

Objected-Oriented Programming

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Course Information

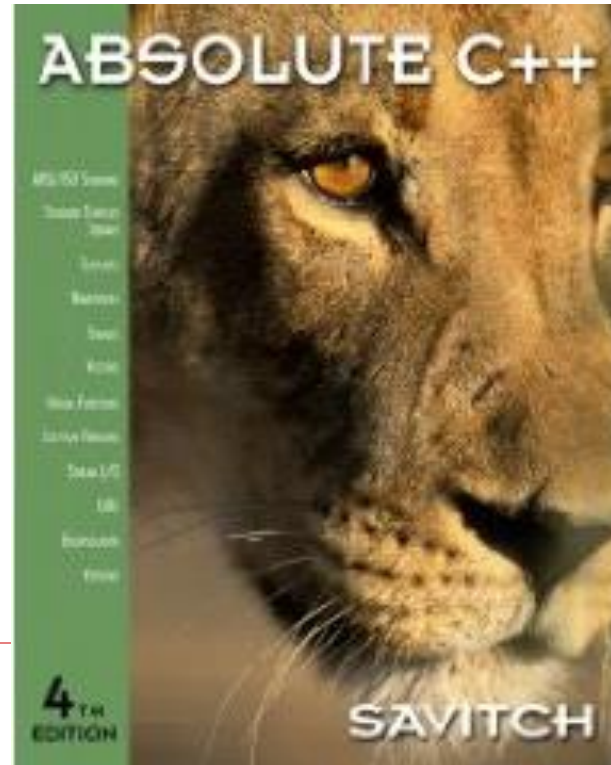
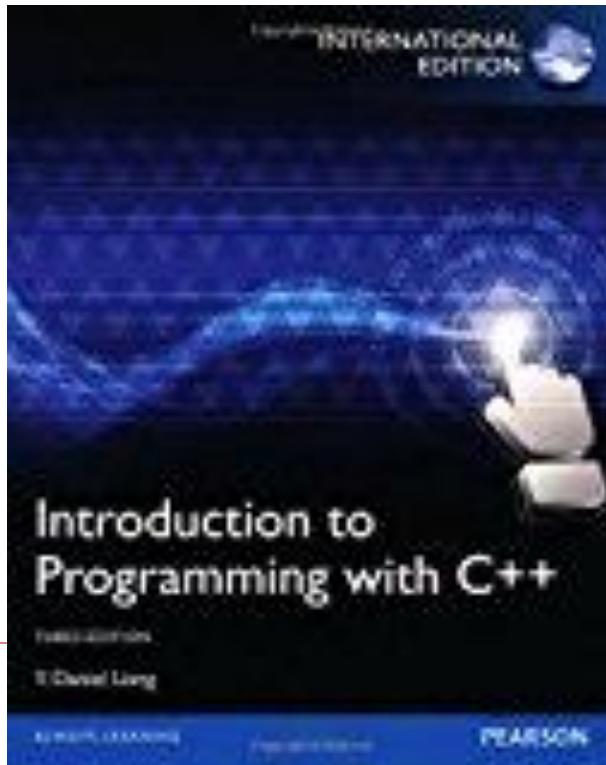
- ❑ Instructor: Jiun-Long Huang
- ❑ E-mail: jlhuang@cs.nctu.edu.tw
- ❑ Time: 1EF 4B
- ❑ Location: EC122
- ❑ Lab: 1IJK @ EC 315

Scoring (tentative)

- ☐ Homework: ?
- ☐ Midterm: ?
- ☐ Final: ?
- ☐ 筆試: ?

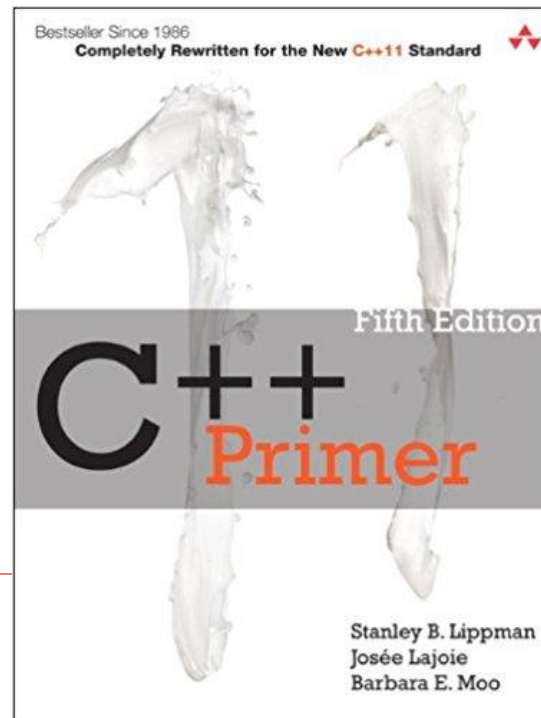
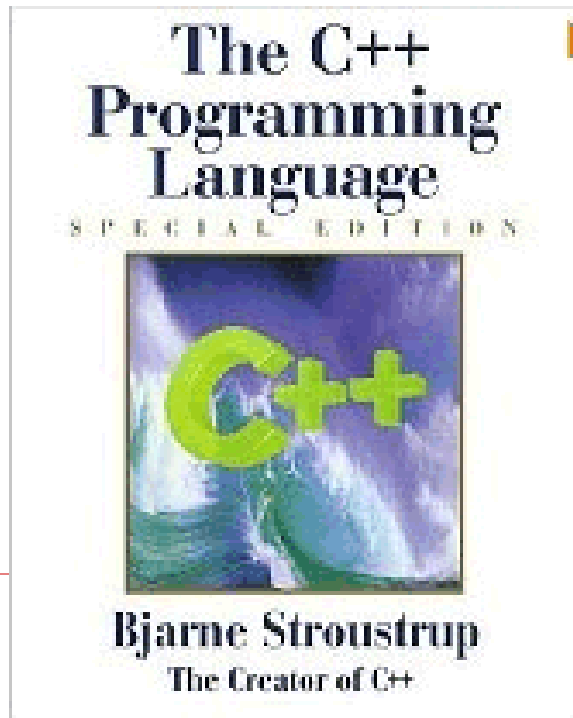
Reference Books

