

Arrays (Chapter 6)

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Array Argument/Parameter (1/1)

```
1  class Tool{
2      void swap(int [] both){
3          int tmp = both[0];
4          both[0] = both[1];
5          both[1] = tmp;
6      }
7  }
8  public class Demo{
9      public static void main(String [] arg){
10         Tool t = new Tool();
11         int [] arr = new int [2];
12         arr[0] = 3; arr[1] = 5;
13         t.swap(arr);
14         System.out.println ( arr [0] );
15         System.out.println ( arr [1] );
16     }
17 }
```

- array is just special reference, same calling mechanism

Array Argument/Parameter: Key Point

array is like other extended types in return value, parameter passing, assignment (=), reference equal (==)

For Each (1/1)

hard to understand
(first time)
內部運作

faster programming

```
1  class Util{
2      public static double avg(double [] arr){
3          double res = 0.0;
4          int i;
5          for(i=0;i<arr.length;i++) res += arr[i];
6          return res / arr.length;
7      }
8      public static double cool_avg(double [] arr){
9          double res = 0.0;
10         for(double element: arr) res += element;
11         return res / arr.length;
12     }
13 }
```

快
減少 bug
「保證」

ele = 3 j

沒有時間

- special for (called **for each**) that automatically enumerates all the elements within a collection

不能對 "i" 下手

For Each: Key Point

for each: an elegant tool to be kept in your toolbox

Variable-Length Argument List (1/1)

```
1  class Util{
2      public static double cool_avg(double [] arr){
3          double res = 0.0;
4          for(double element: arr) res += element;
5          return res / arr.length;
6      }
7      public static double even_cooler_avg(double ... arr){
8          double res = 0.0;
9          for(double element: arr) res += element;
10         return res / arr.length;
11     }
12 }
13
14 System.out.println(Util.cool_avg(new double [] {1, 5, 3, 2}));
15 System.out.println(Util.cool_avg(new double [] {1, 2, 3}));
16 System.out.println(Util.even_cooler_avg(1, 5, 3, 2));
17 System.out.println(Util.even_cooler_avg(1, 2, 3));
18 double [] a = {1, 2, 4};
19 System.out.println(Util.cool_avg(a));
20 System.out.println(Util.even_cooler_avg(a));
```

- a “syntactic sugar” after Java 5

Variable-Length Argument List: Key Point

variable-length arguments: another good tool that roots from arrays