



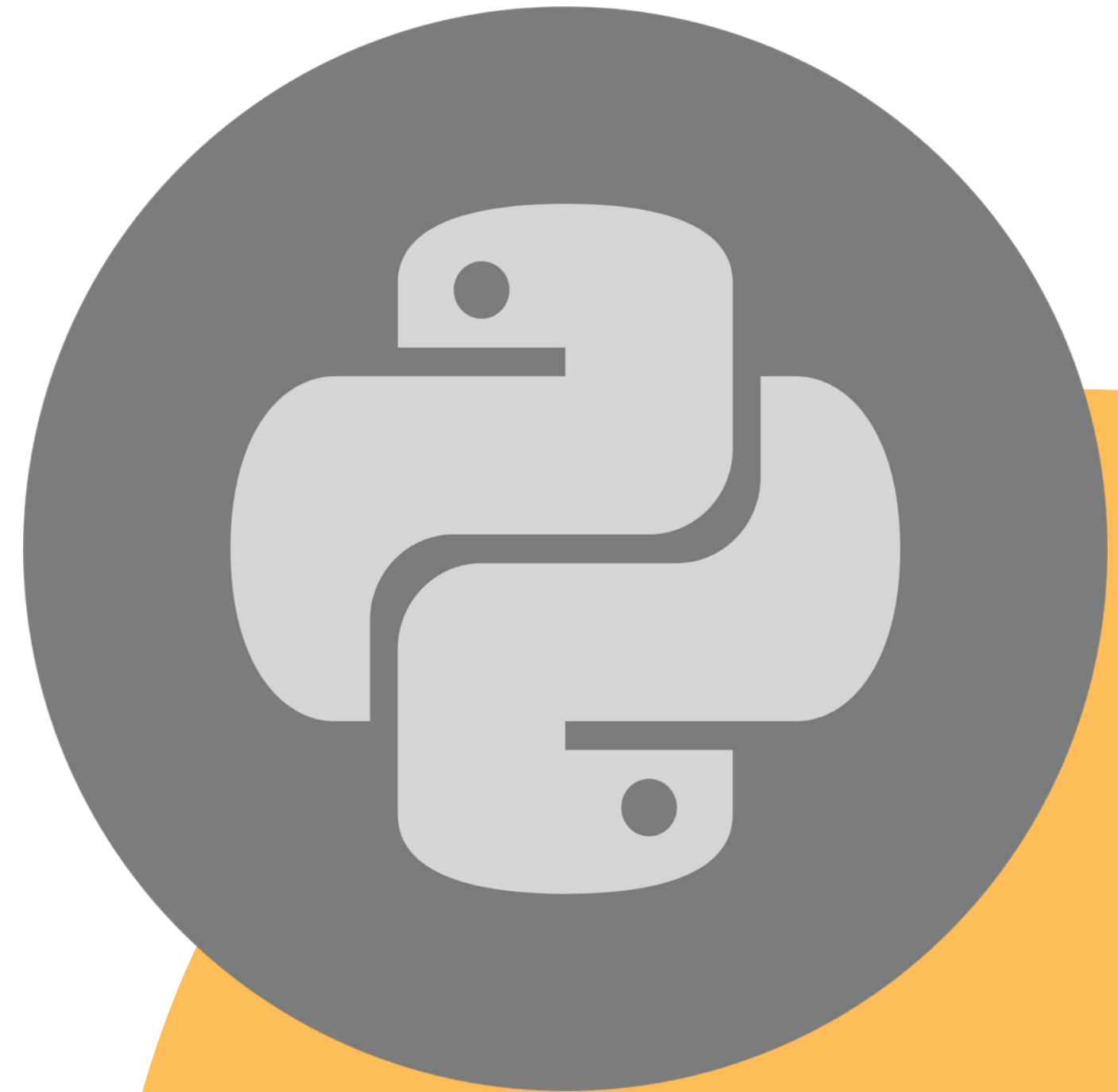
PYTHON COURSE



ENTRY LEVEL

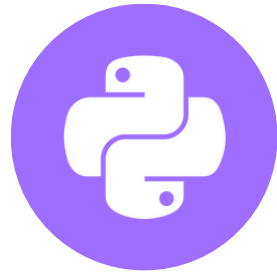
Basics of programming in Python 3.10

This course will cover part of the arguments found in
PCEP™ – Certified Entry-Level Python Programmer
Certification



FUNDAMENTAL TERMS AND DEFINITIONS

PYTHON



PYTHON INTERPRETER

WHAT IS AND HOW DOES IT WORK

Is called “**CPython**” (written in **C** programming language). It is used to make computers understand and execute python code.

① Source code analysis

In this phase, the interpreter checks for errors in the code, It follows the **indentation rule** and checks the **Python syntax**. if no error are found, **the interpreter will divide the source code into small pieces, called tokens**.

② Byte Code Generation

The Parser of the interpreter will now store every single token in a big structure called AST (Abstract Syntax Tree) to translate them into byte code (Machine language)

③ PVM / Python Virtual Machine

The interpreter initialize its runtime engine called PVM and loads the byte code in it. The code is translated in 0s and 1s and the result is printed

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COMPILER VS INTERPRETER



COMPILER

Converts the entire code ahead of time **before the program runs.**



Compiled code generally runs faster



Analysis is made on the entire code, which takes more time

INTERPRETER

translates the code line-by-line **when the program is running.**



The code is analyzed and executed line by line, faster



Interpreted code generally runs slower

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HOW TO WRITE PYTHON CODE

What is a program?

We can define a program at its most basic as **a sequence of statements**, crafted to do something.

LEXICON

The total of
available and valid
words to be used
in the python
program

SYNTAX

How words and
terms have to be
arrange for the
interpreter while
writing code

SEMANTIC

what practically
does or not make
sense in the
context of your
source code.

Checked by the **Interpreter** at Runtime



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HOW TO WRITE PYTHON CODE

LET'S START WRITING YOUR FIRST PYTHON PROGRAM!

Open python interactive shell, directly from Windows PowerShell or Terminal, by typing **python3** and pressing enter. You should see something like this:

```
Python 3.10.11 (v3.10.11:7d4cc5aa85, Apr 4 2023, 19:05:19) [Clang 13.0.0 (clang-1300.0.29.30)] on darwin
Type "help", "copyright", "credits" or "license" for more information.
```

Now enter the following instruction: `print("Hello World!")` and press enter

```
[>>> print("Hello World")
Hello World
>>> █
```

CONGRATS! YOU SUCCESSFULLY EXECUTE YOUR FIRST PYTHON PROGRAM!





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We'll later understand what we've really done right now, but first, **let's move on to the next chapter** about Python logic and structure.



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RECAP

- What is python and how does it works.
 - How to download and Install python 3.10.11
 - Interpreter and interpreting, some differences with compilers
 - Open python shell and running a basic instruction
- 
- 



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QUESTION 1:

Choose all the statements that are True:

1. Python is a Compiled, dynamically-typed programming language.
2. The interpreter translate programs line-by-line while running.
3. The compiler translate programs line-by-line while running.
4. Interpreted code generally runs slower





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QUESTION 2:

Select the correct answer:

1. Syntax defines what practically does or not make sense in the context of your source code.
2. PIP is the basic and most common package manager for python.
3. In dynamically typed languages programmers have to declare variable types.
4. Command `pip --version` is used to check actual python interpreter version.

