Lec 3: Arithmetic and String

Use const

- const type variable_name = value;
- Tips:
  - use const when the value for the variable stays the same;
  - using const makes the code more readable;
  - give const variable precise and meaningful names;

Basic operations

	Name	Comment
f(a)	function call	pass **a** to **f** as an argument
++lval	pre-increment	increment and use the incremented value
--lval	pre-decrement	decrement and use the decremented value
!a	not	result is **bool**
–a	unary minus	
a*b	multiply	
a/b	divide	
a%b	modulo (remainder)	only for integer types
a+b	add	
a–b	subtract	

Basic Operations

out<<b	write **b** to **out**	where **out** is an **ostream**
in>>b	read from **in** into **b**	where **in** is an **istream**
a<b	less than	result is **bool**
a<=b	less than or equal	result is **bool**
a>b	greater than	result is **bool**
a>=b	greater than or equal	result is **bool**
a==b	equal	not to be confused with =
a!=b	not equal	result is **bool**
a && b	logical and	result is **bool**
a || b	logical or	result is **bool**
lval = a	assignment	not to be confused with ==
lval *= a	compound assignment	**lval = lval*a**; also for /, %, +, –

String Manipulation

- Strings are objects that represent sequences of characters.

- String is a class with support for many member functions

- http://www.cplusplus.com/reference/string/string/

Data Types Conversion

- Safe conversion:

1. **bool** to **char**
2. **bool** to **int**
3. **bool** to **double**
4. **char** to **int**
5. **char** to **double**
6. **int** to **double**

- Unsafe conversion:

1. **double** to **int**
2. **double** to **char**
3. **double** to **bool**
4. **int** to **char**
5. **int** to **bool**
6. **char** to **bool**