Introduction to Python

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memIQ
Progress by Education

Objectives

Show the place of Python in the programming languages world

Introduce several features of Python required by implementing an example program

1991 – Guido van Rossum (benevolent dictator for life)

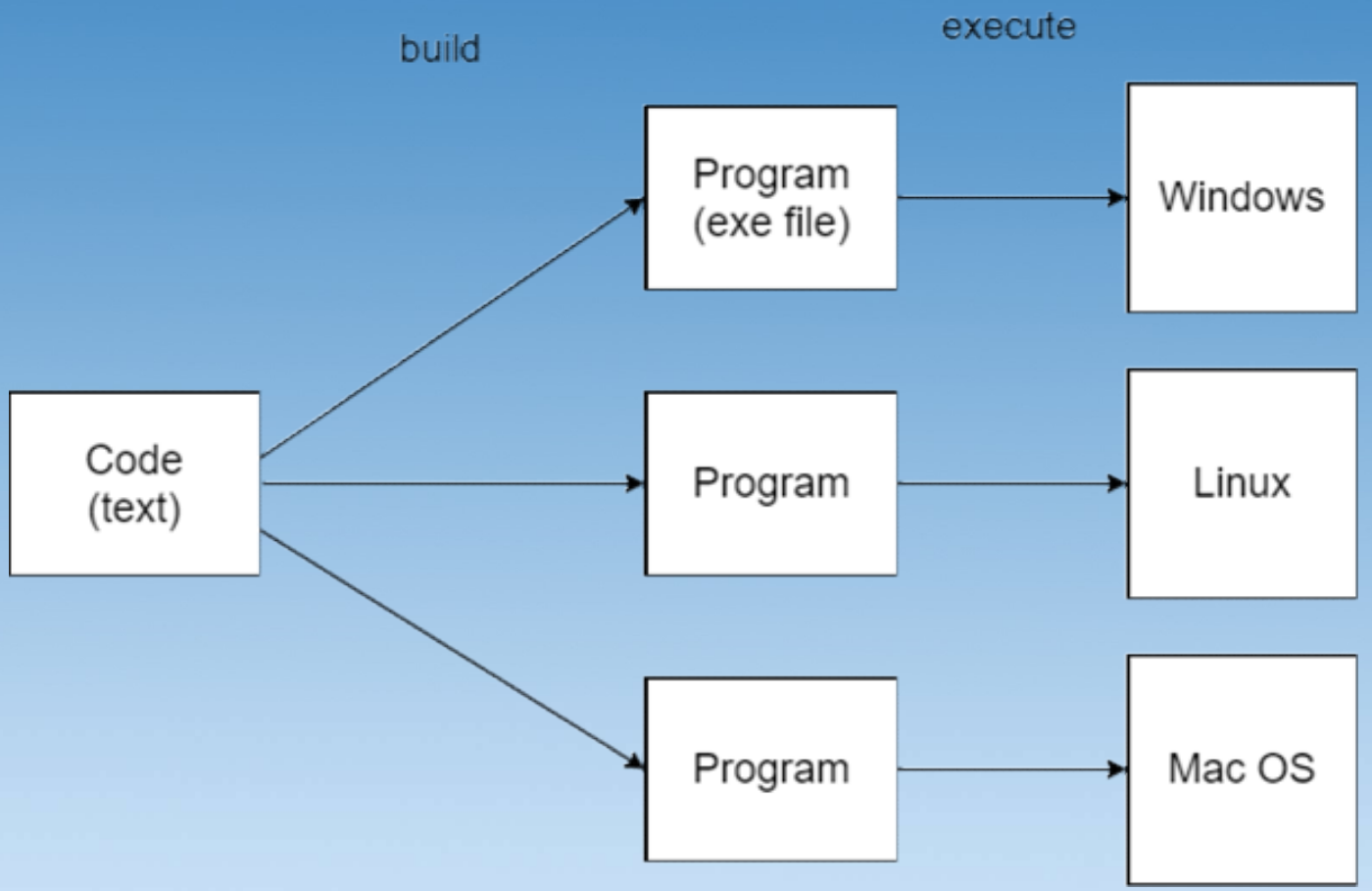
Monty Python's Flying Circus (British comedy group)

