

Translation Design

Lexical analysis (scanner)	تحليل المفردات
Parsing (syntax analysis)	الاعراب
Semantic analysis	تحليل دلالي
Translation to intermediate mode	التحويل الى الصيغة الوسيطة
Code generation	الحصول على الايعازات
Code optimization (Loop optimizations)	تحسين البرنامج
-Algorithm for instruction selection	خوارزميات ربط الجمل

المصادر:

- Kenneth C.Louden 2005-2006 “ Compiler Construction Principles & Practice “
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- V. Aho. R, Sethi , J.D. Ulman ,“ Compiler Principles ,Techniques & Tools “ , Addison Wesley , 1986
- J.P. Tremblay, P.G Sorensen, “The Theory & Practical of computer writing”, Megraw Hill, 1985.

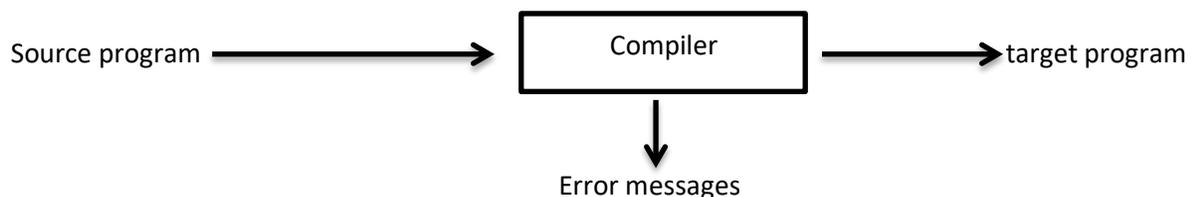
Compilers:

A compiler is a program that reads a program written in one language,

the source language, and translates it into an equivalent program in another language,

the target language (fig 1.1)

as an important part of this translation process, the compiler reports to its user the presence of errors in the source program.



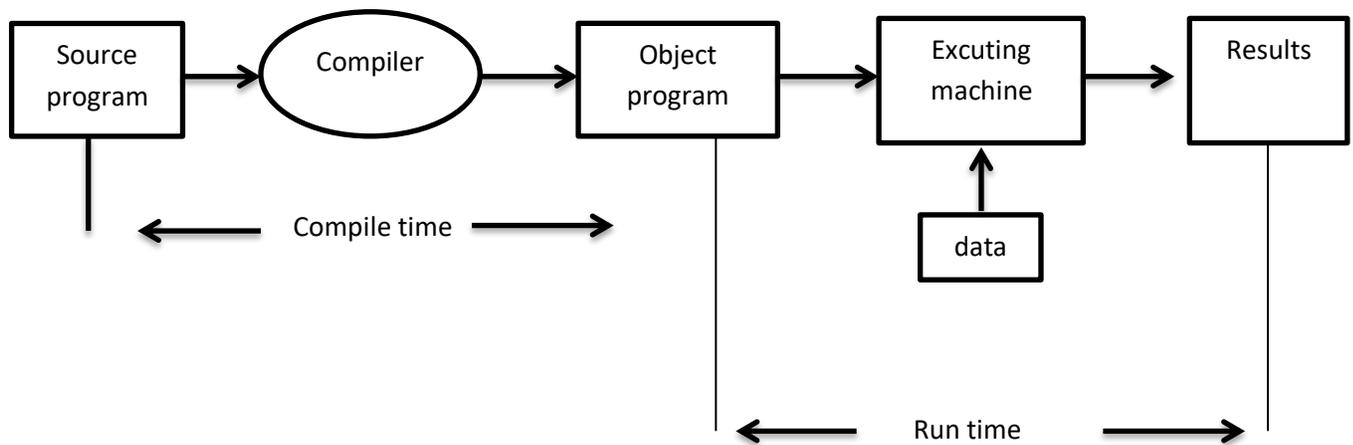
(Fig 1.1 a compiler)

Definitions:

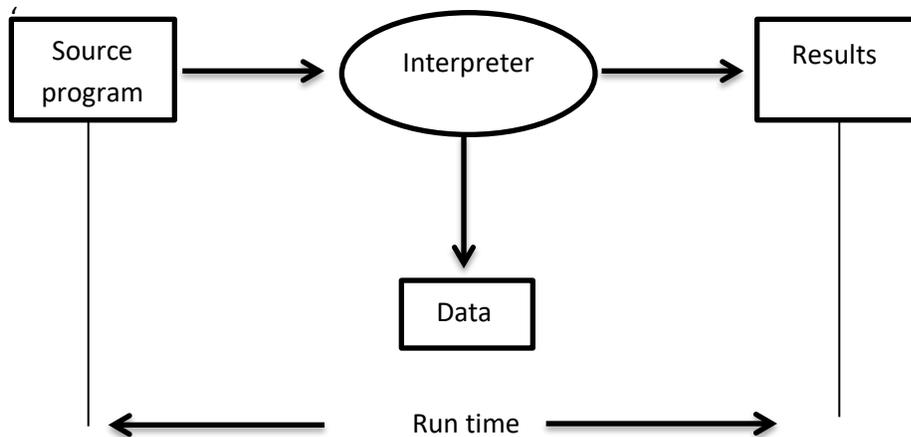
Translator: is a program that converts a source program into an object program.

