Homework-Week 1

- Textbook, Page 3: 1.1.2, 1.1.3, 1.1.4
- List some famous tools for constructing compilers, with brief introduction and comparison.

Homework-Week 1

- 1.1.2 Problem：
- What are the advantages of: (a) a compiler over an interpreter   (b) an interpreter over a compiler?

- Answer：
- a. The machine-language target program produced by a compiler is usually much faster than an interpreter at mapping inputs to outputs.
- b.An interpreter can usually give better error diagnostics than a compiler, because it executes the source program statement by statement.

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- 1.1.3Problem :
- What advantages are there to a language-processing system in which the compiler produces assembly language rather than machine language?

- Answer:

  The compiler may produce an assembly-language program as its output, because assembly language is easier to produce as output and is easier to debug.

Homework-Week 1

- 1.1.4Problem :
- A compiler that translates a high-level language into another high-level language is called a source-to-source translator. What advantages are there to using C as a target language for a compiler?

- Answer:
  For the C language there are many compilers available that compile to almost every hardware.

Homework-Week 1

- Problem :
- List some famous tools for constructing compilers, with brief introduction and comparison.

Answer:

– LLVM: A set of libraries for developing language-related tools such as compilers and interpreters, mainly for back-end functions such as code generation, code optimization, JIT, etc

– ANTLR (ANother Tool for Language Recognition) :a language tool that provides a framework for constructing language recognizers, compilers, and interpreters by syntax descriptions of Java, C++, etc