Official site: www.python.org

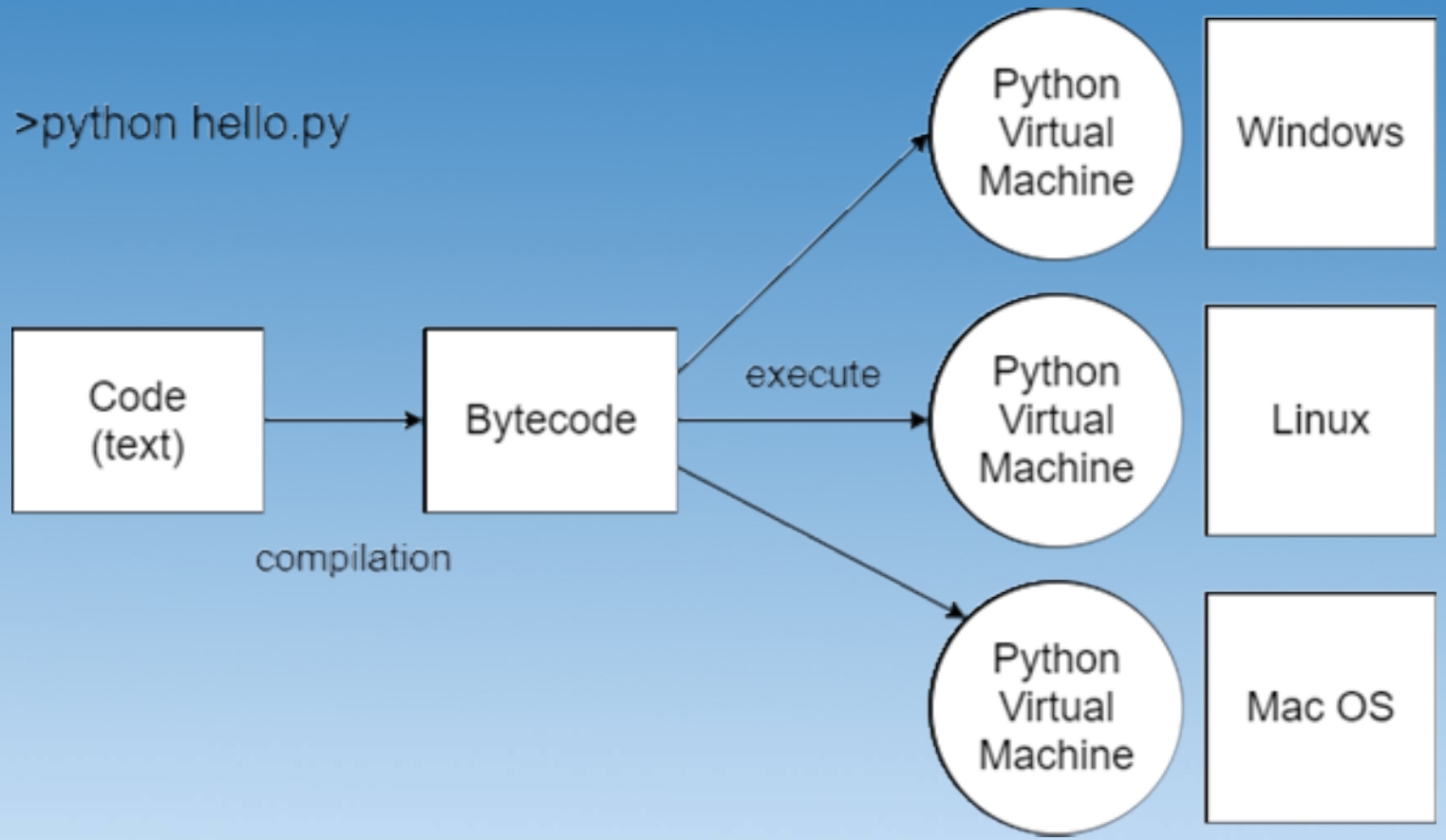
Free, portable, expressive, used almost everywhere

General programming language, support for procedural, object oriented & functional programming paradigms

