**Software Development Life Cycle [SDLC]**

Deliver

Testing

Coding

Design

Analysis

Feasibility

Requirement

**Module:-**

* Module Is a collection of function.
* By using import keyword we can import a module.
* If function in that Module.
* By using as keyword can do aliasing to the Module name

Ex:- math=m

* For multiple importing module

Ex:-import Fn1, Fn2, Fn3………Fnn

Syntax:-

1. Import **ModuleName.**

Example:

import math

x=math.factorial(5)

print(x)

b=math.sqrt(25)

print(b)

**output:**

[Running] python -u "d:\python\python\1.py"

120

5.0

**Features of python**

**1. Free and Open Source**

Python language is freely available at the official website and you can download it from the given download link below click on the **Download Python** keyword. [Download Python](https://www.python.org/downloads/) Since it is open-source, this means that source code is also available to the public. So you can download it, use it as well as share it.

**2. Easy to code**

Python is a high-level programming language. Python is very easy to learn the language as compared to other languages like C, C#, JavaScript, Java, etc. It is very easy to code in the Python language and anybody can learn Python basics in a few hours or days. It is also a developer-friendly language.

As you will see, learning Python is quite simple. As was already established, Python’s syntax is really straightforward. The code block is defined by the indentations rather than by semicolons or brackets.

**3. Object-Oriented Language**

One of the key features of Python is Object-Oriented programming. Python supports object-oriented language and concepts of classes, object encapsulation, etc.

**4. High-Level Language**

Human understand the language.

**5.Dynamically type**

No need to declare type of data that is stored in variable.

**6.Case Sensitive:-**

Uppercase and Lowercase attributes treated different.

Example:-

AB=20,ab=20

### ****7. Interpreted Language****

Python is an Interpreted Language because Python code is executed line by line at a time. like other languages C, C++, Java, etc. there is no need to compile Python code this makes it easier to debug our code. The source code of Python is converted into an immediate form called **byte code**.

**8. Scripting Language**

**Python is used for scripting purpose also(Design wepage).**

**Id Function:-**

* **If two variables have same value both will save same memory location.**
* **One variable can have only one value at a time.**
* **One memory location can have more than one reference.**
* **In a value of zero reference then it is mode to garbage collection by python memory management (PMM).**

**Example:-**

a=10

b=20

c=20

print(f'a={a} address-{id(a)}')

print(f'b={b} address-{id(b)}')

print(f'c={c} address-{id(c)}')

**output:**

a=10 address-2620273787408

b=20 address-2620273787728

c=20 address-2620273787728

**Variables:-**

**Variable is a name that is given to memory location.**

**Identifiers:-**

**Identifiers is used to identify class name function and variable name.**

**Rules for Identifier :-**

* **Integer not allowed**
* **Combination of alphabets and number can be possible but it should not start with number.**
* **Reserved Keyword not allowed.**
* **Special character are not allowed except ‘\_’ .**

**Python Keywords:-**

**• await**

**• else**

**• import**

**• pass**

**• None**

**• break**

**• except**

**• in**

**• raise**

**• True**

**• class**

**• finally**

**• is**

**• return**

**• and**

**• continue**

**• for**

**• lambda**

**• try**

**• as**

**• def**

**• from**

**• nonlocal**

**• while**

**• assert**

**• del**

**• global**

**• not**

**• with**

**• async**

**• elif**

**• if**

**• or**

**• yield**

**Data Types:-**

* **Data type is divided into two parts**

1. **Single value Data type**
2. **Collection Data type**

**Single value Data type**

1. **Integer**
2. **Float**
3. **Boolean**
4. **Complex**

**Collection Data type**

1. **List**
2. **Tuple**
3. **String**
4. **Dictionary**

**Integer:-**

* + **A number with out decimal point is known as integer.**
  + **Default value of integer is 0.**

**Example:**

a=5

print(a)

print(type(a))

print(int())

output:

D:\python\python>python 1.py

5

<class 'int'>

0