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OBJECT-ORIENTED PROGRAMMING

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1. Primitive Data in Java

The Java language is a static language. Commonly, the type of variable is defined, the type of data and therefore all variables will have a data type assigned.

The Java language consists of a number of primitive data types:

- byte
- short
- int
- long
- float
- double
- boolean
- char

✓ **byte**

Represents a signed 8-bit data type. In such a way that you can store the numeric values from -128 to 127.

✓ **short**

Represents a signed 16-bit data type. This way it stores numeric values from -32,768 to 32,767.

- ✓ **int**

It is a signed 32-bit data type for storing numeric values. Whose minimum value is -231 and the maximum value 231-1.

- ✓ **long**

It is a signed 64-bit data type that stores numeric values between -263 to 263-1.

- ✓ **float**

It is a data type for storing 32-bit single precision floating point numbers.

- ✓ **double**

It is a data type for storing 64-bit double precision floating point numbers.

- ✓ **boolean**

Used to define Boolean data types. That is, those that have a value of true or false. It occupies 1 bit of information.

- ✓ **char**

It is a data type that represents a single 16-bit Unicode character.

Default values of primitive data types

In the case that we define a variable, they carry the following values:

Primitive Data	Default value
Byte	0
Short	0
Int	0
Long	0L
Float	0.0f
Double	0.0d
Char	'u0000'
String (o cualquier objeto)	null
Boolean	false

VARIABLES DE TIPOS PRIMITIVOS.					
Nombre	**Tipo**	**Tamaño**	**Valor por defecto**	**Forma de inicializar**	**Rango**
Boolean	Lógico	1 bit	False	Boolean a=true	True-false
Char	Carácter	16 bits	Null	Char a='Z'	Unicode
Byte	Numero entero	8 bits	0	Byte a =0	-128 a 127
Short	Numero entero	16 bits	0	Short a =12	-32.768 a 32.767
Int	Numero entero	32 bit	0	Int a= 1250	-2.147.483.648 a 2.147.483.649
Long	Numero entero	64 bits	0	Long a= 125000	-9*10^18 a 9*10^18
Float	Numero real	32 bits	0	Float a =3.1	-3,4*10^38 a 3,4*10^38
Double	Numero real	64 bits	0	Double a = 125.2333	-1,79*10^308 a 1,79*10^308

There is a String data type for handling strings that is not itself a primitive data type. With the String data type we can handle character strings separated by double quotes. The String element is an immutable data type. In other words, once created, its value cannot be changed. The String is not a primitive data type of the Java language. But its use is just as important as the data types reviewed here. We will see more in detail the use of the String type.

2. Primitive Data in Python

Python has several types of data, since a number is not the same as a letter, or a value that can only be True or False. A characteristic of Python is that the variable type is not declared.

Types of Integers

1. **Numbers**
   - Integers
   - Real
   - Complex

2. **Integers**

They are the numbers that do not have decimals and can be positive and negative (0 is an integer as well). int (integer) or long (long integer for more precision).

- X=-4

3. Real

They are the numbers that have decimals and are of the float type.

- X= 3.5502

4. Complex

They are the numbers that have a real and an imaginary part.

- X= 2,1 + 6j

5. Chain Type

Strings are text enclosed in quotes (single or double).

```
1
2   cadena1 = ('comillas simples')
3
4   print (cadena1)
5
6   cadena2 = ("comillas dobles")
7
8   print (cadena2)
9
10  n = "Aprender"
11
12  a = "Python"
13
14  n_a = n + " " + a
15
    print (n_a)
```

6. Types of booleans

This is the type of variable that can only have True or False. They are values widely used in conditions and loops.

```
1
2  aT = True
3
4  print ("El valor es Verdadero:", aT, ", el cual es de tipo", type(aT)), "\n"
5
6  aF = False
7
   print ("El valor es Falso:", aF, ", el cual es de tipo", type(aF))
```

3. Bibliography

- Tipos de Datos Primitivos en Java. (2021, 2 febrero). Manual Web. http://www.manualweb.net/java/tipos-datos-primitivos-java/

- Fernandez, R. (2019, 30 diciembre). Tipos de datos y Variables en Python. ▷ Cursos de Programación de 0 a Experto © Garantizados. https://unipython.com/tipos-datos-variables-python/