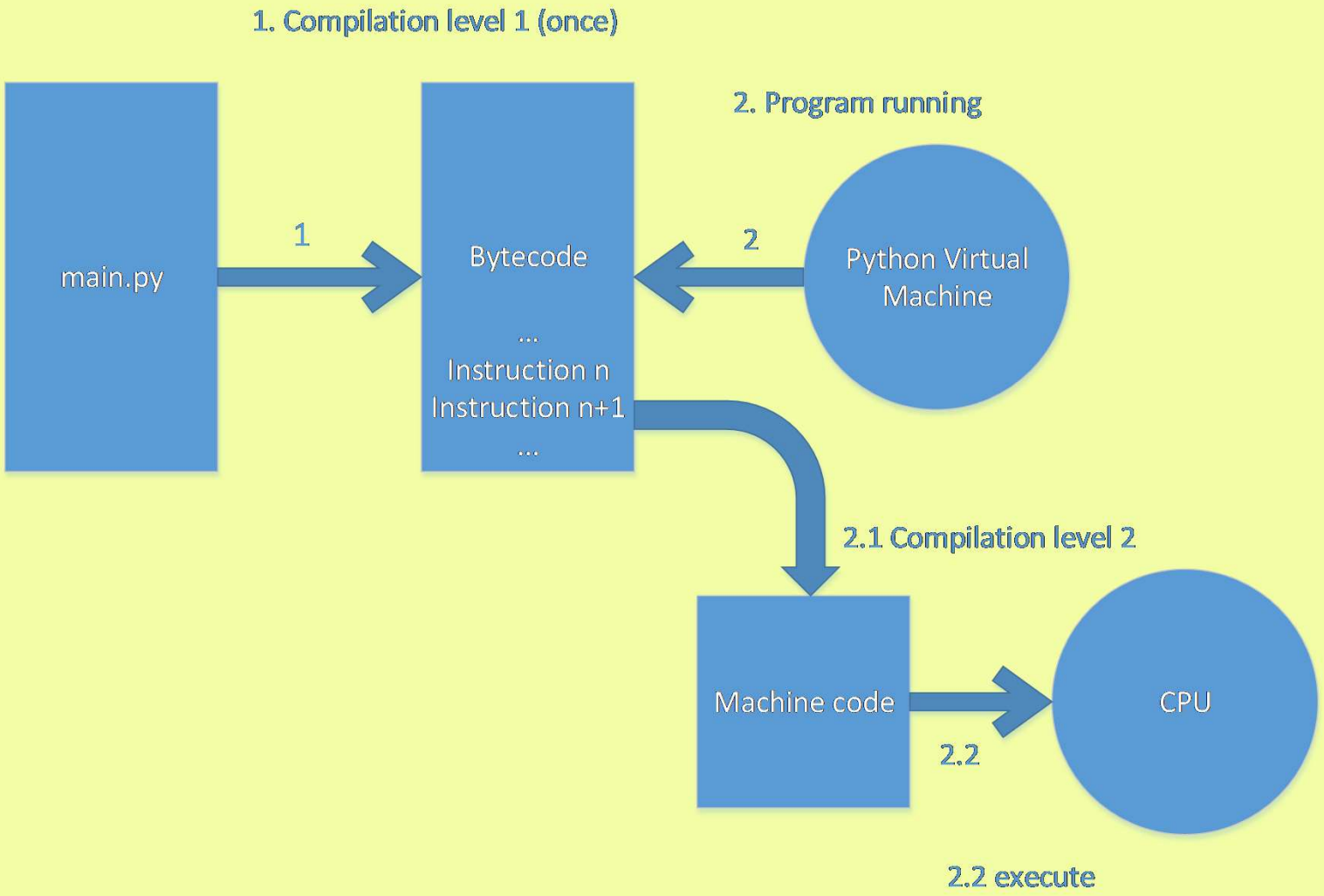
Compiled languages – for example C/C++



Interpreted languages



>python main.py



Prepare the host computer

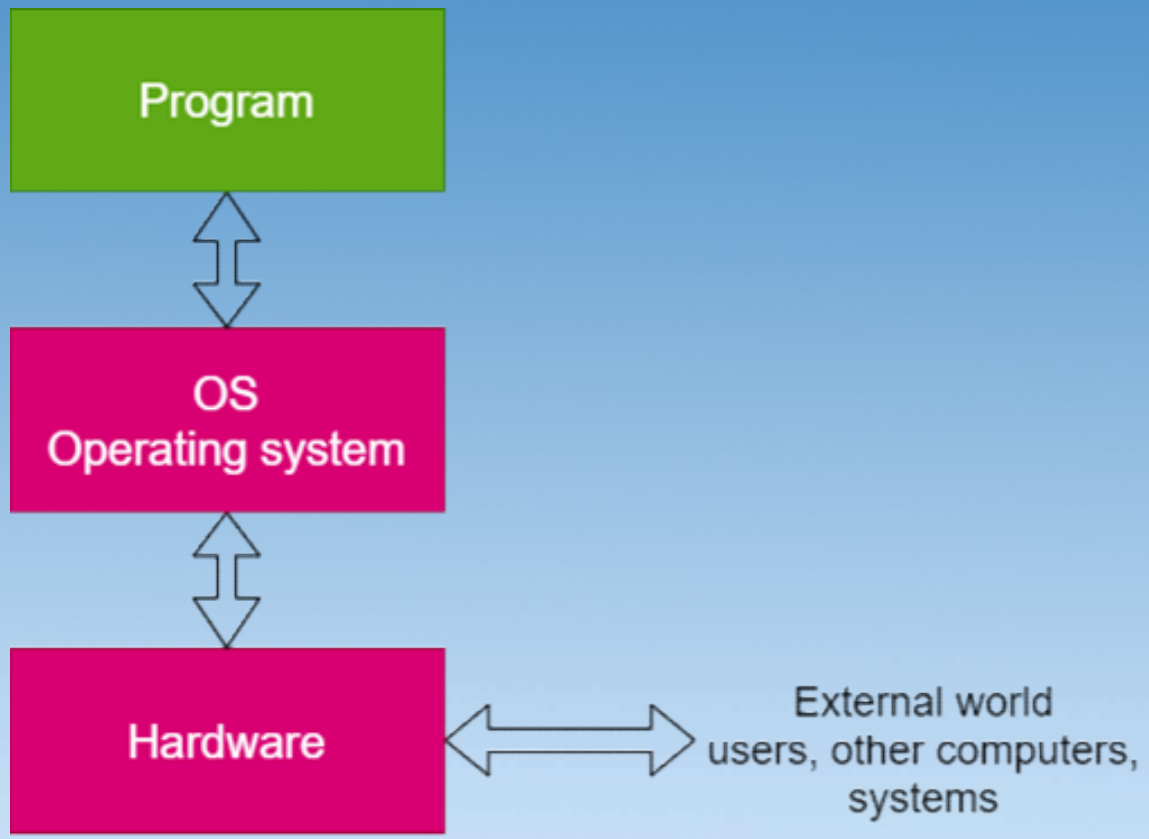
1. Install Python on the host – python.org
2. Install an IDE (Integrated Development Environment)

    PyCharm (jetbrains.com)

Demonstrate the first program

hello.py

Program execution context



Coding approach…

Imagine how your world will be in terms of the language (Python's) features!