- ❑ Y. D. Liang, Introduction to Programming with C++.
- ❑ W. Savitch, Absolute C++.



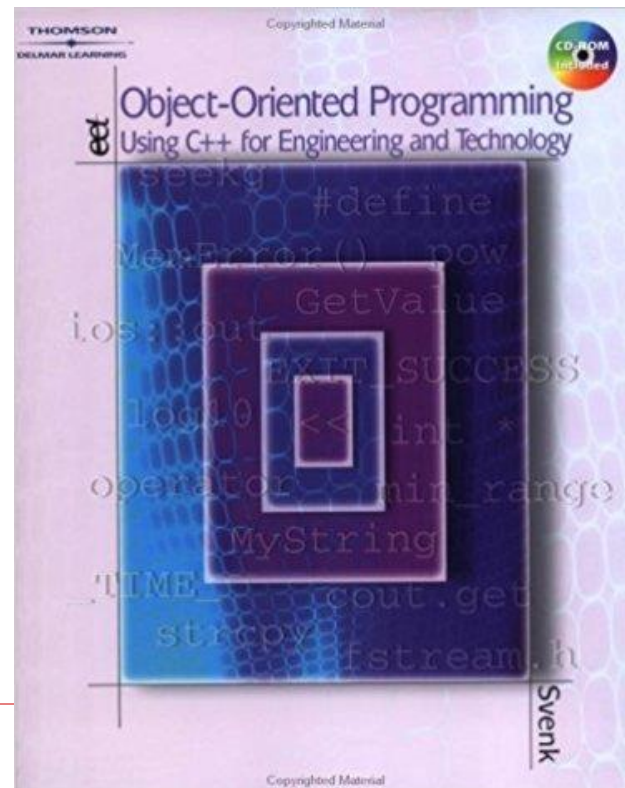
Reference Books (contd.)

- ❑ Bjarne Stroustrup, "The C++ Programming Language."
- ❑ S. B. Lippman, J. Lajoie and B. E. Moo, "C++ Primer."



Reference Books (contd.)

- ❑ Goran Svenk, "Object-Oriented Programming Using C++ for Engineering and Technology"



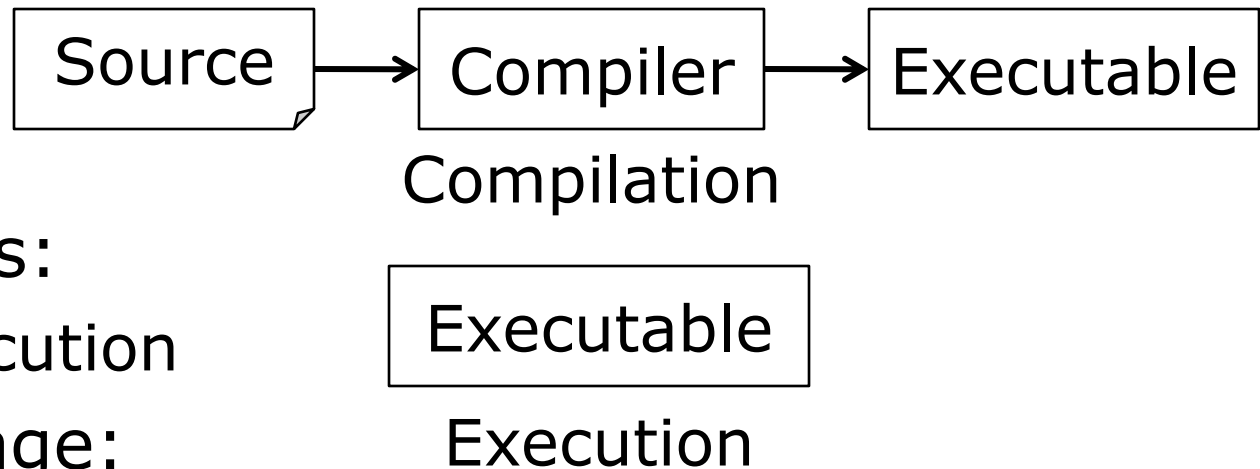
IDE

- ☐ Code::Blocks
- ☐ Dev-C++
- ☐ Eclipse
 - GCC
- ☐ XCode
- ☐ Visual Studio
 - Community version
- ☐ Visual Studio Code

