Fundamental Concepts

Subject:

fundamental concepts: interpreting and the interpreter, compilation and the compiler, language elements, lexis, syntax and semantics, Python keywords, instructions, indenting

Compilation and Interpretation:

Compilers and interpreters convert high level language (scripting languages/source code) into machine codes.

Compilation:

- Source code is translated once by getting a file
- Compiler translates the entire program at once

Interpretation:

- Source code is translated each time it has to be ran
- Interpreter translates one statement of the program at a time

Python is an interpreted language!

What Makes a Language:

- Alphabet: symbols to build words (i.e. the English alphabet)
- Lexis: words with meaning (i.e. a dictionary)
- Syntax: rules defining the "grammatical" correctness of a statement (i.e. punctuation and indentation)
- Semantics: rules defining the validity of a statement (i.e. does it make sense)

In the programming world, a complete set of known commands is called an **instruction list**. Computers have no trace of intelligence, but are very good at executing lists of instructions.

Python Keywords:

Python keywords are reserved words that cannot be used as an identifier (variable name, function name, etc.).

For a list of Python keywords, see: https://www.w3schools.com/python/python_ref_keywords.asp

Indentation:

Python code blocks are indicated by indentation. This will come very naturally as you progress through the course.

Resources:

- https://edube.org/learn/pe-1/python-essentials-1-module-1-2
  - All of module 1