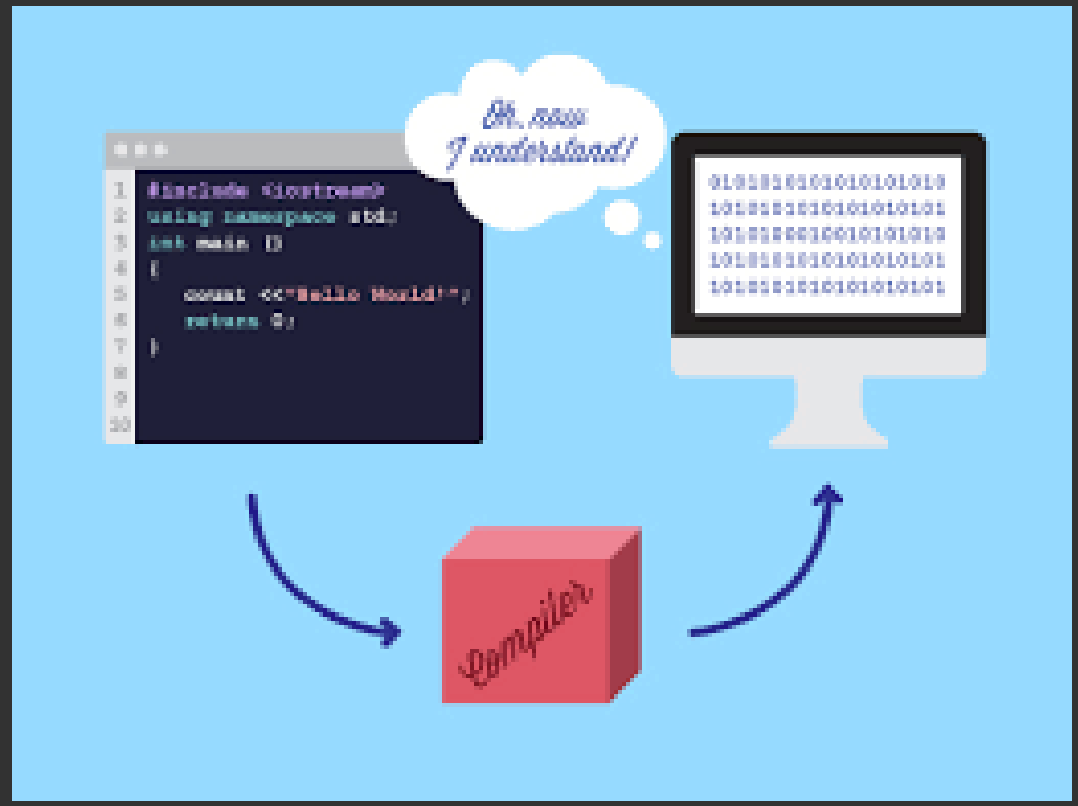
Programming Languages Pragmatics

Dr. Eric Chou

IEEE Senior Member

Goals



eC Learning Channel

Goals

- Design/Implementation of Languages ✓
- Features of Languages ✓
- Overview of Languages ✓
- Choice of Languages ✓

Not Our Goals

History of Languages

Teach you all Languages

Algorithm Course

Compiler Design

Eric Chou, Ph.D.

IEEE Senior Member
CSTA Member
USAT/AAU Coach

IEEE

USC

National Taiwan University

eC Learning Channel

Audience

SENIOR

GRADUATE STUDENT

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Unit 1 Foundations

- Programming Language Design and Compiler Front-End
- Lexical Analysis (FLEX), Regular Expression
- Syntax Analysis (Bison), Context Free Grammar
- Semantic Analysis, Attribute Grammar
- Target Architecture (Hardware Issues)

Unit 2 Programming Language Design

- Control Flow
- Data Types, Composite Data Types
- Program Structures (Structural Programming)
- Object-Oriented Programming

Unit 3 Programming Models and Languages (Optional for 8-week course)

- Functional Programming (Scala, Ocaml, LISP)
- Logic Programming (Prolog)
- Concurrent Programming (Java Multithreading)
- Script Programming (Python, Javascript, Shell Languages)

Unit 4 Runtime Program Environment (Optional)

- Program Building, Software Integration and Engineering
- Runtime Environment (RTE, VM, JIT, JDK, API)
- Code Improvement (Compiler Backend)

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