Types of Programming Languages

☐ Compiler

- C
- C++
- ...



☐ Advantages:

- Fast execution

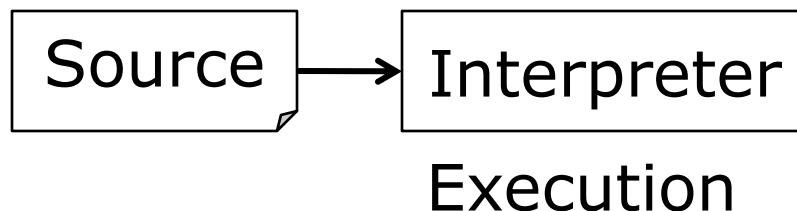
☐ Disadvantage:

- Platform-dependent

Types of Programming Languages (contd.)

☐ Script languages

- Javascript (JS)
- PHP
- Python
- Ruby
- R



☐ Advantages:

- Flexible
- Easy to program
- Platform independent

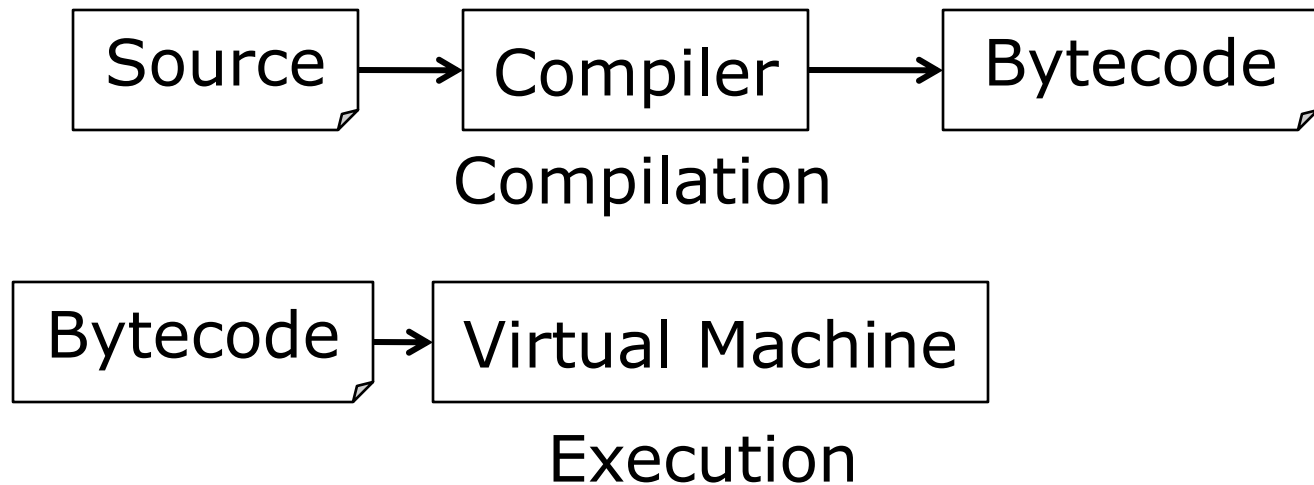
☐ Disadvantages:

- Slow execution

Types of Programming Languages (contd.)

□ Virtual machines

- Java
- C# (VB.NET...)/Mono
- ...



C++

- ❑ C++ was developed by Bjarne Stroustrup starting in 1979 at Bell Labs as an enhancement to the C programming language and originally named "C with Classes".
- ❑ It was renamed C++ in 1983.



From Wikipedia

C++ Reference

- ❑ C++ Reference,
<http://www.cppreference.com>
- ❑ The C++ Resources Network,
<http://www.cplusplus.com/>

Content

- ☐ From C to C++
- ☐ Classes and Objects
- ☐ Operator Overloading
- ☐ Inheritance
- ☐ Polymorphism
- ☐ Templates
 - Generic programming: STL
- ☐ Exception Handling
- ☐ File I/O

Some Advice

- Object-oriented is
 - a kind of **thought** and a **belief**.
- One can
 - implement an object-oriented program by a programming language without objected-oriented constructs, and
 - implement an un-object-oriented program by an object-oriented programming language.
- Object-orientation is **NOT** a silver bullet