

# Arrays

`int[] myArray = { 1, 33, 4 };` <sup>index: 0 1 2</sup>  $\Rightarrow$  length = 3

`System.out.println(myArray[2]);`

`String[] names = { "James", "Logan", "Narij" };`

```
for (int i = 0; i < myArray.length; i++) {  
    System.out.println(myArray[i]);  
}
```

`int[] newArray = new int[4];` <sup>length of the array</sup>  
<sup>length "4" index: 0, 1, 2, 3</sup>  
`newArray[0] = 10;`

\* **Note:** `System.out.print();`  $\rightarrow$  print msg in same line

`System.out.println();`  $\rightarrow$  print msg in new line

## ArrayList

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

$\hookrightarrow$  Only store strings in array list

ArrayList name = new ArrayList();

name.add(1);

↑ Can store different types of data

name.add("logan");

System.out.println(name); → print out [1, logan]

System.out.println(name.get(3)); index

```
for (int i=0; i < name.size(); i++) {  
    System.out.println(name.get(i));  
}
```

→ Means: for Object in names

```
for (Object n : name) {
```

Call every Obj in names "n"

```
    System.out.println(n);
```

Similar to Python:

`for n in name`

```
}
```

## Passing Array as a Method Params

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

```
    int[] numbers = { 1, 2, 3, 4 };
```

```
    test(numbers);
```

```
{  
}
```

```
public static void test(int[] nums){
```

```
    if (nums.length > 0) { → make sure input isn't empty
```

```
        for (int i=0; i<nums.length; i++){
```

```
            //....
```

```
        }
```

```
    }
```

```
}
```

## Passing Object as a Method Params

\*. Employer.java

```
public class Employer {
```

```
    public void employeeDetails(Employee employee){
```

```
        System.out.println(employee.getId());
```

```
    }
```

```
}
```

## HashMap (key-value pairs)

\* **Import** before using: `import java.util. HashMap;`

**Declare**

`HashMap <String, Integer> test = new HashMap<>();`

`test.put ("James", 100);`

`test.put ("logan", 10);`  
                    key      value

`System.out.println ( test.get("James"));` → output 100

`test.size();` → 2

`test.remove ("James");`

`test.clear();`

→ 將各個 key 給 item

`for (String item : test.keySet()) {`

`System.out.println (item);` → James  
    logan  
}

`for (int item : test.values()) {`

`System.out.println (item);` → 100  
    10  
}

`for (String item : test.keySet()) {`

`System.out.println ("key: " + item +`

}

"value: " + test.get(item);

↳ use key to get item

\* 整理:

ArrayList

.add(obj)  
.get(index)

for (Object n : arrayList)

HashMap

.put(key, value)  
.remove(key)  
.clear()  
.size()

for (String i : obj.keySet())

(int i : obj.values())

## Sorting Array

\* **Import** before using: `import java.util. Arrays;`

`int[] arr = { 3, 12, 0, 1 };`

`Arrays.sort(arr);`

