

Immutable array

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Java array is mutable, meaning the elements in an array can be changed. However, to make an array immutable, you can use the Vector class.

Make an array final does not mean it is immutable, because the value stored in an array variable is just the memory address where the actual array is located, not the array itself. Therefore, making the array reference final, only guarantees that the variable always refers to the same array, but the values in the array can be changed.

An example of incorrect implementation of immutable array

```
public class test
{
    public static void main(String[] args)
    {
        final int[] b = {1, 2};
        int[] a = b;
        a[0] = 3;
        System.out.println(a[0]);
        System.out.println(b[0]);
    }
}
```

Copy the memory address of the array to a new reference variable allows you to change the elements in that array through that newly created reference variable

```
~/IdeaProjects/Algorithms_4th_edition/src> javac test.java
~/IdeaProjects/Algorithms_4th_edition/src> java test
3
3
```