**Python Basics**

**Python**

* Python is an object oriented, interpreted, high-level programming language
* Python was created by Guido Van Rossom (Google Employee)
* The initial code was published as version 0.9 in 1991 and grew up to version 1.0 in January 1994
* Python is a case sensitive language

**Why the language is named Python?**

It is named after a BBC show called Monty’s Python Flying Circus [British Comedy Group – TV Show]

**Why Python?**

* Python is simple and easy to learn
* It has libraries for almost everything
* DJango : for Web Development
* Matplotlib : for Data Visualization
* It is reliable, efficient and time-saving
* It has a large, active, and helpful open-source community
* It offers career opportunities in various fields

**Where can we use Python?**

* Web Application
* DJango, Flask, Tornado
* Desktop Application
* PyGTK, Cocoa
* Machine Learning, Data Science and Deep Learning
* Sklearn, TensorFlow, Theano, Spark
* Hardware Programming
* Raspberry Pi

**Variables**

A Variable is a memory location where we can store values.

In Python, the data type will be identified according to the data we provide.

**Rules:**

1. A variable should start with a letter or an underscore
2. Cann’t start with numbers, special characters

There are two ways of assigning values to a variable:

1. Assigning a Single Value

i = 10, b = ‘Upendra’

1. Multiple Assignment

a = b = c = 10

x , y, z = 20, 30, 40

name, age = 25 × **wrong assignment**

**Python Tokens**

In Python, every logical line of code is broken down into components known as Tokens.

1. **Keywords:**

* Python Keywords are special reserved words
* They convey a special meaning to the compiler / interpreter
* Each keyword has a special meaning and a specific operations
* Never use it as variable

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| True | False | None | and | as | Asset |
| def | class | continue | break | else | finally |
| elif | del | except | global | for | if |
| from | import | raise | try | or | returns |
| pass | nonlocal | in | not | is | lambda |

1. **Identifiers**

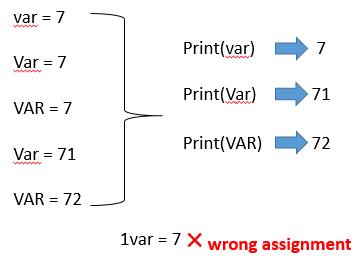
An identifiers is the name used to identify a variable, function, class, or object

**Rules :**

1. No special character, except underscore ( \_ ) can be used as an identifiers
2. Keywords should not be used as an identifiers
3. Python is case sensitive

e.g. “Var” and “var” are two different idenifiers

1. The first character of an identifier can be a alphabet or underscore ( \_ ) but not a digit



1. **Literals**

A literal is the raw data given to a variable.

**String Literals:**

Formed by enclosing a text within quotes, both single ( ‘ ) and double quotes ( “ ) can be used.

|  |  |
| --- | --- |
| **Input** | **Output** |
| name1 = “John” |  |
| name2 = “James” |  |
| print (name1) | John |
| print(name2) | James |
| text1 = ‘Hello \  World’  Print(text1) | Hello World |
| # used for long statements  multiline = ‘’’ str1  str2  str3 ‘’’  print(multiline) | str1  str2  str3 |

**Numeric Literals:**

Formed by enclosing a text within quotes, both single ( ‘ ) and double quotes ( “ ) can be used

1. **Operators**