

Compilers and types of compilers

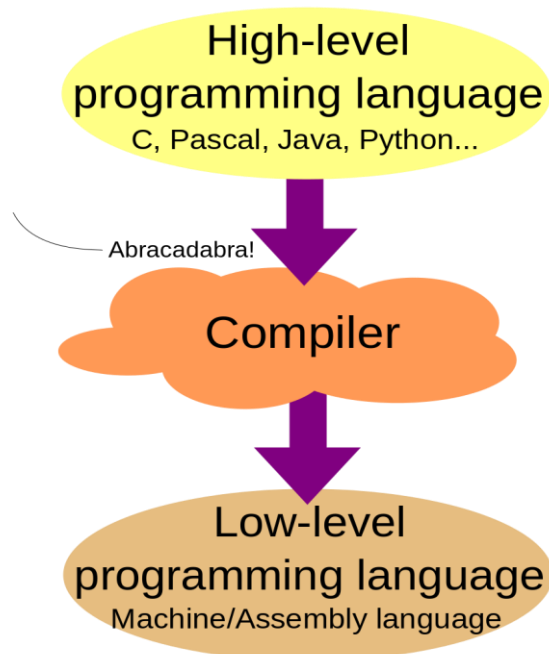
CONTENTS:

- Definitions
- Phases of compiler
- Types of compilers

DEFINITION:

It is a program which acts as a translator, transforming human-oriented programming languages into computer-oriented machine languages.

Ignore machine-dependent details for programmer



WHAT DO COMPILERS DO?

Compilers may generate three types of code:

- Pure Machine Code

Machine instruction set without assuming the existence of any operating system or library.

Mostly being OS or embedded applications.

- Augmented Machine Code

Code with OS routines and runtime support routines.

More often

- Virtual Machine Code

Virtual instructions, can be run on any architecture with a virtual machine interpreter or a just-in-time compiler

Ex. Java

❖ Retargetable compiler

A compiler that can be easily modified to a compile source code for different source code model.

All these about the types of compilers that work on different languages such as c++,Java,c etc.

THANK YOU

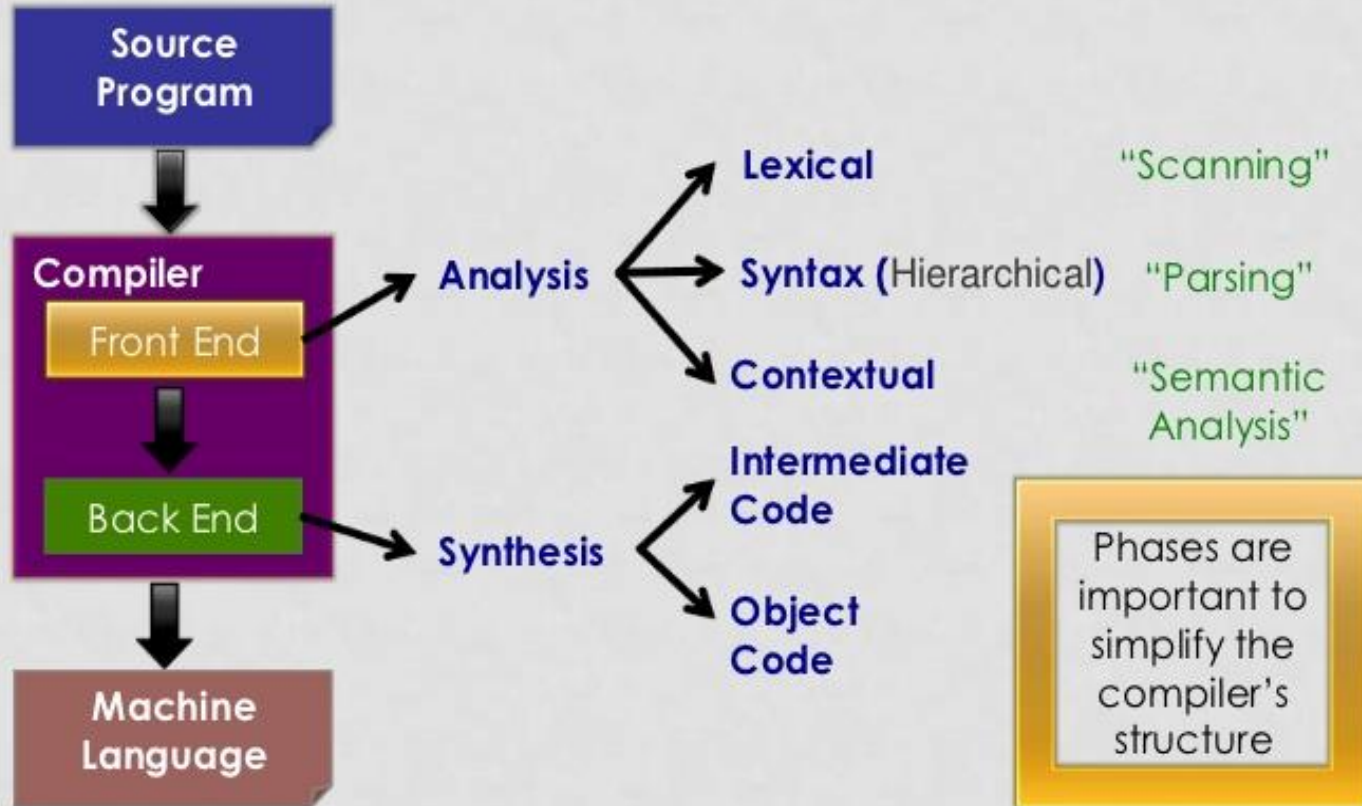
PHASES OF A COMPILER:

There are mainly 6 phases in a compiler, as these phases help in converting the H.L.L in to the machine code. The phases of a compiler are

- 1.lexical analysis
- 2.syntax analysis
- 3.semantic analysis
- 4.intermediate code generator
- 5.code optimizer
6. code generator

All these phases convert the source code by dividing in to tokens, creating pare trees, and optimizing the source code by different phases.

COMPLIER PHASES



PHASES OF A COMPILER

TYPES OF COMPILERS:

❖ Native code compiler

The compiler used to compile a source code for same type of platform only.

❖ Cross compiler

The compiler used to compile a source code for different kinds platform.

❖ Source to source compiler

the compiler that takes high-level language code as input and outputs source code of another high-level language only.

❖ One pass compiler

It is a type of compiler that compiles the whole process in only one-pass.

❖ Threaded code compiler

The compiler which simply replace a string by an appropriate binary code.

❖ Incremental compiler

The compiler which compiles only the changed lines from the source code and update the object code.

❖ Source compiler

The compiler which converts the source code high level language code in to assembly language only