# Language Basics - Operators



**Kate Gregory** 

@gregcons www.gregcons.com/kateblog



#### Arithmetic

Arithmetic Operators + - \* /

Increment/
Decrement
i++ ++i i-- --i

Modulo %

No Exponential



## Comparisons



## Bitwise Operators

Boolean operators && ||!

Bitwise operators & | ^ Bit shift operators
<<>>>



### Operator Overloading

User defined types just like fundamental types

```
int i = j +3;
Order newOrder =
  oldOrder + newItem;
```



### Operator Overloads

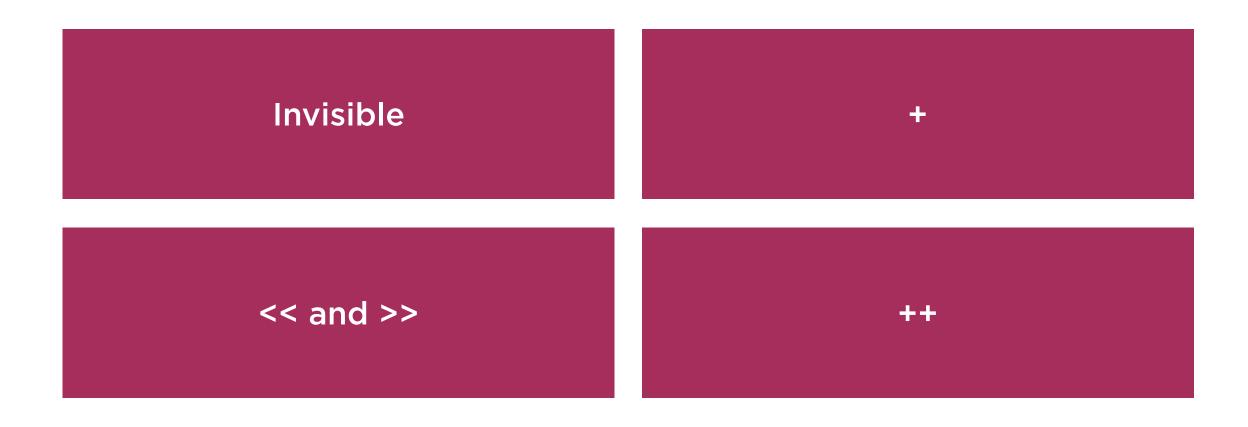
Write a function that defines the operator

Usually a member function

Occasionally a free function



### Standard Library Has Plenty of Useful Overloads





## Operator Overloading

What operators can you overload?

All of them

Even some you've never heard of



### Writing an Overload

#### MyObject < Something

bool MyClass::operator<(OtherType something)</pre>

Can operate on two MyClass objects or different types

#### Something < MyObject

Free function

Use MyClass public functions

Or be declared a friend



## Summary



C++ has a LOT of operators

Not all behave the way you think

&& || shortcut

& | ^ bitwise

== vs =

It's possible to write VERY concise code

Operator overloading is a very powerful technique that sets C++ apart

