



CS 225

Data Structures

January 20 – C++ Design in CS 225

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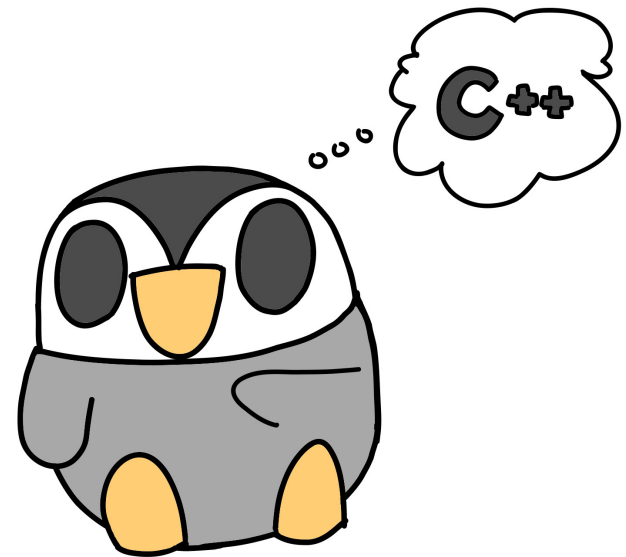


UIUC

SPRING OPEN HOUSE

Thursday, January 26th, 6 - 9PM
Campus Instructional Facility 0027 & 0035

What about C++



Lectures from Previous Semesters Covering C++ Available Here


https://mediaspace.illinois.edu/playlist/dedicated/177553201/1_s10ctiib/1_z2cz05fi

Material from CS 128

<https://learncpp.online/lessons>



Encapsulation - Classes



The “Rule of Three/Five”

If it is necessary to define any one of these three functions in a class, it will be necessary to define all three of these functions:

- 1.
- 2.
- 3.



The “Rule of Zero”

Corollary to Rule of Five

Classes that **declare** custom destructors, copy/move constructors or copy/move assignment operators should deal exclusively with ownership. Other classes should not **declare** custom destructors, copy/move constructors or copy/move assignment operators

–Scott Meyers



Memory Management - Ownership

Overloading

Operators that can be overloaded in C++						
Arithmetic	+	-	*	/	%	++ --
Bitwise	&		^	~	<<	>>
Assignment	=					
Comparison	==	!=	>	<	>=	<=
Logical	!	&&				
Other	[]	()	->			



Const

- Values
- References
- Methods



Templates



template1.cpp

```
1  
2  
3 T maximum(T a, T b) {  
4     T result;  
5     result = (a > b) ? a : b;  
6     return result;  
7 }
```



Inheritance



ADT