

Intro to programming

Syntax basics with examples in Python



What is programming?

Poetry

Words are used for their sounds as well as for their meaning, and the whole poem together creates an effect or emotional response. Ambiguity is not only common but often deliberate.

Prose

The literal meaning of words is more important, and the structure contributes more meaning. Prose is more amenable to analysis than poetry but still often ambiguous.

Programs

The meaning of a computer program is unambiguous and literal, and can be understood entirely by analysis of the tokens and structure.

--[How to Think Like a Computer Scientist, Chapter 1](#)

Tips for reading programs

It takes longer to read them

Formal languages (programs) are much more dense than natural languages. Read carefully.

Structure is important

The structure of a program is not always as simple as a top-to-bottom flow, something to keep in mind when navigating code.

Details are extremely important

Typos, incorrect punctuation, unclosed parentheses or quotes -- tiny details can cause big problems.

Syntax elements

Variables

Variable assignment and types

Control flow

`if/elif/else` , Boolean conditionals

Iteration

Basic looping techniques

Functions

Composing code into reusable functions

A design recipe for functions?