



Python 101:

Lesson 1

What is Python? Compiled vs Interpreted. “Hello World”

Land Acknowledgement {

I would like to begin by acknowledging that Heritage Regional High School is located on unceded Indigenous lands. The Kanien'kehá:ka Nation, part of the Haudenosaunee confederacy, are recognized as the custodians of the beautiful lands and waters on which we gather today.

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Can anyone tell me the
names of some
programming languages?

- Java
- C#
- C++
- C
- Visual Basic
- Assembly
- PHP
- JavaScript
- Golang
- Rust
- Python
- Ruby



And **MORE**

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01 My Background

My history with programming, python, and how that will matter for you

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What is Python? How does it work? What is it used for?

03 Compiled vs Interpreted

What's the difference between a compiled programming language, and an interpreted one.

04 Data Types

What is a data type? How do they work? Why do I need to know this?

05 Setting up the ENV

Getting you set up with your Python Dev environment.

06 "Hello World" and Review

Run your first command, and let's look over what we learned

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01 | My Background

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My Experience

Studies:

- **Vanier College**
Computer Science Technology - 3 Year Technical Program
- **Concordia University**
Bachelor's in Engineering - Computer Engineering

Work:

- **Hydro-Quebec**
Python developer for the APD team
- **DriveCX**
Backend developer specializing in AWS QuickSight and ChatGPT

}

My Skill Set

In my education and career, I've come to know the following programming languages, tools, and integrations:

- | | | |
|--------------|---------|------------|
| ❑ Java | ❑ HTML | ❑ ChatGPT |
| ❑ C# | ❑ CSS | ❑ AWS |
| ❑ PHP | ❑ MS365 | ❑ Unity |
| ❑ Python | ❑ SQL | ❑ Windows |
| ❑ JavaScript | ❑ Git | ❑ Linux !! |

}

Why this matters for you

- If you pursue Computer Science in CEGEP, you'll be entering with knowledge of some programming best practices.
- Companies are always looking to hire programmers, so this can be your entrypoint to the workforce.
- You can trust that what I'm teaching you will give you value later on... And it's fun!

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02 | What is Python?

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Can anyone tell me
what Python is?

The answer {

- Python is a programming language
- Python is **INTERPRETED**
- Python is **Weakly Typed**
- Python is **Simple**

AND...

- **I think Python is fun**

}

Big Apps that use Python {

According to Monocubed, the following apps all include sections built in Python;

- Spotify
- Pinterest
- Uber
- Quora
- Facebook
- Reddit
- Instagram

}

Patel, Jeel. "8 Most Popular Apps Built with Python to Consider in 2023." *Monocubed*, Monocubed, 27 Apr. 2021, www.monocubed.com/blog/apps-built-with-python/.

03

Compiled vs Interpreted

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Compiled Languages {

Compiled languages are programming languages that use a compiler!

This means that when you write the code, it is compiled into machine code (What your computer understands), and then it can be executed very quickly.

Compiled languages are fast to run, but they can be very slow to compile.

}

Interpreted Languages {

Interpreted languages are programming languages that use an interpreter!

The interpreter reads and converts the code as it is being executed, so no compiling is necessary!

Interpreted languages are slower to run, but they have no compile time.

}

- Java - Compiled
- C# - Compiled
- C++ - Compiled
- C - Compiled
- Visual Basic - Compiled
- Assembly - Neither
- PHP - Interpreted
- JavaScript - Interpreted
- GoLang - Compiled
- Rust - Compiled
- Python - Interpreted
- Ruby - Interpreted

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04 | Data Types

Primitive Data Types {

- Char: A single character. (e.g. 'A')
- Int: A whole number (e.g. 117)
- Float: A non-integer with a maximum of 64 bits (e.g. 11.7, or the max of 1.8×10^{308})

In other programming languages, the float has a max of 32 bits, and another data type called Double supports 64 bits

} - Boolean: True or False

Complex Data Types {

- String: A word, sentence, or any series of characters. (e.g. "Hello World")

There are other complex data types such as Objects and Arrays, but we'll cover those later.

