How To Java Tutorials

Lesson 5
Java Variables

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Java Variables

Any Developer Now what variable is. It is a container of Data Like a box with specifics data type and properties As all programming languages Java has some kinds of Variables .

Java language defines the following kinds of variables:

Instance Variables (Non-Static Fields):

Technically speaking, objects store their individual states In "non-static fields", that is, fields declared without the Static keyword. Non-static fields are also known as Instance variables because their values are unique to each Instance of a class (to each object, in other words).

Class Variables (Static Fields)

A class variable is any field declared with the static modifier This tells the compiler that there is exactly one copy of this Variable in existence, regardless of how many times the class Has been instantiated.

Local Variables

Similar to how an object stores its state in fields, a method Will often store its temporary state in local variables. The Syntax for declaring a local variable is similar to declaring a Field (for example, int count = 0;). There is no special keyword Designating a variable as local; that determination comes Entirely from the location in which the variable is declared — Which is between the opening and closing braces of a method. As such, local variables are only visible to the methods in Which they are declared; they are not accessible from the rest Of the class.

Parameters

You've already seen examples of parameters,In the main Method of the "Hello World!" application. Recall that the Signature for the main method is **public static void main(String[] args).** Here, the args Variable is the parameter to this method.
Also in the Hello World app we talk about println method And said its take string parameter to print it to the screen This variable is the parameter of the method.

CODEING

Creating Variables Demo

Primitive Data Types

The Java programming language is statically-typed, which Means that all variables must first be declared before they Can be used. the Java programming language supports 8 Primitive data types. Plus String A primitive type is Predefined by the language and is named by a reserved Keyword. Primitive values do not share state with other Primitive values.

Byte:

The byte data type is an 8-bit, It has a minimum value Of -128 and a maximum value of 127 (inclusive).

Short:

The short data type is a 16-bit .It has a minimum Value of -32,768 and a maximum value of 32,767 (inclusive)..

Int:

By default, the int data type is a 32-bit, Which has a Minimum value of (-2)^31 and a maximum value of ((2)^31)-1.

Long:

The long data type is a 64-bit. The signed long has a Minimum value of (-2)^63 and a maximum value of (2)^63-1.

Float:

The float data type is a single-precision 32-bit IEEE 754 Floating point.

Double:

The double data type is a double-precision 64-bit IEEE 754 Floating point.

Boolean:

The boolean data type has only two possible values: true And false. Use this data type for simple flags that track True/false conditions.

Char:

:The char data type is a single 16-bit Unicode character. It Has a minimum value of '\u0000' (or 0) and a maximum Value of '\uffff'

String:

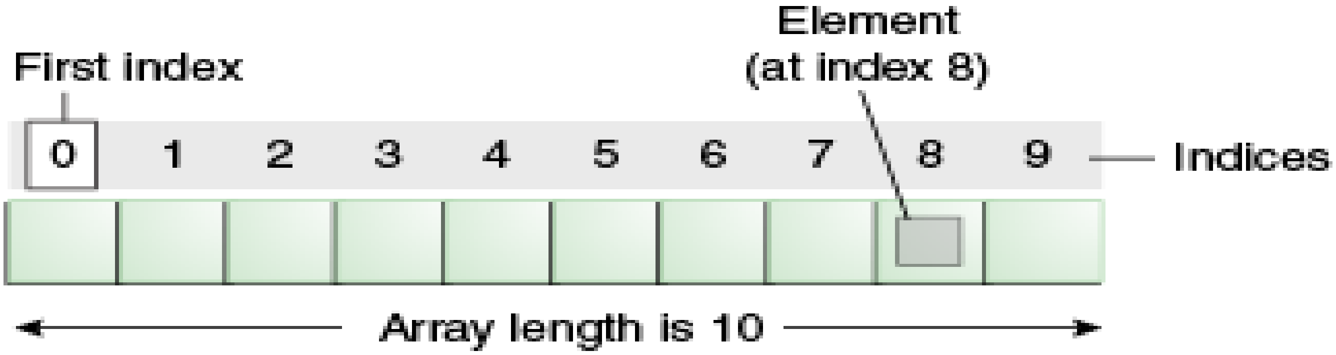
The String class is not technically a primitive data type, but Considering the special support given to it by the language, You'll probably tend to think of it as such.
Enclosing your character string within double quotes will Automatically create a new String object.

CODEING

Creating Data type Demo

Arrays

An array is a container object that holds a fixed number of Values of a single type. The length of an array is Established when the array is created. After creation, its Length is fixed. You have seen an example of arrays Already, in the main method of the "Hello World!" app.



Each item in an array is called an element, and each Element is accessed by its numerical index. As shown Above , numbering begins with 0. The 9th element, for Example, would therefore be accessed at index 8

CODEING

Creating Array Demo

Creating, Initializing, and Accessing an Array

One way to create an array is with the new operator. The next statement in the ArrayDemo program allocates An array with enough memory for 10 integer elements And assigns the array to the anArray variable.

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Creating, Initializing, and Accessing an Array

Multidimensional Array

You can also declare an array of arrays (also known as a Multidimensional array) by using two or more sets of Brackets, such as String[][] names. Each element, therefore, Must be accessed by a corresponding number of index Values.

Creating Multidimensional Array

Array Manipulations

Arrays are a powerful and useful concept used in programming. Java SE provides methods to perform some of the most common manipulations related to arrays. (common tasks, such as copying, sorting and searching arrays). In java.util.Arrays and System class

Copying Arrays Demo

The System class has an arraycopy method that you can use to efficiently copy data from one array into another:

Arraycopy paramters

```
public static void arraycopy(Object src, int srcPos,
        Object dest, int destPos, int length)
```

The following program, *ArrayCopyDemo*, declares an array of char elements, spelling the word "Zteamjava." It uses the System.arraycopy method to copy a subsequence of array components into a second array:

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Creating Copying Arrays

The previous example can be modified to use the copyOfRange Method of the java.util.Arrays class, as you can see in the ArrayCopyOfDemo example. The difference is that using the CopyOfRange method does not require you to create the Destination array before calling the method, because the Destination array is returned by the method

CODEING

Lesson Assignment

As We start to make our hand dirty in code every lesson We will end with as task you are free to make it or not But I recommend you to make it done to achieve the lesson Goal ans practice your self for the lesson contents

Assignment

Make a simple Java application
That create an array of int with
Length of 20 elements
Put some integer numbers in each of
Its elements And then

1-Print all elements of the array

2-Print the addition of the even indexes
Subtracted by the addition of The odd
indexes (in → index of array).

ex(in0+in2+in4..+in20)-(in1+in3..+in19)

Thank You For Watching

I am still not Better, But I always try .

See You Next