python™ Overview

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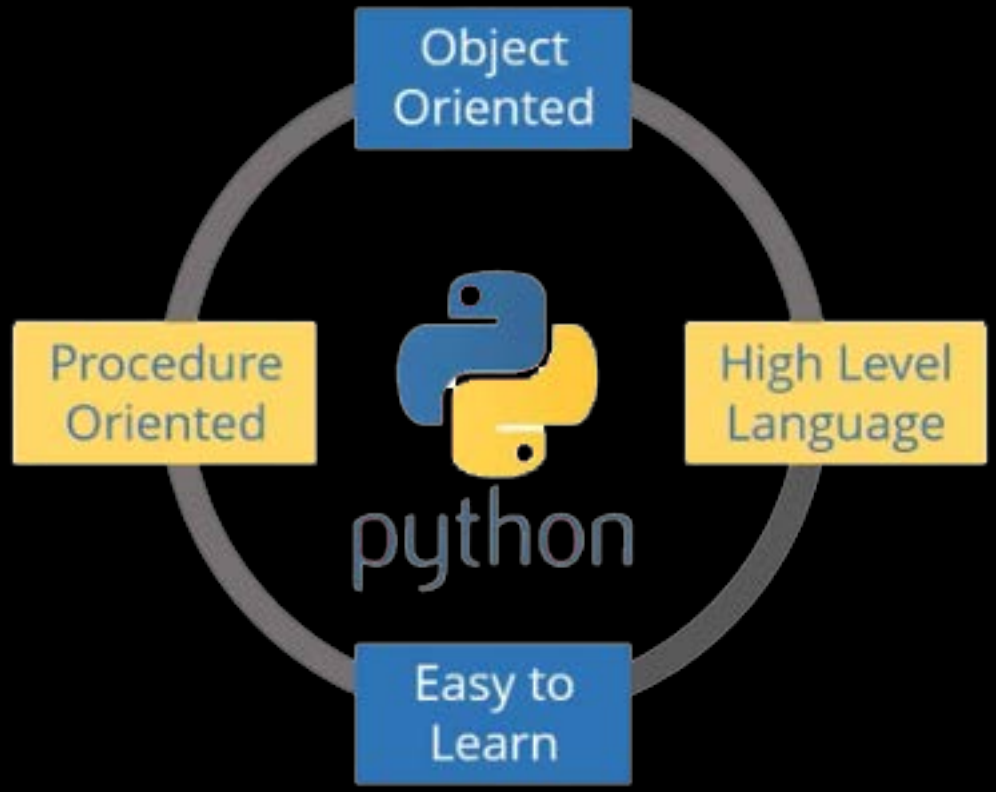
Introduction

- Guido Van Rossum - 1989
- Interpreted
- Object oriented
- expressive language (clear to read and write)
- Free & Open Source
- Portable
- 1/3 the size of equivalent C++ and Java code
- Data Science



Who Uses

- YouTube - Largely written in python
- Google - web spider
- Dropbox - Storage server & clients codes
- Raspberry Pi - Promotes for its board
- Bit Torrent - Begin as python program
- NASA - Scientific programing tasks
- NSA - Cryptography & intelligence analysis
- Mozilla - Development of applications
- Survey Monkey - Backend process

Bash vs Python

- Programming Language
- Memory Overhead
- Startup Time
- Performance
- Productivity
- Modules (Libraries)

