ArrayLists

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Java

Starting with Arrays

What's the downfall of arrays?

int [] arr = new int[5];

Index	Value
0	
1	
2	
3	
4	

Starting with Arrays

What's the downfall of arrays?

int [] arr = new int[5];

They have a size limit!

Introducing ArrayLists

ArrayLists

- Java Class
- Size of ArrayList is modifiable
- Stores values just like an Array

import java.util.ArrayList;

Creating an ArrayList

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

This creates an empty ArrayList that can store Strings.
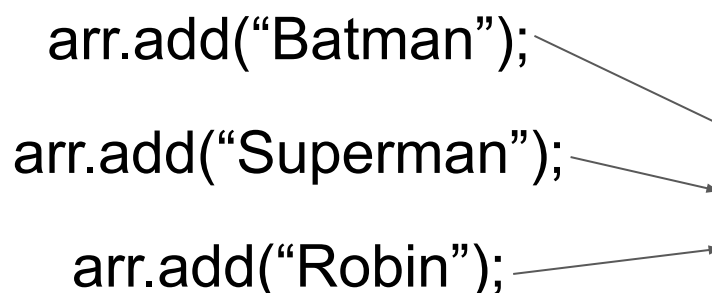
Adding a Value

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

arr.add("Batman");

arr.add("Superman");

arr.add("Robin");

Index	Value
0	Batman
1	Superman
2	Robin

Add method appends the given value to the end of the ArrayList

Creating an ArrayList with a set **capacity**

ArrayList <String> arr = new ArrayList<String>(3);

This creates an empty ArrayList of size 3 (just like an array)

Index	Value
0	
1	
2	

Capacity doesn't mean size.

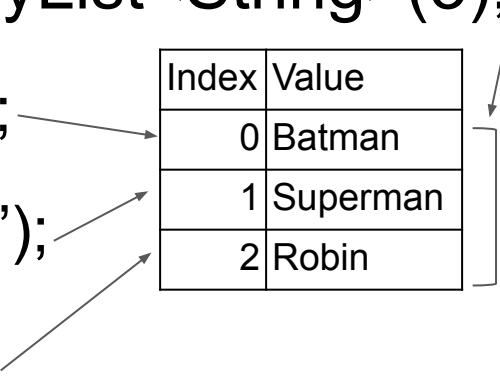This capacity does change.

Size is how many elements are in the set.

Adding a Value with initialized **capacity**

ArrayList <String> arr = new ArrayList<String>(3);

arr.add("Batman");

arr.add("Superman");

arr.add("Robin");

Index	Value
0	Batman
1	Superman
2	Robin

Add adds the end of the ArrayList!

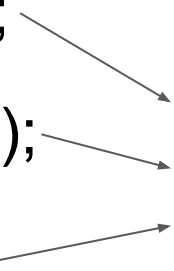# Adding a Value with initialized size

ArrayList <String> arr = new ArrayList<String>(3);

arr.add(0, "Batman");

arr.add(1,"Superman");

arr.add(2, "Robin");

This adds at an index, moving everything else!

Index	Value
0	Batman
1	Superman
2	Robin
3	
4	
5	

Accessing a Value

The **get method** takes in an index of what value you want to access. It returns the value at that index.

arr.get(int index);

Accessing a value

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

arr.add(0, "Batman");

arr.add(1,"Superman");

arr.add(2, "Robin");

System.out.print(**arr.get(1)**);

This prints "Superman"

Index	Value
0	Batman
1	Superman
2	Robin

Lab: ArrayList

1. Create an empty ArrayList of String cookies
2. Take in an integer input from the user
   a. This is how many cookies
3. Add that many cookies to your ArrayList
4. Print out your entire cookie ArrayList