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## Things that are *identical* in *Java* and *C*

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- **Lineage from *C* to *Java***

- "Evolution" from **C** to **Java**

- **1969: Dennis Ritchie** developed **C** at *Bell Labs* to write the **UNIX operating system**

- **C** is a **lean and mean** programming language
- It is **still** one of the **most popular** languages in the world: [click here](#) and [click here](#)

- **1979: Bjarne Stroustrup** at *Bell Labs* added **object oriented features** to **C** and called the new language **C++**. ([click here](#))

- **C++** started out as a **very useful object-oriented** extension of **C**
- But **new features** are **continuously** being added to **C++** and it became a **monstrosity**

Just Google "**C++ monstrosity**" and you will find quite a few complains on **C++**: [click here](#)

- **1995: James Gosling** at *Sun Microsystem* has enough of the **C++ crap** and developed a **stripped down and safer** version of a **C-styled object-oriented** language called **Java** ([click here](#))

- Due to the fact that **Java** is **derived (indirectly)** from **C**, and the fact that you **already** know **Java**, you have seen **many features** of **C** already !!!

- This webpage contain **some** of the things that are **identical** in **Java** and **C**.

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- **Data types**

- Similar **data types** in **C** and **Java**

- **int**
- **short**
- **long**

```
■ float
■ double
```

• Variable definition syntax

- Syntax to define variables:

```
int x;
double y;
```

• Arithmetic operators

- Arithmetic operators: (add, subtract, multiply, divide, (modulo))

```
Integer:  +  -  *  /  %
Float:    +  -  *  /
```

• Increment/decrement operators

- Increment/decrement operators: (++, --)

```
Pre operators:  ++x  --x
Post operators: x++  x--
```

• Assignment operators

- Assignment operators:

```
Integer Assignment operators: +=  -=  *=  /=  %=
Float Assignment operators:  +=  -=  *=  /=
```

• Comparison and Logical operators

- **Comparison operators:** (less than, less than or equal, and so on)

```
Comparison operators:  <  <=  >  >=  ==  !=
```

- **Logical operators:** (And, Or, Not)

```
Logical operators:  &&  ||  !
```

- **Statements**

- Syntax of **all statements** (assignment, if, if-else, switch, while, for, do) are **identical** in C and Java

**Examples:**

```
x = (a + b) * (c + d % e);
```

```
if ( a > b )
    max = a;
else
    max = b;
```

```
while ( x < 10 )
    x++;
```

```
for ( i = 0; i < n; i++ )
    sum += i;
```

- **Break and continue**

- The **break** and **continue** statements in C and Java have the **same meaning**:

- **break:** exit a **switch** or a **loop** statement
- **continue:** start the *next iteration* of a **loop statement** *immediately*