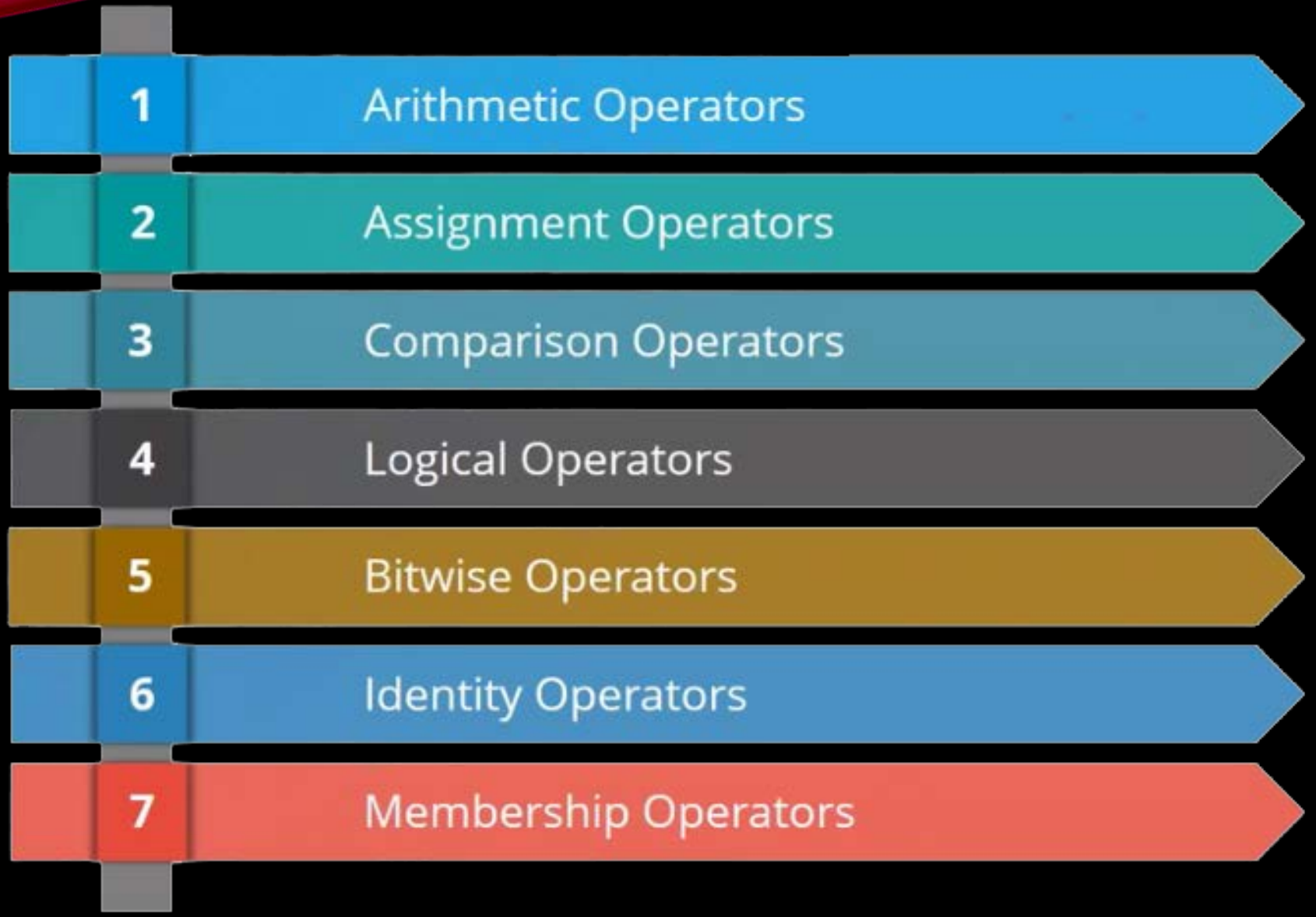
Features

- Supported by many Platforms
  - E.g. Linux, Windows, FreeBSD, Macintosh, Solaris, OS/2, Amiga, AROS, AS/400, BeOS, OS/390, PlayStation, Win CE, etc….
- Extensible
  - can invoke C & C++ libraries,
  - Can be called from C and C++
  - Can integrate with Java & .NET components.
- Versions – 2.7 (RHEL 7 - 30 Jun 2024) & 3.6
- OS independent programming.
- Fast, large collection of prebuilt and portable functionality, known as the standard library
- dynamically and strongly typed.

