**Python Training Document**

* **Python Features:**
  + Python is a dynamic, free open source and interpreted programming language.
  + It supports both object-oriented as well as procedural oriented programming.
  + Since it is a dynamically typed language we don’t declare the type of the variable.
  + Easy to code.
  + It has GUI programming support. (ex: PyQt4, PyQt5)
  + It is a High-Level language.
  + It is portable Language.
  + It has large standard libraries.
  + It is extensible. It can be extended to other languages like C, C++.
* **Advantages:**
  + Less coding since it has standard library support, so we don’t have to depend on third party libraries.
  + Affordable. It is free so individuals, small or big companies can leverage the free available resources.
  + Python can run on any machine whether it is Windows, Linux, or Mac.
* **Disadvantages:**
  + Since python is interpreted and is executed line by line, it often results in slow execution.
  + Weak in Mobile Computing and Browsers. While it is an excellent server-side Language, it is much rarely seen on client-side.
  + Underdeveloped Database Layers. When compared to JDBC and ODBC, Python’s Database access layer are a bit underdeveloped.
* **Python Identifiers:**

A Python identifier is a name used to identify a variable, function, class, or an object. An identifier starts with a letter A to Z or a to z or an underscore (\_) followed by zero or more letters, underscores and digits (0 to 9). Python does not allow punctuation characters such as @, $, and % within identifiers. Python is a case sensitive programming language.

* **Python Keywords:**

Python Keywords are reserved words which cannot be used as a variable name, object name or any other identifiers.

Ex: None, True, False, and, or, not, in, is, **iteration keywords** like for, while, break, continue, **conditional keywords** like if, else, elif, declaration keywords like def, class and so on.

* **Python Data Types:**

There are many categories in data types in python:

* + **Numeric Type:**

This represents the data which has numeric values. They can be integers, floating numbers or even complex numbers.

* + **Sequence Type**:

Sequence Data types are nothing but ordered collection of similar or different data types. There are several sequence types in python:

* + - String:

A string is a collection of one more characters put in a single, double or triple quotes. String type are immutable in python.

* + - Lists:

List is an ordered collection of data. Items in the list may not be of the same type.

* + - Tuple:

Tuple is also an ordered collection of data, the only difference between lists and tuples is that they are immutable.

* + **Set:**

Set is an unordered collection of data types that is iterable, mutable, and has no duplicate elements.

* + **Dictionary:**

Dictionary is an unordered collection of data values, used to store data in a key-value pair like a map.

* + **Boolean:**

Boolean is an unique data type which stores one of the two built-in values either True or False.

* **Python Variables:**

Python is dynamically typed, we do not need to declare variables before using them or declare their type.

A Variable is nothing but a name given to the data stored in the memory location.

We can also re-declare the variables once we have declared it already.

Ex: a=5

print(a)

a=8.5

print(a)

it will print both 5 and 8.5 one after the other.

We can also assign single using = operator.

Ex: a=b=c=15;