }  
}
```



# ArrayList Printing

```
public static void main(String[] args) {  
    Scanner scn = new Scanner(System.in);  
    ArrayList<Integer> arr = new ArrayList<>();  
    int n = scn.nextInt();  
    for (int i = 0; i < n; i++) {  
        int val = scn.nextInt();  
        arr.add(val);  
    }  
  
    // print  
    for (int i = 0; i < n; i++) {  
        System.out.print(arr.get(i) + " ");  
    }  
}
```