

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

Creating an ArrayList

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

This creates an empty ArrayList that can store Strings.

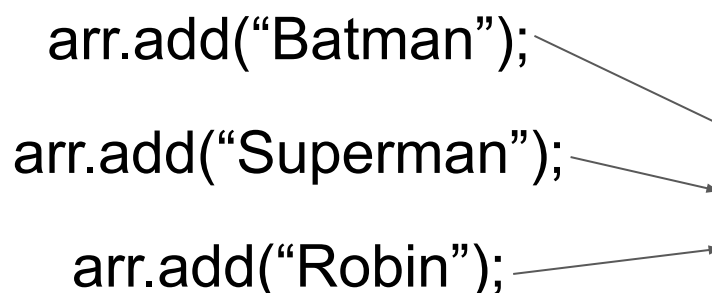
Adding a Value

```
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 size

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

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

Index	Value
0	
1	
2	

Adding a Value with initialized size

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

```
arr.add("Batman");
```

```
arr.add("Superman");
```

```
arr.add("Robin");
```

Index	Value
0	
1	
2	
3	Batman
4	Superman
5	Robin

Add adds the end of the ArrayList!

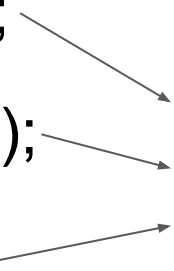
Adding a Value with initialized size

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

```
arr.add(0, "Batman");
```

```
arr.add(1, "Superman");
```

```
arr.add(2, "Robin");
```



Index	Value
0	Batman
1	Superman
2	Robin
3	
4	
5	

This adds at an index, moving everything else!

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