Python 3 Programming

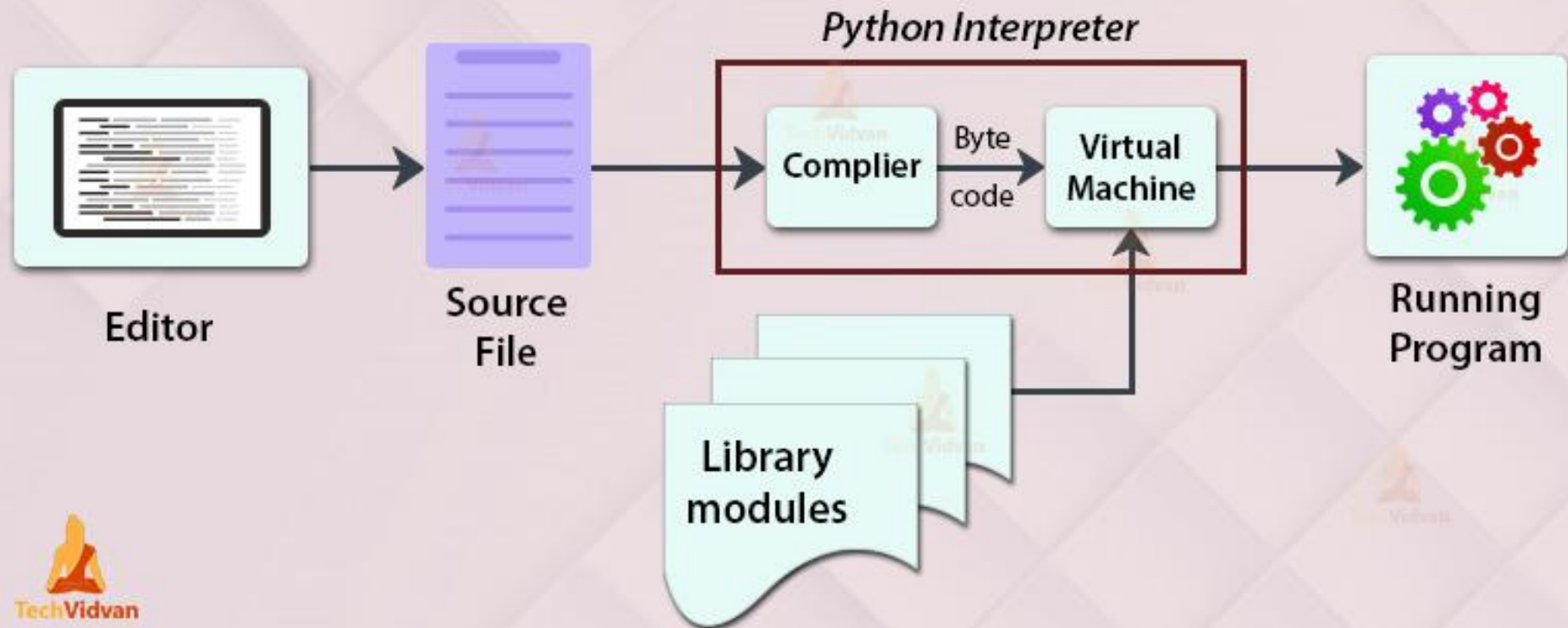## Introduction

What is a Programming Language ?

- A Programming Language is a set of instructions that produce various kinds of output.
- Programming Languages are used in Computer Programming to implement algorithms.
- Examples: C, C++, Java, Python, etc.

What is Python Programming ?

- It is a general-purpose interpreted interactive, object oriented and high level programming language.
- It was created by Guidovan Rossum during 1985-1990.
- Python's source code is also available under the GNU General Public License(GPL).
- It is named after a TV show called Monty Python.
- Python 3.0 was released in 2008
- Python is ideal for scripting and rapid application development.
- It is used in Web Development, Scientific and Mathematical Computing, GUI application, etc.

Why to learn Python 3 ?

PYTHON 2 vs 3
2018 DIFFERENCES

PYTHON 2	PYTHON 3

Legacy ←   >   **Future** →

It is still entrenched in the software at certain companies

It will take over Python 2 by 2020

Library   ≠   **Library**

Many older libraries built for Python 2 are not forwards-compatible

Many of today's developers are creating libraries strictly for use with Python 3

0100 0001 **ASCII**   +   **Unicode** 0000 0000 0100 0001

Strings are stored as ASCII by default

Text strings are Unicode by default

5/2=2   ≠   **5/2=2.5**

It rounds your calculation down to the nearest whole number

The expression 5 / 2 will return the expected result

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print "hello"   ≠   **print ("hello")**

Python 2 print statement

The print statement has been replaced with a print () function

First Program: "Hello World"

in the Python
```
print "Hello, World!"
```

in the C
```c
#include <stdio.h>
int main(void) {
    printf("hello, world\n");
    return 0;
}
```
in the C++
```cpp
#include <iostream.h>
void main(){
    cout << "Hello, world." << endl;
}
```
in the Java
```java
public class HelloWorld{
  public static void main(String args[]){
    System.out.println("Hello, World!");
  }
}
```