}

Name the Data Type:

- "I went to the store yesterday"
- 1347.0
- True
- 11.5994
- '@'
- '^'
- "Chicken"
- 502

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Setting up the ENV

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Let's get started {

Go to: www.python.org/downloads/

Download the latest version for Windows

Download Python 3.11.5

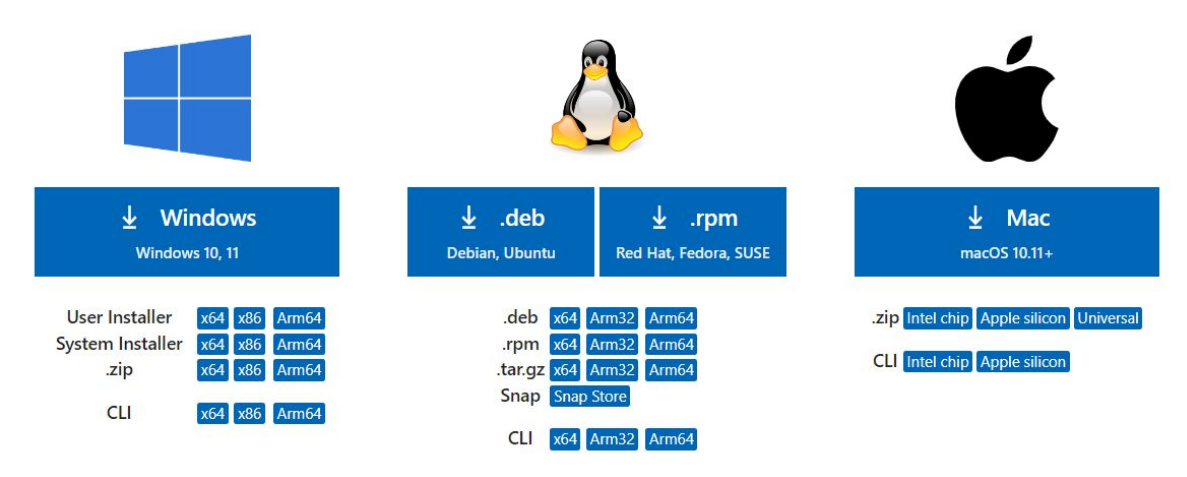
Looking for Python with a different OS? Python for [Windows](#),
[Linux/UNIX](#), [macOS](#), [Other](#)

Want to help test development versions of Python 3.12? [Prereleases](#),
[Docker images](#)

}

Next we need VSCode {

Go to: code.visualstudio.com/download



The screenshot displays the Visual Studio Code download page with three main sections: Windows, Linux, and Mac. Each section includes a download button and a list of available installers and their supported architectures.

Platform	Download Button	Available Installers	Supported Architectures
Windows	↓ Windows Windows 10, 11	User Installer, System Installer, .zip, CLI	x64, x86, Arm64
Linux	↓ .deb Debian, Ubuntu	.deb, .rpm, .tar.gz, Snap, CLI	x64, Arm32, Arm64
Mac	↓ Mac macOS 10.11+	.zip, CLI	Intel chip, Apple silicon, Universal

Now, we get the Python
extension on VSC {



Python

v2023.14.0

Microsoft  microsoft.com

98,087,915

★★★★☆ (557)

IntelliSense (Pylance), Linting, Debugging (multi-threaded, remote), code formatting, refactoring, unit tests, and more.

Disable

Uninstall

Switch to Pre-Release Version



This extension is enabled globally.



Prettier - Code formatter

v10.1.0

Prettier  prettier.io

36,621,267

★★★★☆ (426)

♥ Sponsor

Code formatter using prettier

Install



06

“Hello World” and Review

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“Hello World” Exercise

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Let's Recap

Today, We learned:

1. How to set up a Python Dev environment
2. Primitive Data Types
3. Compiled vs Interpreted programming languages
4. What is Python and what is it used for

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    We're going to learn
    operators and operands, if
    statements, and I'll be
    giving you your first
    assignment.
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Any questions?

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