Starting point: requirements & specifications

Mainly consists of functional requirements: do that, do this, etc.

Functional requirements → describe how they are fulfilled by algorithms (step by step actions)

Actions need data (information) to remember

Example

Requirements: the program asks the user's name, then salute the user by using the given name.

Needed features

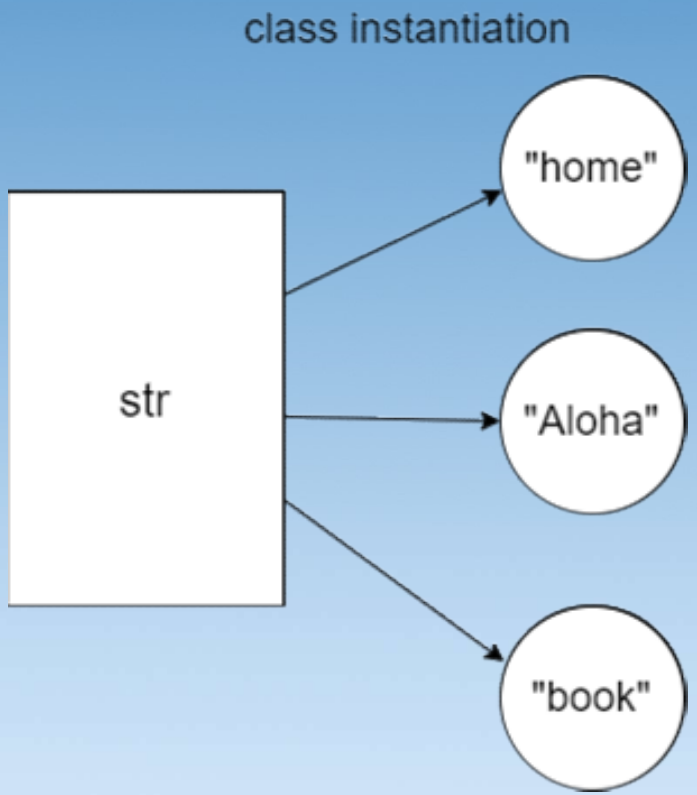
- data types, objects, variables
- built-in functions