Why Should You Learn

1. Dynamically typed
2. Simple Syntax
3. One-liners (simplifies coding to one line)
4. English like commands
5. Intuitive data structures

Operators


1
Arithmetic Operators
2
Assignment Operators
3
Comparison Operators
4
Logical Operators
5
Bitwise Operators
6
Identity Operators
7
Membership Operators

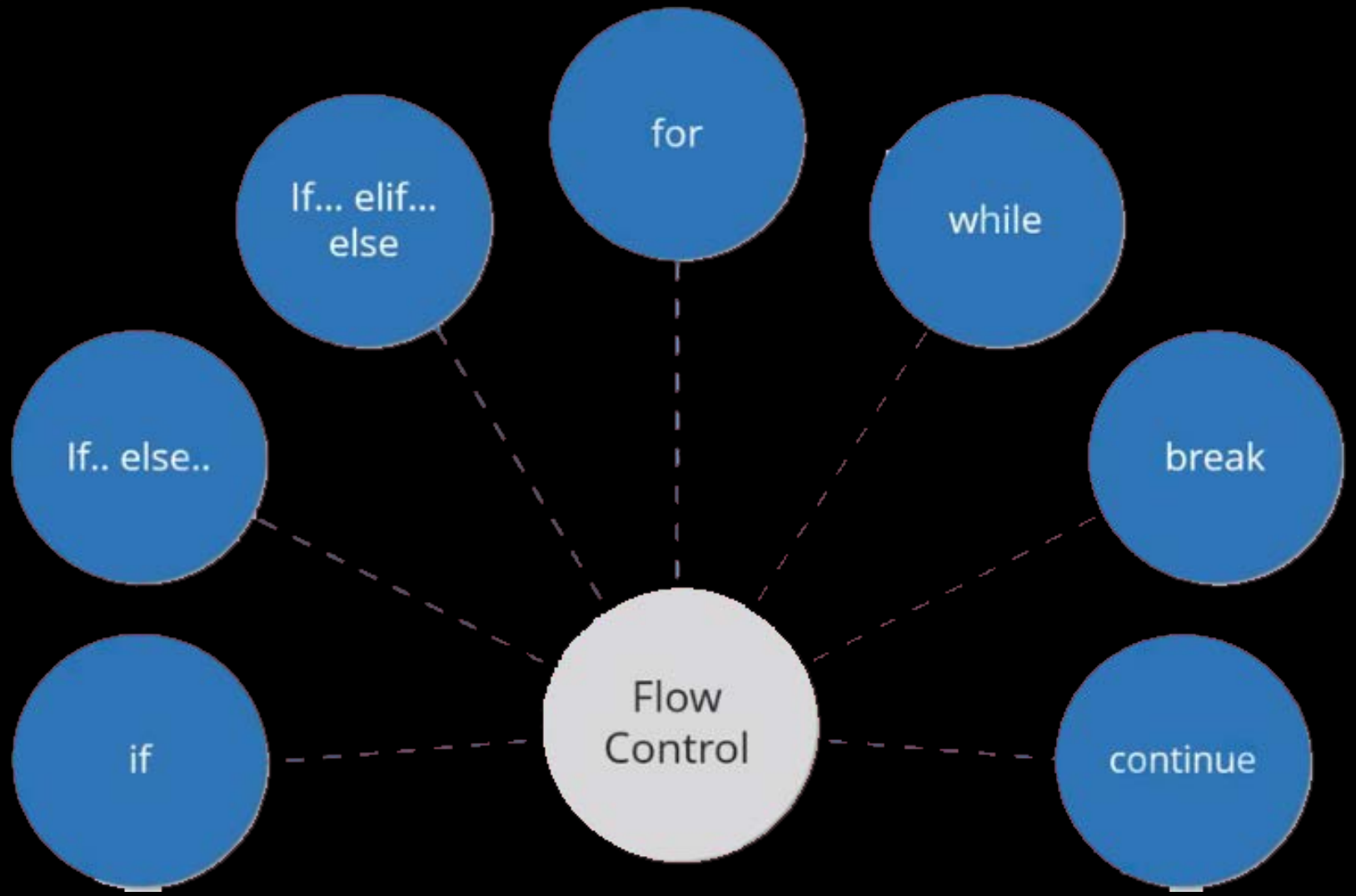
Operators cont...