Assembler: is a translator that converts source program written in assembly language to machine language

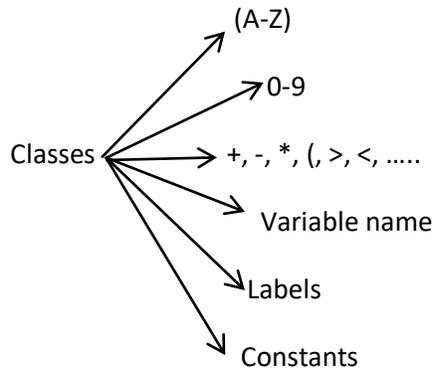
Compilers: is a translator that transforms HILL such as Fortan or Pascal or Cobol into assembly language. The time at which the conversation of a source program to an object program occurs is called compiler time. The object program is excited at run time.



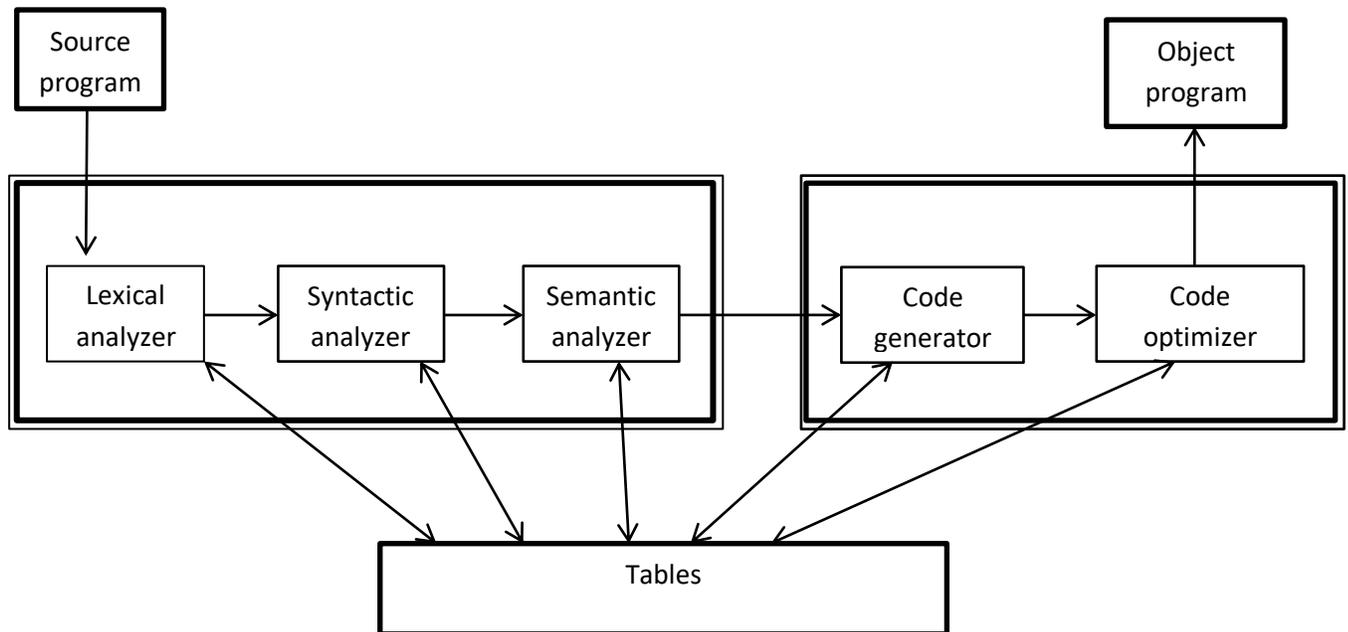
Interpreters: is a translator that process source program and data at the same time that is interpretation of the source from accurse at runtime and no object program is generated.



Source program: is a string of symbols which is a letter, a digit or certain special symbols such as +, -, (.). It contains elementary language constructs such as variable names, labels, constants, key-words and operators. The compiler is to identify these types as classes. The lexical (scanner) analyzer takes as input(the source program) and separate the incoming text into pieces (tokens) such as constant, keywords, operators..... Etc.



Components of a Compiler:



A compiler must perform two major tasks the analysis of a source program and the synthesis of its corresponding object program. The analysis task deals with the decomposition of the source program into its basic parts. Using these parts, the synthesis task builds their equivalent object program modules.