Data types

Examples: strings, integer numbers, boolean values…

Classes describe a set of similar entities (objects)

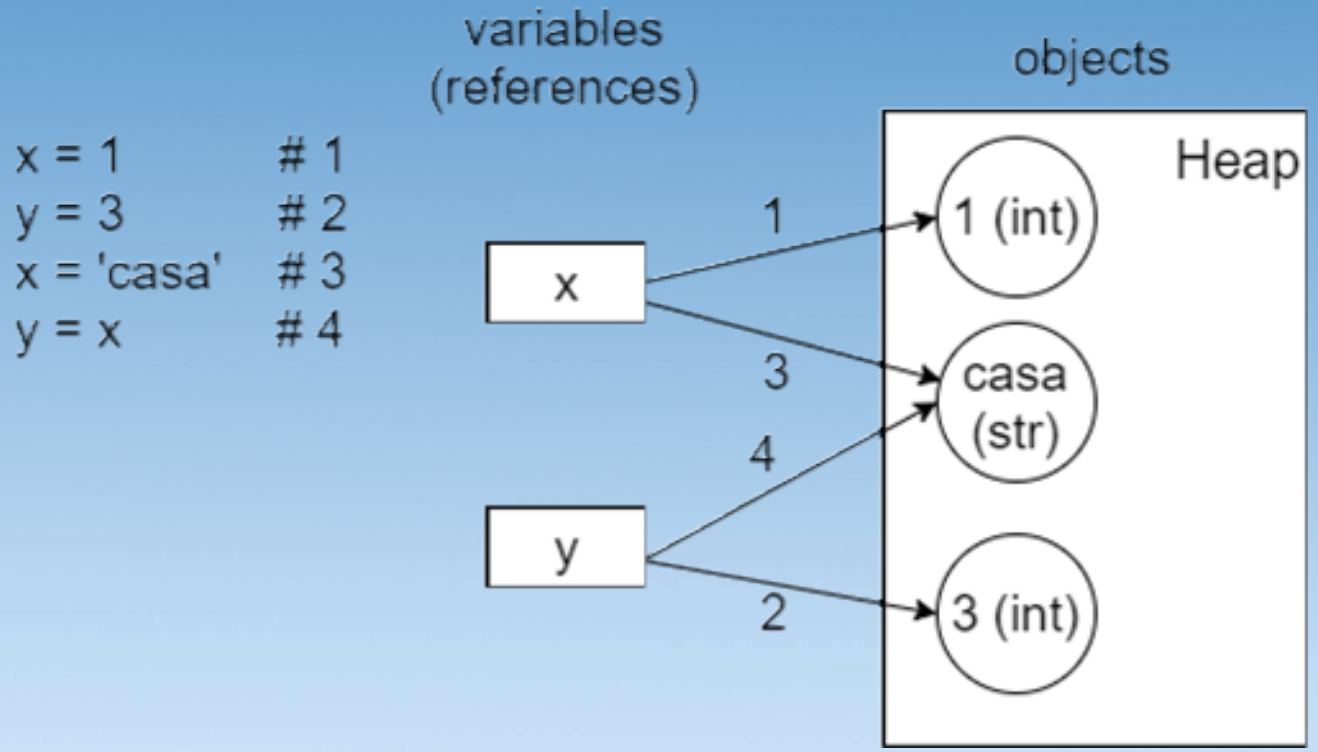
Classes are used runtime to generate new objects



Variables

Hold references to objects to keep them alive!

Lost objects are automatically destroyed by the garbage collector



Functions

Types

1. built-in – offered by the language anywhere
2. created by using def keyword

Q & A