Python

**Python 3: <https://www.python.org/downloads/>**

**IDE**:

**Pycharm:** <https://www.jetbrains.com/pycharm/download/#section=mac>

**jupyter NoteBook:** <https://jupyter.org/>

**Anacanda:** <https://www.anaconda.com/>

**VS Code**:

**Python TechM Udemy Class:** <https://tm.udemy.com/course/complete-python-developer-zero-to-mastery/learn/lecture/15604636#overview>

**Python Version: 3.9**

CMD for check default version of python which install in your mac : **python --version**

CMD for check have you install any version of python3 in your system or not : **python3 —version**

**What is difference between compiler & interpreter**

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| --- | --- | --- |
| S.No. | Compiler | Interpreter |
| 1 | The compiler scans the whole program in one go. | Translates the program one statement at a time. |
| 2 | As it scans the code in one go, the errors (if any) are shown at the end together. | Considering it scans code one line at a time, errors are shown line by line. |
| 3 | The main advantage of compilers is its execution time. | Due to interpreters being slow in executing the object code, it is preferred less. |
| 4 | It converts the source code into object code. | It does not convert source code into object code instead it scans it line by line |
| 5 | It does not require source code for later execution. | It requires source code for later execution. |
| 6 | Execution of the program takes place only after the whole program is compiled. | Execution of the program happens after every line is checked or evaluated. |
| 7 | The machine code is stored in the disk storage. | Machine code is nowhere stored. |
| 8 | Compilers more often take a large amount of time for analyzing the source code. | In comparison, Interpreters take less time for analyzing the source code. |
| 9 | It is more efficient. | It is less efficient. |
| 10 | CPU utilization is more. | CPU utilization is less. |
| Eg. | C, C++, C#, etc are programming languages that are compiler-based. | Python, Ruby, Perl, SNOBOL, MATLAB, etc are programming languages that are interpreter-based. |

**What is Python:** Python is a high-level, interpreted, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation. Python is dynamically-typed and garbage-collected.

Interpreter: run the code line by line & convert it into byte code

CPython VM: It is virtual C Python machine which convert byte code into machine code.