1. +, -, *, /, **, %, //
2. /=, %=, //=, **=,
3. >, <, ==, !=
4. and, or , not
5. |, & , ^ , >>, << - (OR, AND, XOR, right shift, left shift)
6. is, is not
7. in, not in

Data types

Data type	
Immutable	Numbers
	Strings " "
	Tuple ( )
Mutable	Lists [ ]
	Dictionaries { : , }
	sets { , }

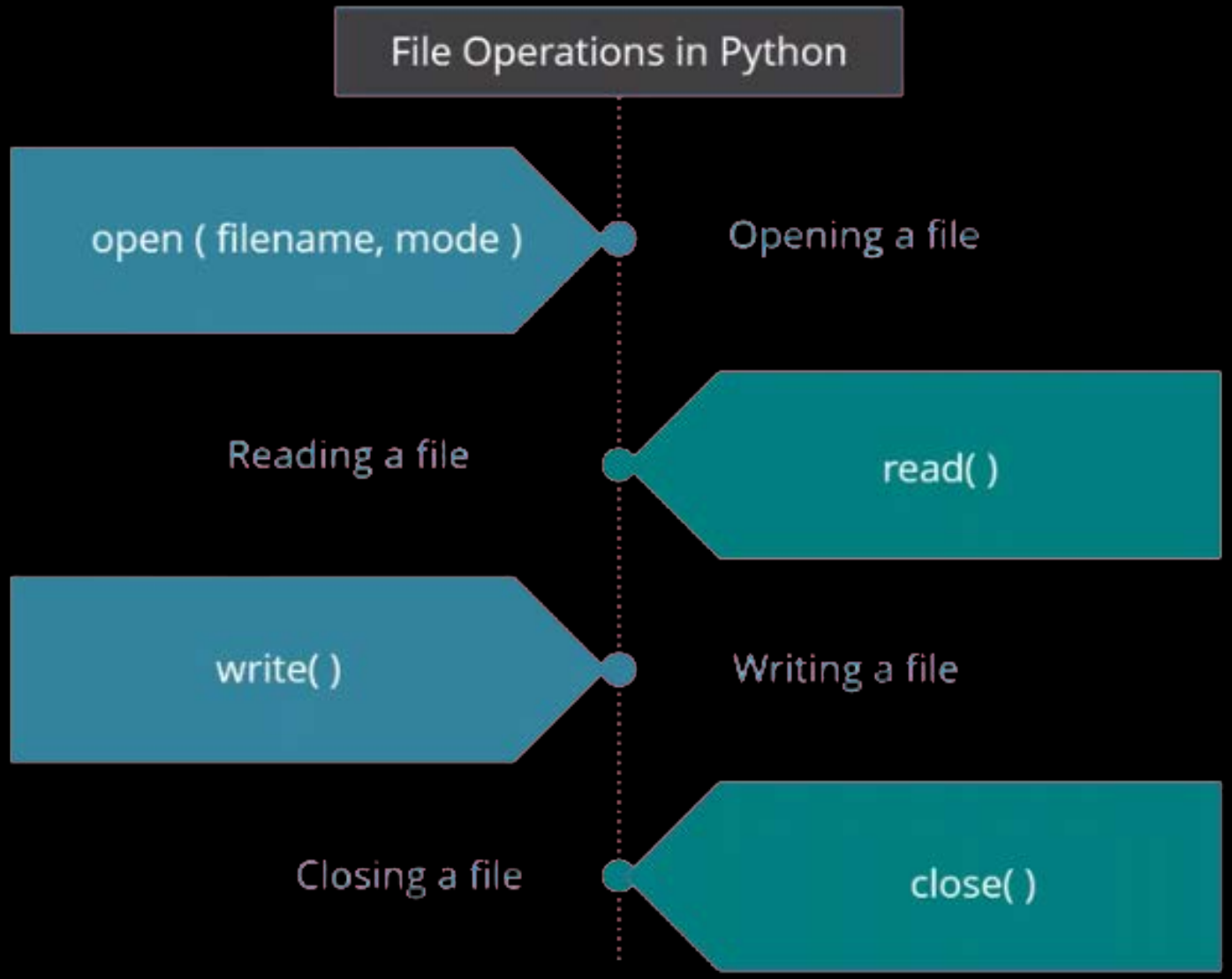
Flow control



Functions

- User defined
- Built-in

File handling



Modules

- OS
- SYS
- RE (regex)
- tkinter

Questions

Thankyou