Traditional Compiler

character stream

↓

Lexical Analyzer

token | stream

↓

Syntax Analyzer

syntax | tree

↓

Semantic Analyzer

syntax | tree

↓

Symbol Table

Intermediate Code Generator

intermediate | representation

↓

Machine-Independent Code Optimizer

intermediate | representation

↓

Code Generator

target-machine code

↓

Machie-Dependent Code Optimizer

↓

target-machine code